2010 American Institute of Higher Education

4th International Conference

March 17 - 19, 2010 -- Williamsburg, Virginia

Proceedings

Volume 3, Number 1

MESSAGE FROM THE CONFERENCE CHAIR

On behalf of the Williamsburg Conference organizing committee, I would like to welcome you to Williamsburg and to the 4th International Conference of the American Institute of Higher Education (AmHighEd). The conference will provide an opportunity for participants to share their ideas and research in all the fields of business and education.

Our previous three conferences were great successes. We received much constructive and kind feedback from the participants. Participants have benefited from the friendly environment we created by keeping the number of participants within a desirable limit and by continuously incorporating the participants' input and feedback in designing the conferences. The number of papers that we have accepted for presentation has increased from 60 in the first conference to 130 in this conference. We have enhanced the Internet division by creating a real time environment in which the participants can present and discuss their research rather than simply posting it online without interaction. The Internet presentations will be broadcasted in our regular conference sessions so that all participants can attend the sessions. The submission and registration processes were also improved, providing submission and payment confirmations upon receipt.

We at AmHighEd believe that research is a cooperative enterprise among scholars and practitioners. That is why we are committed to providing a collaborative environment that fosters the free flow of ideas and constructive feedback among researchers, practitioners, and students. We would like to thank all the attendees whose contributions and participation are essential to creating a stimulating environment at the conference.

I would like to take this opportunity to thank the organizing team that did an excellent job of putting this conference together. I am also indebted to our reviewers who reviewed the manuscripts, sometimes under extreme time constraints, and selected the best papers that fit this conference.

We hope you will find the conference productive, informative, and enjoyable. We also wish you a pleasant stay in Williamsburg and look forward to receiving your constructive comments that would help us in our future planning.

Sincerely,
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Table of Contents

THE BALANCED SCORECARD: AN EMPIRICAL INVESTIGATION OF THE IMPACT ON CORPORATE FINANCIAL PERFORMANCE – VALUABLE STRATEGIC MANAGEMENT TOOL OR PASSING FAD

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ABSTRACT

The concept of a balanced scorecard approach to performance measurement has been around for about 17 years. Robert Kaplan and David Norton first introduced the balanced scorecard concept in a 1992 Harvard Business Review article entitled "The Balanced Scorecard – Measures That Drive Performance".

The concept of a balanced scorecard is standard content for a modern college cost accounting textbook, and it is presented as a tool that will unquestionably lead to the creation of future economic value for the organization. This contention, however, has yet to be empirically validated! We are in essence teaching as fact something which has yet to proven to be a fact.

Much has been written about the concept and numerous empirical studies have been conducted to evaluate the benefits of the balanced scorecard. The results of these empirical studies are varied and inconclusive with respect to the benefit of implementing a balanced scorecard in the form of improved financial performance. Often the empirical research is in the form of a case study, and it is therefore difficult to make generalizations from the results. Further, the reporting of the studies is incomplete in certain respects. The literature has yet to present the results of an empirical research study that conclusively demonstrates that the adoption and implementation of a balanced scorecard is associated with improved financial performance.

The present research study was an attempt to further expand and develop the balanced scored literature. It entailed an empirical examination of the improvement in financial performance resulting from the implementation of a balanced scorecard. In this regard, the study used the responses to a mail survey questionnaire that were received from chief financial officers of Fortune 1000 companies, along with publicly available published financial performance information for both individual companies and also for industries as identified by industry SIC codes. The research question that was addressed by this study is: Does the implementation and use of a balanced scorecard improve company financial performance?

Using survey data along with archival financial data this research has shown empirically that there is, in the context of the present study, a statistically significant relationship between the implementation of a balanced scorecard and improved financial performance.

While the present research study is not without limitation, it has provided some much need empirical evidence with respect to the impact of the implementation of a balanced scorecard on financial performance. Intuitively, one would expect the greater and more detailed focus on operations that is characteristic of a balanced scorecard should yield superior financial returns, but without empirical evidence this is a claim that is unsubstantiated. With this study there is the initial empirical evidence that validated this claim.

CROSS-BORDER BANK MERGERS AND ACQUISITIONS: WHAT PULLS AND PUSHES BANKS TOGETHER?

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ABSTRACT

This paper attempts to evaluate factors that impel or impede cross-border bank mergers and acquisitions using logistic regressions. The effects of bank specific features, from both target and acquiring banks' perspectives, are estimated. The effects of bank regulations are estimated, from both target and acquiring countries' perspectives. Three comprehensive and informative datasets are combined to become a unique dataset to study banks' cross-border merger and acquisition activities. The banking sector regulatory variables included are expected to make this study the first to empirically and comprehensively analyze the interrelationship between bank regulations and cross-border bank mergers and acquisitions.

Keywords: cross-border banking, bank mergers and acquisitions, bank regulation

Introduction

Over a decade, banks' cross-border merger and acquisition activities have shown a surge. The intensification of globalization is the foremost engine launching global banking. Search for economic profits from international comparative advantages motivated companies to expand abroad; banks thereby followed their customers into foreign markets. Banks also try to seize the arising growth and reorientation opportunities from the subsequent global financial system restructuring, in an urgent need to expand oversea markets.

Other forces that can not be ignored are intensified banking sector deregulation (Barth, Nolle, and Rice, 2000) and more harmonized bank regulation practices between countries. The former is shown by countries' effort to remove restrictions on operating geography and multiple financial activities via financial legislations (Hagendorff, Collins, and Keasey, 2007). The latter is reflected in Basel accords that aim to foster harmonized international regulatory practices (Barth, Caprio, and Levine, 2008). In this paper, indices computed using data from past regulatory practices are used as proxies for regulatory restrictions and Basel II pillars, which are capital regulation, supervisory oversight and market discipline, to predict impacts that bank regulations impose on cross-border bank mergers and acquisitions.

The literature on bank mergers and acquisitions can be summarized into two main groups. One group uses bank level data to study banks' motivations for mergers and acquisitions via investigating banks' performance improvement after merger and acquisition activities (Gropper, 1991; Houston and Ryngaert, 1994; DeYoung and Nolle, 1996; Milbourn, Boot, and Thakor, 1999; Huizinga, Nelissenan, and Vennet, 2001; Amel, Barnes, Panetta, and Salleo, 2004; Cornett, McNutt, and Tehranian 2006). The other group uses country level data to investigate those factors that impede or impel banks' cross-border merger and acquisition activities (Dopico and Wilcox, 2002; Buch, 2003; Buch and DeLong, 2004; Claessens and Horen, 2007; Horen, 2007; Lanine and Vennet, 2007; Pasiouras, Tanna, and Gaganis, 2007; Hernando, Nieto, and Wall, 2009). However, the literatures do not explore the specific bank regulation effects (Focarelli and Pozzolo, 2001; Focarelli and Pozzolo, 2006; Berger, 2007; Kohler, 2008). In this study, a unique and comprehensive bank regulation database is used in the empirical models to address bank regulation effects from different dimensions. Further, both bank specific and country specific features are accounted for to analyze the relative importance of macro-specific versus bank-specific factors in international merger decisions.

Testable hypothesis

Economies of scale are the situations in which firms obtain average cost reductions when expanding their scale of operation to certain instances. This theory well explains why firms tend to merge or acquire other firms horizontally. Many studies on financial sector consolidation have found that economies of scale do exist after financial firms consolidate. Berger, Demsetz, and Strahan (1999) conducted detailed reviews of the broad literature on this topic. Consistent with scale economy theory, large banks should be more likely to become both cross-border targets and acquirers; X-efficiency theory (Leibenstein, 1966) indicates that firms of different efficiency levels merge would create considerable returns for both. Consistent with this theory, efficient firms should tend to acquire relatively inefficient firms; Firms can raise their economic profits by increasing their market powers in setting prices on the goods and services they provide. Under this market power hypothesis (Lanine and Vennet, 2007), firms tend to target foreign banks that possess large market shares in their home countries, through which acquiring firms can obtain remarkable market shares.

According to Focarelli and Pozzolo (2001), stringent bank regulatory restrictions lead to low frequency in cross-border bank mergers and acquisitions. Berger (2007) points out major regulation barriers against

international banking including explicit barriers like regulations limiting foreign bank entry or expansion, and implicit barriers like inconsistency in regulatory practices and legal systems between countries.

Banks engaging in cross-border merger and acquisition activities need to comply with two different sets of regulatory practices, which induce extra costs and neutralize the benefits obtainable from economies of scale and scope. Banks from countries which have already implemented more intensified deregulation on the banking sector, imposing less stringent restrictions on bank activities and ownership, and having bank regulation practices more harmonized with the global banking system, which are consistent with the Basel capital accords, relying more on capital regulation and official supervision instead of on direct control over banks, should be more attractive to foreign acquirers. With respect to acquiring banks, stringent regulations on domestic banking sector impede banks to exploit additional benefits in the domestic market via scope economies, which enhance banks' incentives to expand abroad. Whereas, regulation burdens increase domestic banks' difficulty expanding abroad, lowering the probabilities of banks' cross-border merger and acquisition activities.

Data sources and variables

The data for this study mainly come from three sources: 1) three surveys under the World Bank project "Bank Regulation and Supervision" (Barth, Caprio, and Levine, 2006); 2) BankScope; and 3) Dealogic M&A Analytics. Three datasets are merged to create a unique dataset of cross-border bank mergers and acquisitions. Since there was no unique identification for each bank across different datasets, merging them was accomplished by using bank name and when the names were not exactly unique, bank asset and other bank specific information was used to be sure correct data was assigned to each bank name.

Since in this study, the pull and push of cross-border deals are the main concerns, which are factors that pull firms to go abroad to acquire foreign banks or push banks to acquire foreign firms, transactions during 1996 and 2006 were used from Dealogic that fall into the following groups: a) both acquirers and targets are banks; b) all acquirers are banks and targets are nonbanks; c) all targets are banks and acquirers are nonbanks. In addition, classifications are based on both acquirers and targets being from the same country and acquirers and targets being from different countries.

Dependent variables are computed using information from Dealogic M&A Analytics and BankScope, which equal 1 if a bank is a cross-border target or acquirer and equal 0 otherwise. Two sets of explanatory variables are primarily used in the empirical analysis. Bank specific variables are obtained or computed from BankScope. Cost to income ratio (CTIR) is computed as the ratio of overhead to the sum of net interest revenues and other operating income. This ratio is used to measure bank's cost efficiency. Net interest margin (NIM) is the ratio of interest incomes minus interest expenses and divided by average earning assets. Return on assets (ROA) is the ratio of net income to assets. This ratio is used to measure bank's profitability and operation performance as it looks at the returns generated from the assets financed by banks. After controlling for cost efficiency and net interest margin, ROA actually measures bank's profitability from nontraditional bank activities, such as fees and trading activities. Equity to total asset ratio (E_TA) is included to account for bank's capital structure. The

leverage ratio indicates the sustainability of bank's profitability. Logarithm of bank's total assets (logTA) is included to measure bank size.

Bank regulation variables are computed using data from three World Bank surveys (Barth, Caprio, and Levine, 2006). Since banks' business scopes are expected to be greatly influenced by countries' regulatory restrictions as to what extent banks are allowed to engage in multiple activities, two variables are included to account for restrictions on banks' participation in multiple activities. Two measures as proxy for two pillars of Basel II are also included. All the bank regulation variables are reported in table 1.

Some control variables are also included to mitigate omitted variable bias. Stock market capitalization to GDP ratio (STMKTCAP) is included to account for country's financial market development status. Market share variable (MSHARE) computed as the share of a bank's asset in a country's aggregate banking assets is also included to measure individual bank's market power in the domestic market. The logarithm of real GDP per capita lagged one year (LLAGGDPPC) is included to account for country's domestic market potential. The openness index measuring countries' openness in the real economy (OPEN) is calculated as the sum of a county's imports and exports divided by GDP.

Empirical analysis

Both pull and push factors that stimulate cross-border bank mergers and acquisitions are analyzed. In particular, two concerns are addressed. First, what bank, industry and country specific factors that characterize target banks pull foreign acquirers to enter domestic countries via mergers and acquisitions? Second, what bank, industry and country specific factors that characterize acquiring banks push them to go abroad via mergers and acquisitions?

Since the dependent variable is binary, which equals 1 or 0, a binary choice model is used. There are different methodologies to estimate models with binary dependent variables. In this paper, a binomial logit model is estimated (see, McFadden, 1973), which models the probability of being chosen (Y=1) against not being chosen (Y=0). The determinants that

Table 1
Bank Regulation and Supervision Index

Variable	Description	Definition
OVER3AR	Overall activities restrictiveness measures the degree to which banks can engage in securities, insurance and real estate activities. It ranges from 4 to 16; 4 is unrestricted and 16 is prohibited.	WBG 4.1-4.3: What is the level of regulatory restrictiveness for bank participation in securities, insurance and real estate activities: (1) Unrestricted, (2) Permitted, (3) Restricted, (4) Prohibited?
BONF	Bank owning nonfinancial firms measures the degree to which banks can own voting shares in nonfinancial firms. The index ranges from 1 to 4; 1 is unrestricted and 4 is prohibited.	WBG 4.4: What is the level of regulatory restrictiveness for bank ownership of nonfinancial firms: (1) Unrestricted, (2) Permitted, (3) Restricted, (4) Prohibited?
NFOB	Nonfinancial firm owning banks measures the degree to which nonfinancial firms can own voting shares in banks. The index ranges from 1 to 4; 1 is unrestricted and 4 is prohibited.	WBG 2.3: What is the level of regulatory restrictiveness for nonfinancial firms ownership of banks: (1) Unrestricted, (2) Permitted, (3) Restricted, (4) Prohibited?
BCASSET	Bank concentration assets measures percent of top five banks' assets to country's total bank assets (%).	WBG 2.6.2: of commercial banks in your country, what fraction of assets is held by the five largest banks?
GOVBANK	Government bank ownership measures percent of government-owned bank assets to country's total bank assets (%).	WBG 3.8.1: What fraction of the banking system's assets is in banks that are 50% or more government owned?
CRINDEX	Capital regulatory index measures both the amount of capital and verifiable sources of capital that a bank is required to possess. It ranges from 3 to 10; higher values indicate greater stringency.	(a) + (b) (a) Overall capital stringency: WBG3.1.1+3.2+3.3+3.9.1+3.9.2+3.9.3+(1 if 3.7<0.75); Yes=1; No=0 (b) Initial capital stringency: WBG1.5+1.6+1.7; WBG 1.5: Yes=0, No=1; WBG 1.6&1.7: Yes=1, No=0.

Table 1 (continued)

Variable	Description	Definition
		WBG1.5: Are the sources of funds to be used as capital verified by the regulatory/supervisory authorities?
		WBG1.6: Can the initial disbursement or subsequent injections of capital be done with assets other than cash or government securities?
		WBG1.7: Can initial disbursement of capital be done with borrowed funds?
		WBG3.1: What is the minimum capital-asset ratio requirement?
		WBG3.1.1: Is this ratio risk weighted in line with the 1988 Basle guidelines?
		WBG3.2: Does the minimum ratio vary as a function of an individual bank's credit risk?
		WBG3.3: Does the minimum ratio vary as a function of market risk?
		WBG3.7: What fraction of revaluation gains is allowed as part of capital?
		WBG3.9: Before minimum capital adequacy is determined, which of the following are deducted from the book value of capital?
		WBG3.9.1: Market value of loan losses not realized in accounting books?
		WBG3.9.2: Unrealized losses in securities portfolios
		WBG3.9.3: Unrealized foreign exchange losses?
OSPOWER	Official supervisory power measures the extent to which	WBG5.5+5.6+5.7+6.1+10.4+11.2+11.3.1+11.3.2+11.3.3+11.6+11.7+11.9.1+11.9.2+11.9.3; WBG 5.5, 5.6, 5.7, 6.1, 10.4, 11.2, 11.3.1, 11.3.2&11.3.3: Yes=1, No=0; WBG 11.6, 11.7&11.9: Bank supervisor=1; Deposit insurance agency=0.5; Bank restructuring or asset management agency=0.5; Others=0.

Table 1 (continued)

Variable	Description	Definition
		WBG5.6: Are auditors required by law to communicate directly to the supervisory agency any presumed involvement of bank directors or senior managers in elicit activities, fraud, or insider abuse?
		WBG5.7: Can supervisors take legal action
		WBG6.1: Can the supervisory authority force a bank to change its internal organizational structure?
		WBG10.4: Are off-balance sheet items disclosed to supervisors?
		WBG11.2: Can the supervisory agency order the bank's directors or management to constitute provisions to cover actual or potential losses?
		WBG11.3: Can the supervisory agency suspend the directors' decision to distribute:
		WBG11.3.1: Dividends?
		WBG11.3.2: Bonuses?
		WBG11.3.3: Management fees?
		WBG11.6: Who can legally declare - such that this declaration supersedes the some of the rights of shareholders – that a bank is insolvent?
		WBG11.7: According to the banking law, who has authority to intervene – that is, suspend some or all ownership rights – a problem bank?
		WBG11.9: Regarding bank restructuring and reorganization, can the supervisory agency or any other government agency do the following:
		WBG11.9.1: Supersede shareholder rights?
		WBG11.9.2: Remove and replace management?
		WBG11.9.3: Remove and replace directors?

affect probability of cross-border bank mergers and acquisitions are sketched by two sets of regression equations:

$$P(Y=1)=\alpha+\beta_1 BANK\_TAR_{+}\beta_2 REG\_TAR_{+}\beta_3 ECON\_TAR \quad (1)$$

$$P(Y=1)=\alpha+\beta_1 BANK\_ACQ_{+}\beta_2 REG\_ACQ_{+}\beta_3 ECON\_ACQ \quad (2)$$

Where 1=target bank in equation (1) and 1=acquiring bank in equation (2). BANK is a vector of bank characteristic variables for target bank and acquiring bank respectively. REG is a vector of bank regulatory variables for target country and acquiring country. A vector of macroeconomic variables is also controlled.

Pull factors

Binomial regressions on pull factors estimate the effects of target bank specific factors and target country specific bank regulatory factors on target bank probability. Several specifications of equation 1 are estimated (table 2).

As expected, both bank size and cost to income ratio are positively correlated with banks' probability of being cross-border acquired, which indicates that large and inefficient banks are more likely to become cross-border targets.

More restrictions on bank owning nonfinancial firms (BONF) lower domestic banks' probability of being targeted. It can be interpreted as bank ownership restrictions reduce bank's probability to achieve scope economies via engaging in nonfinancial activities. Greater restrictions on bank activities (OVER3AR) result in banks' higher probability of being acquired. After controlling for the stock market capitalization ratio, the bank activity restriction effect diminishes. Thus, it can be hypothesized that the positive bank activity restriction effect actually reflects the negative security market development effect, which is verified by the significantly negative coefficient of the stock market capitalization ratio. BCASSET is positively related to target probability, indicating that more concentrated banking sectors induce more foreign entry.

Some features of bank regulatory and supervisory regime may be sufficiently correlated with other features (see Barth, Caprio, and Levine, 2006), thus impacts of some bank regulatory variables on target probability may be significantly influenced by others. To identify the effects of certain bank regulation features on banks' target probabilities in the presence of other bank regulation features, bank activity restriction indicator is interacted with capital

Table 2
Pull Regression

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-7.438***	-10.546***	-10.239***	-10.000***	-9.114***	-13.657***
	(0.698)	(1.580)	(1.592)	(1.618)	(2.468)	(2.240)
CTIR	0.003***	0.003***	0.002**	0.003**	0.003**	0.003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
ROAA	0.017	0.018	0.012	0.013	-0.005	0.028
	(0.021)	(0.021)	(0.022)	(0.023)	(0.022)	(0.033)
logTA	0.335***	0.341***	0.389***	0.376***	0.405**	0.355***
	(0.033)	(0.033)	(0.035)	(0.036)	(0.065)	(0.053)
E_TA	0.004	0.004	0.007	0.007	0.003	0.008
	(0.006)	(0.006)	(0.006)	(0.006)	(0.008)	(0.008)
NIM	0.001	0.001	0.001	0.001	-0.001	-0.017
	(0.004)	(0.004)	(0.005)	(0.005)	(0.008)	(0.027)
OVER3AR	0.084*	0.089**	0.023	0.031	0.024	-0.065
	(0.043)	(0.044)	(0.047)	(0.048)	(0.067)	(0.059)
BONF	-0.333***	-0.358***	-0.342***	-0.319***	-0.257*	-0.122
	(0.109)	(0.110)	(0.111)	(0.112)	(0.136)	(0.156)
NFOB	-0.032	-0.045	-0.033	-0.063	-0.472**	0.053

Table 2 (continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
BCASSET	0.010***	0.010***	0.009***	0.007**	0.016***	0.010**
	(0.003)	(0.003)	(0.003)	(0.004)	(0.006)	(0.005)
GOVBANK	0.004	0.003	-0.003	-0.003	-0.011*	0.041**
	(0.003)	(0.003)	(0.004)	(0.004)	(0.006)	(0.017)
CRINDEX*OSPOWER		-0.044**	-0.055***	-0.054** *	-0.057**	-0.091** *
		(0.020)	(0.020)	(0.020)	(0.028)	(0.025)
STMKTCAP			-1.127***	-1.107** *	-1.434** *	-1.071** *
			(0.230)	(0.234)	(0.427)	(0.243)
MSHARE				0.454**	0.1914	0.4172
				(0.195)	(0.317)	(0.216)
Observations	15219	15219	14539	13990	6475	7923
Pseudo R2	0.06	0.06	0.08	0.08	0.08	0.08
HL Statistics	0.547	0.034	0.581	0.607	0.59	0.29

Model (1) through (6) are estimated using binomial logistic regressions, where dependent variable equals one if the bank has been cross-border acquired and zero otherwise. CTIR, ROA, logTA, E_TA and NIM are bank specific variables. OVER3AR, BONF, NFOB, CRINDEX, OSPOWER, BCASSET, GOVBANK and FORBANK are country specific bank regulatory variables. MSHARE is market share variables calculated using data from Bankscope and IFS. Data on bank specific variables are from BankScope. Data on bank specific variables are from BankScope. Bank regulatory variables are computed from World Bank Survey I/II/III under project “Bank Regulation and Supervision”.

regulation index, official supervisory power index, and an indicator measuring if a country has an explicit deposit insurance scheme. None of the interaction terms are significant. The results are consistent with Barth, Caprio, and Levine (2004), who found that restricting bank activities impede financial development and exacerbate financial fragility, even in the presence of generous deposit insurance and weak institutional environments.

A significantly negative effect for the interaction term between capital regulatory index and official supervisory power index is found. One interpretation is that effect of official supervision and capital regulation on the target probability depends on the initial level of the other. More specifically, sufficient capital regulation enhances a bank's probability of being acquired only if official supervisory power is below a certain level; increasing capital regulation, however, decreases probability if the initial official supervisory power is large. The same is true for official supervision effect. The results indicate that for those countries with a weak institutional environment, characterized by weak supervisory power and insufficient capital regulation, reinforcement of either of the regulatory instruments can make domestic banks more attractive to foreign acquirers. Whereas, for countries already implement strong official supervision or sufficient capital regulation, excessive official supervision or capital regulation will reduce domestic banks' probabilities of being acquired.

Buch and DeLong (2004) found that regulations strengthening domestic banking system make domestic banks more attractive targets of international bank mergers by increasing transparency and enhancing supervisory power. The results differ from Buch and DeLong (2004) in that official supervisory power contributes positively to target probability conditioned on insufficient capital regulation.

Based on the presumption that large bank for country with large banking system is likely to account for only a small market share, whereas small bank for country with small banking system may account for a large market share, variable is also included to account for bank's market power in domestic market. A positive correlation between bank's market share and target probability is found. Lanine and Vennet (2007) also found evidence to support the market power hypothesis.

Model 5 is specified based on the fact that over 60% of the sample target banks have a government bank ownership below 20%. High government bank ownership places an endogenetic barrier to foreign entry, i.e., some countries' domestic banks have a small probability of being cross-border acquired because of their high government bank ownership. Countries with varying degrees of privatization in banking sectors may share some common features, and this may affect the significance of some explanatory variables. It is reasonable to resample target banks to resemble those operating in countries with similar government bank ownership.

Emerging countries with high growth potential are primary objective markets for foreign capital inflows. About 60% of the sample target banks come from emerging markets. Foreign bank presence is relatively low in developed nations due to the comparative disadvantages of foreign banks after entering the markets. Specifically, foreign banks in developed nations are less efficient than domestic banks and not as profitable as domestic banks. This implicit barrier for cross-border bank mergers and acquisitions dominates if target banks are from developed nations. However, implicit and explicit barriers on foreign entry are different if target countries are developing nations. Developing nations

place more foreign entry barriers and activity restrictions. Developing nations also are more likely to subsidize government owned banks, implicitly crowding out foreign as well as privately owned banks (Berger, 2007). Based on this reasoning, the banks are again subsampled to include only those from countries with per capita GDP between 1000 and 10000 U.S. dollars (model 6).

For countries with high degree of privatization in banking sectors, cost efficiency and restrictions on bank owning nonfinancial firms become irrelevant. In addition, higher government bank ownership increases domestic banks' probabilities of being acquired. For emerging countries, more restrictions on nonfinancial firm owning banks and higher government bank ownership reduce banks' probabilities to become cross-border targets.

Push factors

Binomial regressions on push factors estimate effects of acquiring bank specific factors and acquiring country specific bank regulatory factors on bank's probability of becoming foreign acquirer (table 3). Model 1-3 include banks with assets above 10 billion US dollars.

LogTA has an expected positive effect, indicating that large banks tend to be cross-border acquirers. ROA ratio is positively related to acquiring probability. After controlling for NIM and CTIR ratios, the result indicates that banks more profitable from innovative activities are more likely to become cross-border acquirers. Compared with pull models, cost inefficiency is a determinant for target banks, while profitability from nontraditional activities is a determinant for acquiring banks.

One implication is that more efficient banks are more capable of engaging in international banking due to comparative advantages. This result also indicates that seeking profits from traditional bank activities is the main motivation of acquiring banks' cross-border takeovers. As Focarelli and Pozzolo (2001) mentioned, banks do not need to be present in foreign countries in order to expand their innovative business abroad. Innovative bank services require less face-to-face contact with customers and usually are exported cross-border directly. Thus, if banks are seeking to exploit additional profits from nontraditional bank activities in foreign markets, it should be found that more efficient banks are less likely to engage in foreign acquisitions.

BONF and OVER3AR are both negatively related to banks' acquiring probability. Both variables measure restrictions on banks. Banks headquartered in countries that are more restrictive on bank activities and ownerships are less likely to go abroad. It appears inconsistent with the economy of scope hypothesis. Bank restrictions reduce additional profits that can be exploited in domestic markets from nonbank activities. As a result, banks should have more incentive to go abroad. However, higher restrictions on banks may indicate more burdens on completing deals, reducing the probability of acquisition. The results show that negative effect dominates. NFOB has positive coefficient, indicating that more restrictions on nonfinancial firms owning banks facilitate banks to become cross-border acquirers.

Table 3

Push Regression

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-15.511***	-14.637***	-8.869***	-13.301***	-10.985**	-6.913
	(3.104)	(3.073)	(3.411)	(4.537)	(4.754)	(5.459)
CTIR	0.007	0.007	0.01	0.017	0.017	0.021
	(0.007)	(0.007)	(0.007)	(0.014)	(0.014)	(0.015)
ROAA	0.408***	0.416***	0.376***	0.874**	1.038**	0.949**
	(0.103)	(0.103)	(0.111)	(0.422)	(0.443)	(0.457)
E_TA	0.043	0.043	0.038	0.018	0	0.006
	(0.034)	(0.035)	(0.040)	(0.144)	(0.148)	(0.147)
logTA	1.373***	1.395***	1.502***	1.431***	1.454***	1.480***
	(0.122)	(0.124)	(0.134)	(0.203)	(0.204)	(0.207)
NIM	0	0	-0.002	-0.021	-0.044	-0.078
	(0.011)	(0.011)	(0.020)	(0.148)	(0.153)	(0.156)
OVER3AR	-0.840**	-0.998***	-0.979***	-1.396**	-1.748***	-1.670***
	(0.367)	(0.376)	(0.359)	(0.540)	(0.587)	(0.592)
BONF	-0.874***	-0.850***	-0.615*	-0.763	-0.75	-0.571
	(0.318)	(0.318)	(0.316)	(0.594)	(0.582)	(0.583)
NFOB	0.678***	0.718***	0.564**	0.872***	0.891***	0.792**
	(0.249)	(0.254)	(0.256)	(0.331)	(0.337)	(0.340)
CRINDEX	-0.503*	-0.621**	-0.539*	-0.777*	-1.068**	-0.995**
	(0.303)	(0.305)	(0.292)	(0.413)	(0.450)	(0.453)
OSPOWER	0.035	0.035	-0.038	-0.004	-0.003	-0.024
	(0.078)	(0.078)	(0.079)	(0.112)	(0.109)	(0.108)

Table 3 (continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
BCASSET	0.021***	0.021***	0.016**	0.01	0.01	0.008
	(0.006)	(0.006)	(0.007)	(0.008)	(0.008)	(0.008)
GOVBANK	0.020***	0.016**	-0.004	0.014	0.006	-0.006
	(0.007)	(0.007)	(0.010)	(0.010)	(0.011)	(0.014)
ER3AR*CRINDEX	0.095*	0.116**	0.099**	0.145**	0.195**	0.177**
	(0.051)	(0.052)	(0.049)	(0.072)	(0.079)	(0.081)
OPEN	0.003	0.005**	0.007***	0.002	0.003	0.005
	(0.002)	(0.002)	(0.003)	(0.003)	(0.004)	(0.004)
STMKTCAP		-0.526	-0.681*		-0.741*	-0.901**
		(0.353)	(0.347)		(0.444)	(0.458)
LLAGGDPPC			-0.617***			-0.445
			(0.193)			(0.295)
Observations	1376	1374	1374	453	453	453
Pseudo R2	0.46	0.48	0.48	0.47	0.48	0.48
HL Statistics	0.836	0.443	0.371	0.36	0.617	0.745

Models are estimated using binomial logistic regressions, where dependent variable equals one if the bank is cross-border acquirer and zero otherwise. CTIR, ROA, logTA, E_TA and NIM are bank specific variables. OVER3AR, BONF, NFOB, CRINDEX, OSPOWER, BCASSET, GOVBANK and FORBANK are country specific bank regulatory variables. Data on bank specific variables are from BankScope. Bank regulatory variables are computed from World Bank Survey I/II/III under project "Bank Regulation and Supervision". Standard errors are reported below coefficients. The symbol *** indicates a significance level of 1 percent or less; ** indicates a significance level

Government bank ownership share is positively related to bank's probability of acquiring other foreign firms. Higher government bank ownership is equivalent to lower degree of privatization in banking sector, i.e., greater barriers in domestic banking sector against entry and expansion, which motivates domestic banks to go abroad to search for new opportunities. BCASSET has positive coefficient, indicating that banks from more concentrated banking sectors tend to go abroad. The results are different from Focarelli and Pozzolo (2001) in that they found both degree of market concentration and share of state-owned bank assets not significantly related to banks' acquiring decisions. This is interpreted as sample difference. Their results are based on OECD countries.

Interaction terms of different bank regulatory variables are also included. The only significant interrelation found is between capital regulation and bank activity restriction. They are positively interrelated. It can be interpreted that the negative effect of bank activity restrictions depends on capital regulation. If capital regulation is sufficient, restrictions on bank activities are positively related to acquiring probability. More restrictions motivate banks to go abroad. If capital regulation is

insufficient, more restrictions on bank activities mitigate banking system instability, and conversely decrease the probability of cross-border mergers and acquisitions.

Taking into account that acquiring banks are likely to follow their customers abroad, variable OPEN is controlled. This variable is as expected positively related to acquiring probability, indicating that banks from more globalized countries are more likely to become cross-border acquirers. The stock market capitalization ratio is also controlled and found negatively related to acquiring probability, which is consistent with Focarelli and Pozzolo (2001). They find that banks are seeking additional profit opportunities beyond those offered by traditional bank activities at home. When domestic financial sector is sufficiently developed so that additional profits can be exploited in domestic market simply by offering more innovative financial services, banks have less incentive to expand abroad. Otherwise, banks would tend to exploit new profit opportunities by expanding abroad.

When banks are subsampled to include only those with assets above 35 billion US dollars (model 4-6), restrictions on banks owning nonfinancial firms become irrelevant. This may result from including only huge banks, which are expected to circumvent burdens readily. An insignificant banking sector concentration effect is found for huge banks, indicating that huge banks have less incentive to diversify risks likely because they are too big to fail.

Conclusion

The results show that both bank characteristics and country characteristics are important determinants of banks' cross-border merger and acquisition activities. Large banks tend to become either cross-border targets or acquirers. Cost inefficient banks are more likely to be cross-border acquired. Banks more profitable from innovative activities are more likely to acquire other foreign firms. Capital adequacy level is not a primary concern for banks' cross-border mergers and acquisitions.

As for bank regulation effects, a distinction between target banks and acquiring banks is found. Banks headquartered in countries with fewer restrictions on bank activities conditioned on sufficient capital regulations, fewer restrictions on bank owning nonfinancial firms, more concentrated banking sector, lower privatization in banking sector, are more likely to become foreign acquirers. Comparatively, target banks operating in countries with more concentrated and less restricted banking system, relying more on moderate capital regulations and official supervisions, are more attractive targets to foreign acquirers.

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RETURN VOLATILITY TRANSMISSION AMONG DEVELOPED COUNTRIES

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ABSTRACT

In this paper, we have investigated the volatility transmission in the financial markets of G-8 countries by using the VAR-EGARCH techniques. From the empirical analyses, it is fairly clear that volatility transmissions are present between the G-8 countries during the period of 1995 to 2007. Our analyses indicate that the volatilities of some of the G-8 countries are due to the volatility from other markets. Of the countries whose volatilities are significantly affected by the volatility of other markets are: Canada, France, Italy, UK and USA. Among these five countries, Canada, UK and USA seem to be very highly inter-related. The countries that are very dominant in terms of transmitting volatility are: Russia and the USA. Interestingly, Japanese markets do not seem to have any significant effect on other G-8 markets. However, there have been significant volatility transmissions from the financial markets of Canada, Russia and UK to the Japanese markets.

Keywords: *volatility, transmission, heteroskedasticiy, E-GARCH*

Introduction

Globalization and return - volatility across the asset markets drew attention to academicians and practitioners since the financial turmoil of the late 80's and early 90's. Researchers are interested in finding out the impact of shocks in return and volatility across different international stock markets and in exploring the direct and indirect impact of squared innovations from other markets on a particular market. Researchers are also interested in exploring whether the shocks have symmetric or asymmetric impact. Recently, researchers start looking closely at the dynamics of correlation in volatility. As a result, a large body of the literature of volatility spillover exists (Karolyi (1995), Koutmos and Booth (1995), Karolyi and Stulz (1996), Booth, Rouge and Koutmos (1998), Kansas (1998), Ng (2000), Engle (2002),

Worthington and Higgs (2004), Beale (2004)). Koutmos (1997) and Francis and Leachman (1996) focused their study on the G-7 stock markets. The purpose of this paper is to provide further evidences on the price and volatility spillovers across the developed countries. Previous studies by Koutmos (1997) and Francis and Leachman (1996) have collectively reported substantial asymmetry in the first and second moments of return series across the G-7 countries. To account for such asymmetry, we employ multivariate Vector Autoregressive (henceforth VAR) - Exponential Generalized Autoregressive Conditionally Heteroscedasticity (henceforth EGARCH) model to monthly closing stock returns from 1969 to 2005. An EGARCH model makes it possible to investigate the asymmetric impact of good news and bad news on the volatility transmission across these markets. This paper extends Francis and Leachman (1996) that used monthly data from April 1973 and July 1990 to model the volatility across stock returns in G-8 countries. In contrast, we have used a larger sample period and most of the developed markets that will allow us to exploit more available information to model the transmission in return and volatility. Like the previous study, we use impulse response functions to study the nature of persistence of shock in return series; in addition we use Granger causality test to explore the direction of price movements. Finally, this study also examines persistence of shock in volatility using the 'Half Life' concept.

Background and Significance

The nature of the international transmission of stock return and volatility has been the focus of several studies (Bennett and Kelleher (1988); von Furstenberg and Jeon (1989); Hamao, Masulis and Ng (1990); King and Wadhwani (1990); Schwert (1990); Susmel and Engle (1990); Neumark, Tinsley and Tosini (1991); Hamao, Masulis and Ng (1991); Ng, Chang and Chou (1991); Becker, Finnerty and Tucker (1992); Cheung and Ng (1992); Dravid, Richardson, and Craig (1993); and Theodossiou and Lee (1993)). These articles report several empirical regularities: (i) the volatility of stock prices is time-varying; (ii) when volatility is high, the price changes in major markets tend to become highly correlated; (iii) correlations in volatility and prices appear to be causal from the United States to other countries; and (iv) lagged spillovers of price changes and price volatility are found between major markets; (v) markets have become reasonably integrated over the flexible exchange rate period and it was further suggested that interdependence has increased after the stock market crash in 1987. In recent years several important findings have enriched the literature. Among them the most important study regarding the G-7 stock markets was conducted by Francis and Leachman (1996). The study reported significant asymmetry in the volatility of returns across the markets. In fact, results indicated that the volatility of equity markets in the UK, Germany and the US are the most interlinked. Japan, on the other hand, displayed the most internal isolation in conjunction with significant external impacts. Volatilities in the equity markets of Italy and France were relatively isolated while Canadian volatility was more interactive, particularly with the US. Koutmos (1997) using G-7 countries data showed that forecasts of the conditional first and second moments can be improved by taking into account both the size and sign of past innovations. In a study by Tay and Zhu (2000) found correlation in the return and volatility contemporaneously and with its lag across the Pacific-Rim Stock markets. It was reported that the idiosyncratic factors play the vital

role in the national stock markets. On the other hand, Ng (2000) devised a model that allows the unexpected return of any particular Pacific–Basin market be driven by a local idiosyncratic shock and a global shock and found evidence of volatility-spillovers across various pacific basin stock markets from Japan (regional effects) and the US (global effects). In a more recent study, Miyakoshi (2003) studied the influence of regional (Japan) and global shocks (U.S) in the Asian market. Unlike Ng (2000), the paper suggested that it is the global factor influences the Asian market return not the regional factor while the volatility process is more influenced by regional shocks than global shock. Scheicher (2001) studied the regional and global integration of stock market using data from the three major Eastern European Markets (Hungary, Poland and Czech Republic). They reported that the return of these markets is influenced by the regional and global shocks but the volatility of these markets is mainly influenced by the regional shocks. Worthington and Higgs (2004) examined the return and volatility transmission among three developed markets and six emerging markets using the Multivatiate GARCH model and reported that there exist a large and predominantly positive mean and volatility spillover. Beale (2004), made an attempt to investigate the degree of market interdependence across 13 European markets using the Regime Switching Models. The results indicated that regime switches in volatility intensities is both statistically and economically significant. In the context of volatility spillover early works by Base and Karolyi (1994), Koutmos and Booth (1995), Francis and Leachman (1996), Koutmos (1997), Kansas (1998) showed evidence of asymmetry in volatility transmission between major developed stock markets. While, Booth, Martikainen and Tse (1997), have reported that there exists asymmetry in volatility transmission among the four Scandinavian (Danish, Norwegian, Swedish and Finnish) markets.

Design and Methods Used

Since the paper by Bollerslev (1986), there has been extensive research on ARCH/GARCH type models. Several modifications have been proposed by the researchers to account for different features. Researchers then began to apply these models in many different areas. One such area is transmission of volatility across the international markets. To facilitate these studies researches proposed extension of the basic univariate ARCH and GARCH models to multivariate framework. Multivariate VAR-EGARCH model has often been used in studying the volatility transmission across markets. This model is relatively easy to estimate compared to any other Multivariate GARCH models which are computationally taxing and also has elaborated limitations. The multivariate VAR-EGARCH model can be used to capture the asymmetry in volatility generated by the innovations within and across markets. Apart from these, the most important technical advantage of EGARCH specification is that it does not require the non-negativity constraints on the values of GARCH parameters. Having justified the use of multivariate VAR-EGARCH model, the following set of equations explains the model in details:

$$r_{i,t} = \beta_{i,0} + \sum_{j=1}^{N} \beta_{i,j} r_{j,t-1} + \varepsilon_{i,t} \qquad for\ i = 1,2,3,\ldots N \qquad (1)$$

$$\varepsilon_{i,t} \mid \Omega_{t-1} \quad follows \quad student\ t(0, H_t, v); \qquad (2)$$

$$\sigma_{i,t}^2 = \exp\left\{\alpha_{i,0} + \sum_{j=1}^{N} \alpha_{i,j} f_j(Z_{j,t-1}) + \gamma_i \ln(\sigma_{i,t-1}^2)\right\}, \qquad for\ i = 1,2,\ldots N \qquad (3)$$

$$f_j(Z_{j,t-1}) = |Z_{j,t-1}| - E(|Z_{j,t-1}|) + \delta_j Z_{j,t-1}, \qquad for\ j = 1,2,\ldots N \qquad (4)$$

$$E(|Z_{j,t-1}|) = (2/\pi)^{1/2} (\Gamma((v-1)/2)) / \Gamma(v/2) \qquad (5)$$

Here, $r_{i,t}$ ($r_{i,t} =$ $-$) is return for market 'i'. The information set Ω contains all the information up to t-1. In addition, μ , σ and σ are conditional mean, conditional variance and conditional covariance between market 'j' and 'i' respectively. Finally, ε is the innovation (ε = $-$) at time't' and $z_{j,t}$ is the standardized innovation ($z_{j,t} =$). In addition, the set up has a long-term drift coefficients represented by β . Thus, to model US returns, equation (1) can be rewritten as:

$$\begin{aligned} r_{SP,t} = {} & \beta_{SP,0} + \beta_{i,SP} r_{SP,t-1} + \beta_{i,FSE} r_{FSE,t-1} + \beta_{i,FTSE} r_{FTSE,t-1} \\ & + \beta_{i,CAC} r_{CAC,t-1} + \beta_{i,DAX} r_{DAX,t-1} + \beta_{i,NIK} r_{NIK,t-1} + \beta_{i,MIB} r_{MIB,t-1} + \varepsilon_{SP,t} \end{aligned} \qquad (6)$$

In our case, a VAR (1) model has out performed the other models. The conditional variance σ has been expressed by equation (2). Moreover, the persistence of volatility is measured by γ which has to be less than unity for the unconditional variance to be finite $If\ \gamma =$, then the unconditional variance does not exist and the conditional variance follows an integrated process of order one. The asymmetry in conditional variance is explained by equation (3). In order to model the conditional variance for U.S return, equation (3) can be rewritten as:

$$\begin{aligned} \ln \sigma_{SP,t}^2 = {} & \alpha_{SP,0} + \alpha_{i,SP} \left| z_{SP,t-1} \right| + \delta_{SP} z_{SP,t-1} + \gamma_i \ln(\sigma_{SP,t-1}^2) + \alpha_{i,FSE} \ln \varepsilon_{FSE}^2 + \alpha_{i,NIK} \ln \varepsilon_{NIK}^2 \\ & + \alpha_{i,FTSE} \ln \varepsilon_{FTSE}^2 + \alpha_{i,DAX} \ln \varepsilon_{DAX}^2 + \alpha_{i,CAC} \ln \varepsilon_{CAC}^2 + \alpha_{i,MIB} \ln \varepsilon_{MIB}^2 \end{aligned} \qquad (7)$$

The above specification indicates EGARCH (1,1) model for the US returns. In similar fashion, the conditional variance for rest of the six markets can be constructed. It is to be noted here that most recent squared residuals from the conditional mean of the other markets will be introduced as an exogenous variable in the conditional variance equation. In this set up the spillover of volatility can be captured by the coefficients of exogenous variables i.e. squared residuals of remaining six countries.

Under the assumption that $\varepsilon_{i,t}$ follow student *'t'* distribution, the log likelihood function for the multivariate EGARCH model is equation (3) can be expressed as:

$$L(\theta) = \sum_{t=1}^{T} l_t(\theta)$$

where

$$l_t(\theta) = \frac{\Gamma\left[(\eta+\nu)/2\right]}{\left[\Gamma(\nu/2)\pi(\nu-2)^{\eta/2}\right]|H_t|^{-1/2}} \times \left[1+1/(\nu-2)(\varepsilon_t' H_t^{-1}\varepsilon_t)\right]^{-(\eta+\nu)/2} \quad (8)$$

where, η is the number of variables (in our case it is number of countries) and θ is the parameter vector to be estimated. H_t is the conditional matrix of error vector ε_t. The log likelihood function is highly nonlinear in θ and, therefore, numerical maximization techniques are used. In our case, the Berndt et. al. (1974) algorithm is used to maximize $L\ \theta$.

Data Description

We have collected daily stock index values of G-8 countries: Canada, France, Germany, Italy, Japan, Russia, United Kingdom and United States for the period of January 17, 1995 through April 16, 2007. From those index values, we compute the daily returns as follows:

$$r_{it} = ln(P_{i,t}) - ln(P_{i,t-1})$$

where, $P_{i,t}$ is the value of stock index *i* at time *t*. We first present the statistical characteristics of all daily index returns that provide us with some insight about the structures of the data. Table 1 presents those results. It is notable that the mean return is very close to zero indicating that the return process for all markets is quite stable around its mean. Of all the countries, Russian markets have the highest returns (.001%) compared to all other countries. The lowest returns are observed in the Japanese markets (-.0001%). The returns of all other countries are very close to one another. Volatility across the markets is also very close to one another ranging from 0.0108% (USA) to 0.0273% (Russia). Being a newly transformed market economy, it is generally expected that volatility in Russian market would be higher.

It appears that all return series are non-normal. All countries exhibit a significant negative skewness (except Japan). Worthington and Higgs (2004) also find that the Japanese returns show a positive skewness. Kurtosis in all countries exceeds the cut-off value of 3.0 indicating that the return distributions are leptokurtic. Many previous studies including Bekaert and Harvey (1997) and Worthington and Higgs (2004) show that equity returns generally exhibit a leptokurtic distribution. In our sample returns, all index return series fail to pass the Jarque-Bera normality test with zero percent probability. Figure 1 shows the distribution of residuals from the VAR estimates for all countries. It is evident from the graph that the residuals are very widely distributed for all counties with the exception of Russian return series.

Empirical Findings

Table 2 shows the estimation of GARCH(1,1) results. Probabilities for almost all the t-values are less that 0.01% indicating that those are highly significant. Under the conditional heteroskedasticity model, we observe the persistence of volatility which is measured by (β_1+ β_2) being close to one for all stock markets. In order to analyze the inter-relationship of stock markets of G8 countries, we first test the significance of first and second moments by using restricted VAR-EGARCH model. The maximum likelihood estimates of the model are presented in Table 3. The autocorrelation coefficients, θ_i, and $\theta_{i,t-1}$ of all countries except for Japan are significant indicating that there are strong correlations of present returns with the past returns. Also, coefficients $\theta_{i,t-1}$ for all countries except France, United Kingdom and United States are significant. It indicates that past innovations of its own return affects the current return of a country's stock market price.

Table 3 also lists the inter-relationship of each country's return with other countries. Coefficients $\theta_{i1,t-1}$ through $\theta_{i7,t-1}$ represent those relationships. As it can be seen in Table 3, spillovers from the past returns of the United States have a significant effect on the Canadian returns. Similarly, past returns of Russia and the United States significantly affect French returns; past returns of Russia affect Germany, past returns of Japan, Russia and the United States affect Italian returns, past returns of Canada and Russia affects Japanese returns, past returns of Canada, Japan and the United States affect United Kingdom returns, and past returns of Canada and Russia affect the United States returns. Interestingly, no country's return affects the return of Russia.

It is interesting to observe that there is no spillover effect of past returns of France, Italy and United Kingdom on any other country's returns. The most dominant countries in return spillovers are Russia, United States and Canada. Russian returns had significant effects on five countries, such as, France, Germany, Italy, Japan and the United States. This may be due to the fact that during this period of time, Russian financial markets have become a major player in the international financial markets. Russia has opened up its markets to international investments that attracted a large number of foreign investors in both of its financial and capital markets. The US returns have significant effects on four countries, such as, Canada, France, Italy and United Kingdom, whereas Canadian returns affect Japanese, UK and US returns. There is only one significant cross spillover is evident among these eight countries, i.e., between US and Canada. Table 4 summarizes the significant cross spillovers among the sample countries.

Table 5 presents the results of volatility interactions within and among the individual countries. It is interesting to observe that conditional variance of returns of all countries is affected by the its own volatility spillovers as measured by $\alpha_{i,0}$ and by the persistence of volatility as measured by γ_i. Both coefficients $\alpha_{i,0}$ and γ_i are significant for all countries. Significant coefficients for volatility spillover, $\alpha_{i,0}$, is the indication that there is a strong presence of ARCH effects in each of the countries own returns. These coefficients range from -0.2016 for Germany to -0.4102 for Russia. Coefficients for volatility persistence, γ_i, are very close to one for all countries, ranging from 0.9770 for Russia to 0.9886 for Germany. It simply means that volatility from period to period (in this case, from day to day) remains

quite stable for all countries. As it has been observed in the VAR residual graph (Fig. 1), ARCH effect and the volatility persistence in Russian return are the smallest compared to all other countries. The coefficients $\alpha_{i,t-1}$ and δ_i represent absolute and actual relative past residual conditional on past standard deviation respectively. In other words, these two coefficients indicate how residuals of the return series are affected by past volatility. Both of these coefficients are highly significant at <.01% level for all countries. The coefficients α_{i1} through α_{i7} represent effect of the past volatility shocks of one country on the future volatility of another country. From Table 5, we observe that future volatility of Canadian returns is affected by the past volatility shocks of Russian and US returns. Similarly, future volatility of France is affected by past volatility shocks of Russia, UK is affected by Canada and US, Italy is affected by UK, and US is affected by Canada and Russia. The coefficients for these volatility shocks are significant between .01% to 5% level.

It is interesting to observe that future volatilities of Germany, Japan and Russia are not significantly influenced by the volatility shocks of any other countries. In addition, Japanese volatility does not have any significant effect on the volatility of any other countries. On the other hand, Russia seems to be the most dominant country in terms of influencing the volatility of other countries. It affects volatility of three countries, namely, Canada, France and US. The volatility of US affects only two countries, namely, Canada and UK, and volatility of Canada affects two countries, such as, UK and US. The only significant cross volatility is observed between Canadian and US returns.

Conclusions

This paper has attempted to document the volatility transmission in the financial markets of G-8 countries by using the VAR-EGARCH techniques. From the above discussions on the empirical results, it is fairly clear that volatility transmissions are present between the G-8 countries during the period of 1995 to 2007. The financial markets around the world have experienced some ups and downs during this time period. Some of those ups and downs were due to the volatility transmissions from one market to another market. Our analyses clearly indicate that the volatilities of some of the G-8 countries are due to the volatility from other markets. Of the countries whose volatilities are significantly affected by the volatility of other markets are: Canada, France, Italy, UK and USA. Among these five countries, Canada, UK and USA seem to be very highly inter-related. This is also evident from their coefficients of correlations which are: 0.2068 between UK and USA, 0.1073 between USA and Canada, and 0.0944 between UK and Canada. These are the three highest coefficients of correlations of all G-8 countries.

The countries that are very dominant in terms of transmitting volatility are: Russia and the USA. Due to the world-wide presence of the US investors, it is not surprising that the US financial markets overwhelmingly affect other markets throughout the world. In recent years, Russian financial markets have also started playing important role in the global financial transactions due to its shift toward a market economy. Interestingly, Japanese markets do not seem to have any significant effect on other G-8 markets. However, there have been significant volatility transmissions from the financial markets of Canada, Russia and UK to the Japanese markets.

Table 1: Descriptive Statistics for the stock index return from January 17, 1995 through April 16, 2007.

	CAN	FRA	GER	ITA	JAP	RUS	UK	USA
Mean	0.0004	0.0004	0.0003	0.0004	-0.0001	0.0010	0.0003	0.0004
Median	0.0011	0.0006	0.0008	0.0008	-0.0001	0.0016	0.0007	0.0006
Maximum	0.0492	0.0645	0.0860	0.0685	0.1294	0.3163	0.0563	0.0557
Minimum	-0.0854	-0.0566	-0.1050	-0.0828	-0.0713	-0.4480	-0.0503	-0.0711
Std. Dev.	0.0110	0.0125	0.0156	0.0128	0.0162	0.0273	0.0110	0.0108
Skewness	-0.6798	-0.1234	-0.2439	-0.3544	0.1481	-1.4497	-0.1154	-0.1104
Kurtosis	8.0205	5.2483	6.6516	5.8518	5.5942	44.2601	5.0722	6.5436
Jarque-Bera	3395.313	642.0544	1703.332	1083.695	855.5806	214705.9	545.5686	1582.032

Figure 1: Estimation of residuals from VAR estimates.

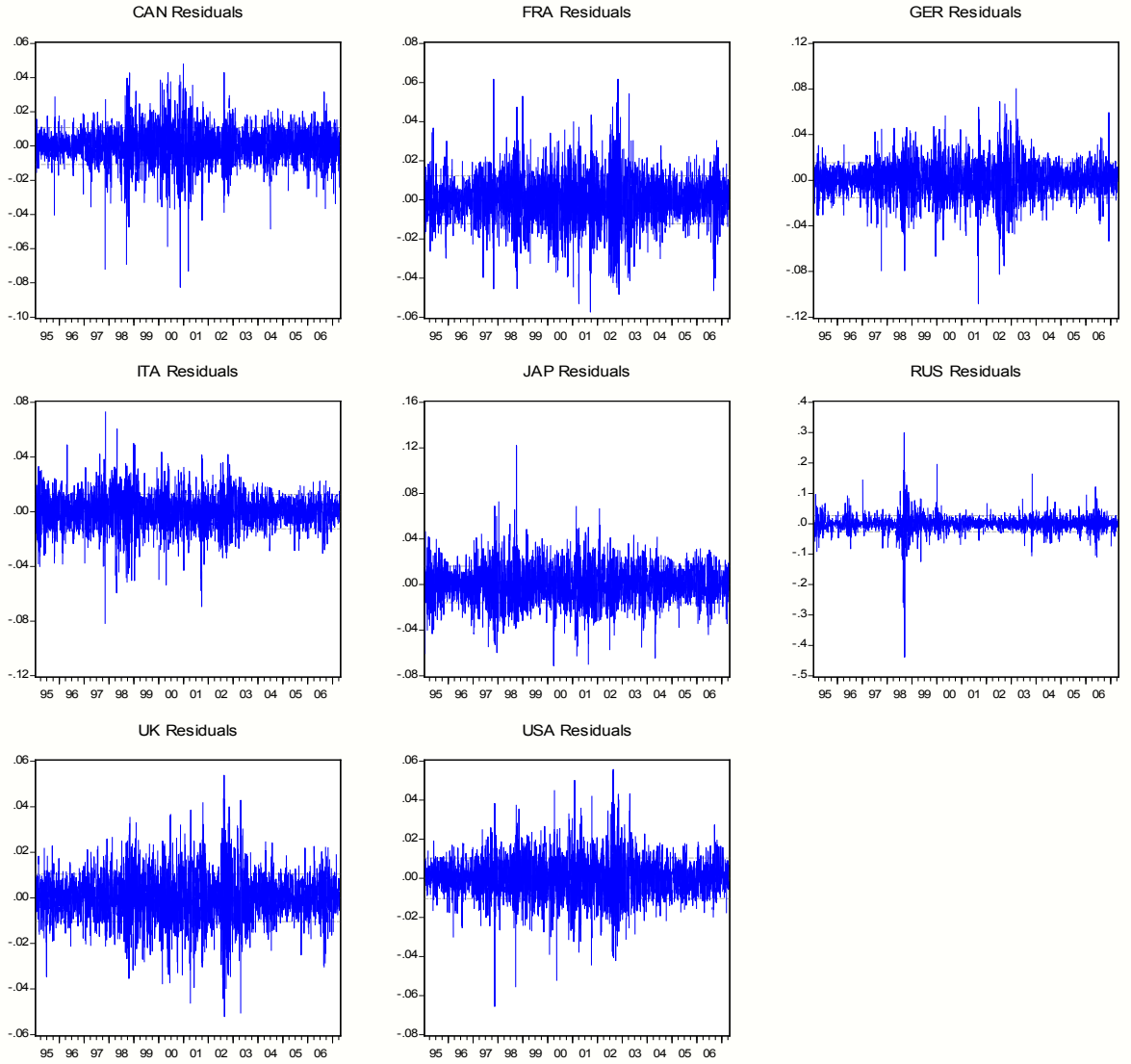
CAN Residuals
FRA Residuals
GER Residuals
ITA Residuals
JAP Residuals
RUS Residuals
UK Residuals
USA Residuals
95 96 97 98 99 00 01 02 03 04 05 06

Table 2: Parameter Estimates for GARCH(1,1) model

Parameters	CAN	FRA	GER	ITA	JAP	RUS	UK	USA
α_0	0.0905 (<.001)	0.0693 (<.001)	0.0007 (0.002)	0.0546 (.004)	0.0214 (.40)	0.1724 (<.001)	0.0582 (<.001)	0.0653 (<.001)
β_0	0.0189 (<.001)	0.0137 (<.001)	0.0001 (<.001)	0.0229 (<.001)	0.0360 (<.001)	0.3158 (<.001)	0.0126 (<.001)	0.0065 (<.001)
β_1	0.1013 (<.001)	0.0695 (<.001)	0.0079 (<.001)	0.0883 (<.001)	0.0701 (<.001)	0.1505 (<.001)	0.0698 (<.001)	0.0677 (<.001)
β_2	0.8885 (<.001)	0.9223 (<.001)	0.0084 (.001)	0.8991 (<.001)	0.9173 (<.001)	0.7962 ((<.001)	0.9195 (<.001)	0.9287 (<.001)
Log Likelihood	-4227.73	-4588.60	8689.58	-4703.68	-5540.08	-6474.23	-4220.21	-4095.67

Values in the parenthesis represent the probabilities of the parameters.

Table 3: Coefficient estimates of conditional mean equations. Coefficients $\beta_{i1,t-1}$ through $\beta_{i7,t-1}$ are used to designate the exogenous countries alphabetically after taking out the dependent variable from the list of countries. For example, when Canada is the dependent variable, $\beta_{i1,t-1}$ represents France and $\beta_{i7,t-1}$ represents the United States; when Russia is the dependent variable, $\beta_{i5,t-1}$ represents Japan and $\beta_{i6,t-1}$ represents UK; and so on.

Parameters	CAN	FRA	GER	ITA	JAP	RUS	UK	USA
$\beta_{i,0}$	0.0006*	0.0004*	0.0007*	0.0005*	-0.0001	0.0010*	0.0004*	0.0004*
$\beta_{ii,t-1}$	0.0754*	-0.0029	-0.1178*	0.0559*	-0.0496*	0.2575*	-0.0520	-0.0229
$\beta_{i1,t-1}$	-0.0006	0.02062	0.0186	0.0016	0.0529*	-0.0035	0.1631*	0.1307*
$\beta_{i2,t-1}$	0.0013	0.0069	0.0021	0.0308	0.0152	-0.0241	-0.0106	-0.0072
$\beta_{i3,t-1}$	0.0156	0.0082	0.0157	0.0264*	0.0217	-0.0032	0.0017	0.0024
$\beta_{i4,t-1}$	-0.0064	-0.0238	0.0022	-0.0135	0.0071	0.0150	-0.0172	0.0155
$\beta_{i5,t-1}$	0.0129	0.0181*	-0.0239*	0.0171*	0.0191*	0.0055	-0.0257*	-0.0009
$\beta_{i6,t-1}$	0.0043	0.0227	-0.0047	0.0044	0.0009	0.0029	0.0075	0.0116*
$\beta_{i7,t-1}$	0.1561*	0.0494*	0.0177	0.0443*	-0.0454	-0.0156	0.1448*	0.0171

Table 4: Cross spillovers of returns from one country to another country. The unidirectional spillovers follow from countries in the columns to the countries in the rows. For example, spillovers from United States returns affect Canadian returns.

	CAN	FRA	GER	ITA	JAP	RUS	UK	USA
CAN					X		X	X
FRA								
GER				X				
ITA								
JAP							X	
RUS		X	X	X	X			X
UK					X			
USA	X	X		X			X	

Table 5: Coefficient estimates of conditional variance equations. Coefficients α_{i1} through α_{i7} are used to designate the exogenous countries alphabetically after taking out the dependent variable from the list of the G8 countries. For example, when Canada is the dependent variable, α_{i1} represents France and α_{i7} represents the United States; when Russia is the dependent variable, α_{i5} represents Japan and α_{i6} represents UK; and so on.

Parameters	CAN	FRA	GER	ITA	JAP	RUS	UK	USA
$\alpha_{i,0}$	-0.2744*	-0.237*	-0.2016*	-0.2685*	-0.2874*	-0.4102*	-0.2224*	-0.2273*
$\alpha_{i,t-1}$	0.1378*	0.1294*	0.1312*	0.1580*	0.1234*	0.2597*	0.1117*	0.1042*
δ_i	-0.0277	-0.0671*	-0.0583*	-0.0293*	-0.0487*	-0.0381*	-0.0290*	-0.0873*
γ_i	0.9818*	0.9848*	0.9886*	0.9838*	0.9770*	0.9711*	0.9854*	0.9843*
α_{i1}	1.0031	-0.7631	0.6117	-1.7122	-2.0233	0.0528	-2.2757*	-2.3160*
α_{i2}	0.4632	0.1941	1.6602	-1.5466	-0.0002	-0.1210	-1.2588	0.6273
α_{i3}	-1.6848	-0.0818	0.4049	-0.4411	-1.6452	1.3292	-0.063	1.3535
α_{i4}	0.5796	0.3052	-0.9482	-0.7404	-0.1802	-0.1613	1.3609	-0.5835
α_{i5}	-0.7146*	-0.6402*	-0.0613	-0.2673	-0.1317	-2.0950	-0.3528	-0.6057
α_{i6}	-0.6698	2.7961	-1.7602	5.1385*	-0.4475	-0.3958	-0.4144	-0.6267*
α_{i7}	-4.9731*	-1.6004	1.4776	-0.11831	0.2552	2.0214	-2.9829*	-1.6709
Adj. R^2	0.0271	0.0090	0.0111	0.01283	0.0046	0.0513	0.0581	0.0201
F-Statistic	4.1758*	1.3532	1.6777*	1.9434*	0.6990	8.0874*	9.2218*	3.0794*
Log Likelihood	9811.97	9324.85	8764.32	9213.50	8377.87	7770.47	9762.15	9898.06
Akaike Criterion	-6.5035	-6.1799	-5.8076	-6.1059	-5.5509	-5.1474	-6.4704	-6.5606
Schwarz Criterion	-6.4616	-6.1380	-5.7657	-6.0640	-5.5090	-5.1055	-6.4285	-6.5187

*significant at 5% or lower

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RATIONALITY OF INTEREST RATE EXPECTATIONS IN LIBOR AND EURO BONDS

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ABSTRACT

Macroeconomic literatures have demonstrated that the assumption of rationality of agents' expectations have strong implications for economic behavior and policy. Thus, forecasting of important economic and financial variables, like exchange rate, interest rate, GDP growth rate have drawn considerable interest among professional and academicians in the recent past. MacDonald (2000) and Engel (1996) summarize the findings of some studies that examine rationality of agents' expectations of exchange rate and interest rate. The debate regarding the rationality of agents' expectations and the informational efficiency of financial markets continues to be an important area in the financial economics literature. The general conclusion of these studies reveals that the rationality depends on the time horizon and the method of investigation considered for the particular study.

The majority of studies on interest rate expectations have used the theory of the term structure of interest rates infer expectations by comparing the yields on two or more assets, in conjunction with a theory of the determination of relative yields (i.e., relative asset prices). The validity of the inference about interest rate expectations is, of course, conditional on the underlying asset pricing hypothesis. In the case of exchange rate expectations, forward premium is used to proxy expectations in that market.

However, forward premium includes risk premium. Thus, survey based expectation provides a better measure of expectation. There has been very little effort made in the literature to exploit the survey-based approach in testing interest rate expectations for properties directly implied by rationality. There are a number of studies that investigate survey based expectations on exchange rates. However, there are very few studies that have investigated the hypothesis of whether interest rate expectations are rational and whether agents use all available information efficiently. This paper attempts to extend the limited work on interest rate expectations.

INVESTIGATION OF TEACHING AND LEARNING INTELLIGENCE TEST ADMINISTRATION AND THE FLYNN EFFECT

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ABSTRACT

The purpose of this study is to determine whether there is a significant difference between how often an examiner administers an intelligence test and examinees obtained test scores. The Flynn Effect indicates that intelligence scores increase over time. The hypothesis was tested that examiner experience may be a viable explanation for this increase in scores. As examiners become familiar with intelligence tests, they are more comfortable administering and scoring the tests. As a result, they more efficiently and effectively administer the test and interact with and motivate examinees. When examiners better engage and encourage examinees, the latter are able to obtain higher scores. Fourteen examiners completed four administrations of an intelligence test with 56 participants. A repeated measures analysis of variance was used to compare the means of the scores. Results indicated a significant difference among overall scores based on when the test was administered.

Keywords: Teaching and Learning, Intelligence Testing, Flynn Effect

Introduction

Since James Flynn systematically documented significant gains in intelligence scores over time, professionals have proposed many reasons for this phenomenon. Although most experts agree with Flynn in that intelligence scores are rising, there is much debate over the reasons for the rise. (Kanaya, Scullin, & Ceci 2003). As individuals continue to be baffled by the Flynn Effect (FE), proposed hypotheses for the causes of this occurrence vary from nutritional changes to increased processing speed (Rogers, 1999). This study investigates a hypothesis proposing that rises intelligence scores are associated with

familiarity of the testing instrument. Are intelligence scores rising as the examiners themselves become more familiar with administering particular standardized tests of intelligence?

Significance of Problem

The cause for this rise in scores must be investigated as more crucial decisions are based on intelligence scores. National policies rely heavily on results obtained from standardized tests of intelligence. Some important decisions based on scores of intelligence include qualification for special education services, social security disability payments, criminal sentencing in regards to the death penalty, and occupational assignments in the military (Kanaya, Scullin, & Ceci 2003).

Although the interest in the Flynn Effect is extensive, explanations are unsupported at this time. Some proposed reasons for the Flynn Effect include environmental influences such as improvements in nutrition, as well as changes in educational systems and technology (Nettelbeck & Wilson, 2002). If it is assumed that the phenomenon of increasing intelligence is due to changes in the environment, then the validity of intelligence testing is in question. If a test designed to measure innate cognitive abilities is influence by environment, then it must be measuring other abilities (Nettelbeck & Wilson, 2002). If more experienced examiners are obtaining higher scores, this will greatly influence eligibility for special education services within the schools. An examinee evaluated by a more experienced psychologist would be more likely to qualify for a gifted program and may be more likely to demonstrate a significant discrepancy between intelligence and achievement. If this is true, standard error of measure may need to be adjusted based on the experience of the examiner.

Massive IQ gains question intelligence testing and the theoretical basis of *g* or "general ability". Similar *g* scores should represent similar mental capabilities. The increased scores are so large that most scholars believe that the Flynn Effect does not reflect true intelligence gains. Therefore, intelligence tests may be measuring other capabilities. Until there is consensus among professionals in regards to the causes of the Flynn Effect, many believe that any decisions based on intelligence scores should be held in question (Neisser, 1998).

Purpose of Study

The Flynn Effect may not reflect true rises in intelligence. If it is found that increased examiner experience is a cause of increasing intelligence scores, it will prove that intelligence tests are measuring factors other than g or "general ability". Changes in training may need to be implemented. Scoring and testing manuals may need to be altered.

Hypothesis

The reliability of widely used standardized tests of intelligence has been extensively researched and found to be more than acceptable. For example, the Stanford-Binet Intelligence Scales-Fifth Edition (SB-5) composite scores have reliabilities ranging from .91 to .98 (Roid, 2003). As a test's reliability coefficients increase, the test will have smaller measurement errors. However, unless the reliability

coefficient is 1.0, there will always be some expected error which can represent differences in obtained intelligence scores (Wechsler, 2004). As an individual becomes more familiar with the test, he or she may make fewer errors and may move through the test with greater ease. If the test is administered more efficiently, then the examinee may maintain focus and be better engaged. If attention and overall rapport is increased then optimal performance will be represented in the scores. Therefore, it is hypothesized that as an examiner becomes more familiar with individual intelligence tests, the examinee will obtain slightly higher scores. The examiner's increased proficiency, efficiency and fluidity will lead to higher scores.

The Flynn Effect

It is no wonder that when Flynn introduced his research supporting a substantial rise in intelligence scores, debates were reignited among individuals with invested interest in obtained intelligence scores. Intelligence scores in theory are created to obtain *g*, which is a "single underlying ability". *G* is often said to be predominately hereditary and reflects an individual's ability to successfully function in society. Flynn's research is important in better understanding *g*. This increase in scores in time has caused many to question the genetic component of *g* (Neisser, 1998).

Herrenstein and Murray document the trend that people with lower *g* have more children (1994). If this is true, then *g* should be going down over time. Since intelligence scores are rising, the question becomes is *g* really increasing over time or do intelligence tests reflect measures other than *g?* (Neisser, 1998)

Many that question the idea of *g* or true intelligence believe that increases in *g* reflect an emphasis on crystallized or acquired knowledge (Neisser, 1998). The most commonly used tests of intelligence measure both fluid intelligence and crystallized intelligence. Tests that combine these areas of intelligence such as the Wechsler Intelligence Scales and the Stanford-Binet show gains of 14.3 points over 45 years (Flynn 1984, 1987). The gains are not as great with the combined tests when compared to the Raven's Progressive Matricies. Since the Raven's is a nonverbal reasoning test and said to be a truer measure of *g*, the theory that increased crystallized knowledge is the sole reason for the Flynn Effect can be discounted.

Much of the debate around the Flynn Effect questions whether the results reflect a true rise in intelligence or some other ability captured by the testing process in general. For example, are individuals learning better test taking strategies over time, or as the testers themselves become more familiar with the test are they capturing higher scores (Neisser, 1998).

Another debate associated with the Flynn Effect goes back to the nature versus nurture question which has existed for years. A few extreme "hereditarians" believe that cognitive abilities or intelligence scores are entirely innate. However, most hypothesized that human abilities represent an interaction between environmental and genetic influences. The Flynn Effect provides tangible evidence to support theories that suggest intelligence is influence by external factors (Neisser, 1998).

The heritability of intelligence is said to be between .4 and .8, with 1.0 being entirely hereditary. This range shows that the exact relationship between environment and intelligence varies. If this variation becomes better understood and specific environmental factors that improve intelligence scores are identified, there will be many positive implications for society. As the debate over nature versus nurture arises, Flynn's research may support the idea that the gap between intelligence scores of Black and White children may not reflect true differences in genetic cognitive abilities (Neisser, 1998).

The Impact of the Flynn Effect

Flynn's documentation of rising IQ scores provides evidence that intelligence tests become obsolete over time. In order to account for increasing scores, intelligence tests have to be remormed. As tests are renormed in order to account for the Flynn Effect, individuals score lower on the new tests. Kanaya, Scullin, & Ceci document that students in the mentally retarded (MR) or borderline MR range lost an average of 5.6 points on renormed tests. This loss causes individuals to be more likely to be classified as MR as new tests are introduced. This greater loss in points suggests that the Flynn Effect may have a more profound effect on the lower portion of the bell curve.

As the IQ tests get older, fewer students will be found eligible for MR services. Eligibility for MR programs relies heavily on the year that the individual was tested in comparison the year the test was normed. Considering the Flynn Effect, many believe that strict guidelines for intelligence scores in regards to MR eligibility are not justified (Kanaya, Scullin, & Ceci 2003).

Proposed Reasons for the Flynn Effect

Some proposed reasons for the Flynn Effect include influences of technology, increasing environmental complexity, and improvements in health and nutrition. Ted Nettelbeck and Carlene Wilson even studied the possibility that increased processing speed may be contributing to the rise in intelligence scores. They hypothesize that society's increased attention to speed may be teaching quicker problem solving capabilities (2002).

Those who consider the Flynn Effect to be in part due to technological advances believe that environmental stimuli in industrialized nations can cause gains in intelligence. The ability to use computers and other technical devices is essential to functioning in today's society. However, many question whether these enhanced abilities are related to intelligence or learning. Flynn believes that trends such as increasing computer skills are representative of enhanced achievement not intelligence (Flynn, 1998).

Patricia Greenfield believes that intelligence is constantly evolving and its definition will continue to change along with cultural influences. She believes that people are getting smarter, but in different ways over time. More specifically, she states that computer games and television are increasing individuals' ability to use visual stimuli to make logical predictions. As society moves towards visual communication, visual-spatial cognitive gains will be reflected in intelligence tests. She even argues that

nonverbal tests are more culturally influenced than verbal tests. Verbal tests have the ability to be translated where nonverbal tests are dependent on previous exposure to visual stimuli (Greenfield, 1998).

Cami Schooler argues that the Flynn Effect could very much be associated with today's environmental complexity. The article states studies have proven training and practice in cognitive strategies can impact one's overall ability to think and reason. Many continue to argue that exposure to real and hypothetical problems through common daily routines can increase the ability to form concepts, depending on the complexity of the exposure. The argument is presented that an individual's cognitive abilities can be influenced by their social and cultural group by stating that the Flynn Effect reflects changes remarkably similar to socioeconomic changes occurring simultaneously (Schooler, 1998).

Most believe that the complexity of the Flynn Effect cannot be attributed to one reason. Wendy Williams refers to a "tapestry of forces exerting upward and downward pressure on test scores" in her article *Are we raising smarter children today? School-and home related influences on IQ*. One of her upward forces is increased nutritional education regarding children. As mothers were educated in nutrition and good-health habits, their children were more likely to attend and be more successful in school. Therefore, she believes that this knowledge can increase IQ scores in children. Pre-natal nutritional changes have also been documented to increase cognitive abilities. Animal studies show that early malnutrition leads to changes in behavior and cognitive ability. Conversely, data gained from years during famine do not show decreased intelligence scores. However, a study examining the role of parasitic infections showed increased test performance among infected children after receiving medication (Williams, 1998).

Parenting style and family size have also been identified as potential causes of the Flynn Effect. Estrada, Arsenio, Hess, and Holloway (1987) found that as parents help children develop confidence by helping them solve problems, they could be increasing overall cognitive abilities. However, it has been argued that parents with higher IQs will implement better parenting techniques which could truly reflect a genetic rather than environmental component to intelligence (Williams, 1998).

Some suggest that the Flynn Effect may be slowing over time and attribute the greater increase during the first half of the century to social and educational growth during that period. The reduction of the Flynn Effect has also been theoretically attributed to unfamiliarity with paper and pencil tests as computers become more central in education (Teasdale & Owen, 2005). The above state reasons for increasing intelligence scores are all logical and supported with data. However, for every supported hypothesis there is an opposing supported argument. The Flynn Effect continues to baffle professionals, and a cohort that cannot even agree on a common definition of intelligence continues to argue over nature versus nurture and the true cause of increasing IQ scores.

Method

Participants

Participant selection was on a volunteer basis. Criteria for participants required that participants should not have had a psychoeducational evaluation within the past year, should not be receiving services in exceptional education, and should not be experiencing difficulties which may lead to a psychoeducational evaluation in the future. Examiners were second year School Psychology graduate students.

The participants used in this study consist of children and adolescents ranging in age from 6 years 0 months to 16 years 10 months. The sample included 5 six year olds, 5 seven year olds, 5 eight year olds, 4 nine year olds, 5 ten year olds, 7 eleven year olds, 4 twelve year olds, 5 thirteen year olds, 3 fourteen year olds, 4 fifteen year olds, and 9 sixteen year olds. Intelligence scores from these 56 students were derived by administering the core subtests of the WISC-IV by 14 examiners.

Instrument

The instrument used in this study was the Wechsler Intelligence Scale for Children-IV (WISC-IV). The WISC-IV is an individually administered intelligence test designed for children ages 6 years 0 months through 16 years 11 months. The WISC-IV provides a general intellectual composite or full scale IQ (FSIQ) which is derived equally from four composites representing specific cognitive domains. The four composite scores are: the Verbal Comprehension Index (VCI), the Perceptual Reasoning Index (PRI), the Working Memory Index (WMI), and the Processing Speed Index (PSI). The VCI measures verbal concept formation, reasoning and crystallized intelligence, or knowledge gained from interaction with one's environment. The PRI measures perceptual and fluid reasoning, spatial processing and visual-motor integration. The WMI measures working memory, attention, and concentration. The PSI measures one's ability to quickly and accurately sequence or discriminate visual information. For this study the ten core subtests of the WISC-IV were administered as follows: Similarities, Vocabulary, and Comprehension comprised the VCI; Block Design, Picture Concepts, and Matrix Reasoning comprised the PRI; Digit Span and Letter-Number Sequencing comprised the WMI; and Coding and Symbol Search comprised the PSI (Wechsler, 2003).

The psychometric properties of the WISC-IV allow practitioners to be confident in obtained scores. The reliability coefficient for the full scale composite ranges from .96 to .97 depending on age. This measure represents the "accuracy, consistency, and stability of test scores across situations". As the abilities assessed become narrower in relation to overall intelligence, it is common for reliability coefficients to decrease. For example, the reliability coefficient is smaller for the composite scales which make up the full scale IQ: .88 for PSI, .92 for PRI, .92 for WMI, and to .94 for VCI. The reliability of the subtests have the lowest reliability ranging from .79 (Symbol Search) to .90 (Letter-Number Sequencing) (Wechsler, 2003).

The validity of test refers to "the degree to which evidence supports the interpretation of test scores for their intended purpose". Validity is considered to be the most important component to consider when discussing psychometric properties of intellectual assessments. As mentioned previously some believe

that the Flynn Effect questions the validity of intellectual tests. The WISC-IV's validity is measured in relation to content and construct validity.

Evidence of construct validity on the WISC-IV was demonstrated via factor-analysis and mean comparisons of matched samples of examinees. Evidence of convergent and discriminate validity was tested using correlation studies between various other assessments. The correlation coefficients are as follows: WISC-III = .72-.89, WAIS-III, and WIAT-II = .73-.89.

Procedures

During the fall semester of the second year of Graduate school, School Psychology students completed four administrations of the WISC-IV. All students had no prior experience administering the WISC-IV. Prior to administering the instrument the students were comprehensively trained in standardization, administration, and scoring of the WISC-IV. Following five three hour training sessions, a practice administration with other students in the class was conducted.

Students were then required to find their own volunteers for testing. Parent permission was mandatory before testing and a copy of signed consent was presented with protocols. The subjects were administered the ten core subtests of the WISC-IV. Protocols were presented to the professor and scoring corrections were made. Feedback in relation to scoring and administration was thorough and students were required to update mistakes prior to the following administration of the instrument.

Design

The design of this study is causal comparative. Subjects were randomly assigned via convenience sampling. The students' scores are compared with respect to the quantitative measure of composite scores of the WISC-IV.

A one-way repeated measures analysis of variance (ANOVA) was used to compare the means of composite scores on the four administrations of the WISC-IV. The session number is considered the independent variable. All five composite scores (FSIQ, VCI, PRI, WMI, and PSI) were analyzed in relation to test administration number.

Results

Four consecutive administrations of the WISC-IV were given to 56 students by 14 examiners between the beginning of October, 2005 through the end of November, 2005. The scores were categorized into four groups based on administration number (1-4). The mean of the five composite scores of the WISC-IV were compared based on administration number. Data collection resulted in 56 usable scores with each administration containing 14 samples.

A one way repeated measures ANOVA comparing mean scores of the FSIQ from the four administrations was computed. A significant difference was found among the administrations ($F(3,39) = 4.00$, $p < .05$).

Results are as follows: Session 1 (*m*=103.71, *sd*=13.23), Session 2 (*m*=101.57, *sd*=12.00), Session 3 (*m*=112.64, *sd*=8.93), Session 4 (*m*=112.00, *sd*=13.27).

The effect size was calculated using Cohen's d comparing the means of session 1 with session 4 since we want to see if there is a substantial difference in scores after repeated practice. The effect size is .626 which represents a medium effect of test sophistication on the mean of obtained FSIQ scores.

The mean scores of the PSI were compared based on administration number using a one way repeated measures ANOVA (Table B2). A significant difference was found among the administrations ($F(3,39) = 2.89$, $p < .05$). Results are as follows: Session 1 (*m*=98.92, *sd*=12.71), Session 2 (*m*=92.5, *sd*=12.47), Session 3 (*m*=106.94, *sd*=14.00), Session 4 (*m*=102.21, *sd*=15.34).

The effect size of the PSI means was calculated using Cohen's d. The effect size was found to be .23 which represents a small effect of test sophistication on the mean of obtained PSI scores.

The mean scores of the PRI were compared based on administration number using a one way repeated measures ANOVA. No significant difference was found ($F(3,39) = 2.57$, $p > .05$). The scores did not differ significantly based on administration number.

The mean scores of the VCI were compared based on administration number using a one way repeated measures ANOVA. No significant difference was found ($F(3,39) = 2.57$, $p > .05$). The scores did not differ significantly based on administration number. The mean scores of the WMI were compared based on administration number using a one way ANOVA. No significant difference was found ($F(3,39) = 1.83$, $p > .05$). The scores did not differ significantly based on administration number.

Discussion

The results of this study support the hypothesis that there may be a relationship between examiner sophistication and increasing intelligence scores. There was a statistical significant difference between the FSIQ means based on administration number. ($F(3,39) = 4.00$, $p < .05$) with the means as follows: session 1 103.71, session 2 101.57, session 3 112.64, session 4 112.00. These results may imply that after repeated administrations of an instrument, the examiner may become more comfortable with the test and obtained intelligence scores are higher as a result.

Limitations

The study is limited by the small sample size. In addition, a counter balanced design was not utilized. However, the pilot study is a good indicator that the hypothesis may be valid. If the final study does show statistical significance, the administration of intelligence testing may be held in question. The study may support additional training and/or updated administration manuals.

If the final study shows a significant difference in scores based on tester sophistication, this will have extensive implications in regards to the Flynn Effect, training, and eligibility for educational programs.

As discussed earlier, causes for the Flynn Effect have been debated, but no one theory has been statistically supported. By attributing the Flynn Effect to tester sophistication, a major flaw in intelligence testing would be revealed.

Many would stop speculating as to why the population is becoming more intelligent over time. Energy would be better spent in updated manuals and training of test administrators. A future study may wish to analyze obtained scores based on previous training instead of actual experience. Training programs may need to be standardized and a certain number of practice administrations may be required for certification.

Decisions based on intelligence scores may need to take the evaluator's experience into consideration. A formula similar to Flynn's calculation of actual IQ may need to be created and factored into placement decisions. Further research may be able to get an actual IQ based on the number of administrations the examiner experience with that particular intelligence measure.

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ENGAGING IN CONTINUOUS IMPROVEMENT IN AN UNDERGRADUATE ACCOUNTING PROGRAM USING AN INTERNALLY DEVELOPED CUMULATIVE EXIT EXAM

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ABSTRACT

This paper describes the development, implementation and practice of the Rowan University Rohrer College of Business Accounting Program's exit exam. The Accounting program has effectively developed and utilized an in-house exit exam to test the cumulative knowledge of accounting majors as they prepare to graduate from the program. The exam questions are mapped to the learning goals of the program, which correspond to the mission of the program and AACSB standards for assurance of learning. Results have been accumulated over a ten-year time horizon, and have been meaningfully analyzed to provide the basis for continuous improvement in the pedagogy and curriculum of the accounting program. Additionally, the exam itself is continuously reviewed for potential improvements in content and delivery.

Keywords: assessment, assurance of learning, accounting exit exam, continuous improvement processes, undergraduate accounting program

Introduction

Systematically implementing and maintaining outcomes assessment and continuous improvement processes in post-secondary academic programs is a challenging task. Since the mid-1980s, public policy and accreditation body demands for assessing the effectiveness of higher education have grown steadily. Regional and specialized accrediting organizations have moved from examining solely the quality and quantity of academic inputs, to demanding evidence of both processes to assess and improve the learning experience, and proof of the quality of student learning.

In the area of business disciplines, the Association to Advance Collegiate Schools of Business – International (AACSB) and the American Accounting Association (AAA) are seen by educational institutions and experts in assessment as leaders in the study of outcomes assessment models (Apostolou, 1999). AACSB requires each business school to articulate a mission suited to its environment and stakeholders, and to create continuous improvement processes to ensure its attainment. The continuous improvement processes should be linked to AACSB assurance of learning standards, which dictate that program learning goals are derived from and consistent with the school's mission (AACSB, 2003). The assurance of learning standards of AACSB are reshaping how business schools specify learning goals and document the accomplishment of the specified learning goals (Young & Murphy, 2003).

Since the mid 1990s, the Accounting major within the Rowan University Rohrer College of Business (RCOB) has been engaged in the piloting and implementation of an internally developed cumulative exit exam for graduating undergraduate seniors. This exam is one of several outcomes assessment measures used by the RCOB and consolidated into what is known as the Annual Program Review process for each major within the RCOB. In addition to the internally developed exit exam, the Annual Program Review has used other measures of program effectiveness, including the Educational Testing Service Major Field Exam in Business, CPA Exam results, student satisfaction surveys, graduate surveys, employer surveys, and employment and salary statistics of graduates. This comprehensive assessment process, developed and adopted by the RCOB, documents academic program effectiveness, gauges specific learning outcomes, and facilitates continuous improvement.

History

Recent advances in program review, outcomes assessment, and continuous improvement can be traced to a combination of public mandates and institutional experiments, and the changing environment of regional and specialty accreditation bodies in the late 1970s and early 1980. However, the history of assessment in higher education dates back to the 19th century when administrators became uneasy about the uneven quality of American higher education. Specifically, historians trace the origins of this concern to the introduction of the major academic innovation of electives, which was first introduced at Harvard University in 1869. It was then that Harvard president Charles W. Eliot introduced a program of electives, altering the long-standing tradition of a generally accepted, fixed, liberal arts curriculum (Resnick and Goulden, 1987).

Today, the Commission on Higher Education is the unit of the Middle States Association of Colleges and Schools that accredits degree-granting colleges and universities in the Middle States region. It has a strong position on outcomes assessment and continuous improvement. In its accrediting role, it examines each institution as a whole, rather than specific programs within the institution and part of its mission statement states its role in "*promoting and ensuring quality assurance and improvement in higher education*"(*CHE, 1998*). Rowan University is accredited by this organization.

Colleges of Business and the AACSB

Business education's examination and acceptance of program outcomes assessment has paralleled that of higher education in general. The declining enrollments and widespread criticism about the quality of business education in the 1980s put pressure on colleges of business to re-examine the value and relevance of the business curriculum (Behrman and Levin, 1984; Byrne, 1986).

Within the business disciplines, the accounting faculty, prodded by the accounting profession, spearheaded the discussion on change and reevaluation of curriculum and assessment of student learning. Concerns about the quality of university business education and the ability of graduates to function in their chosen professions were shared by both practioners and academics in the accounting profession (Apostolou, 1999). The critical issue to be resolved was whether graduates of undergraduate accounting and business programs were adequately prepared technically and in the important communication, analytical, and problem solving skills.

In 1989 the Accounting Education Change Commission (AECC) was formed to address issues of business and accounting education. The AECC issued its first statement in 1990 (AECC, 1990). External and internal analysis encouraged a more broadly based educational experience for accounting majors, a greater focus on communication skills, and the development of critical-thinking skills, problem-solving abilities, and a dedication to lifelong learning.

The AECC had as its main focus changing undergraduate accounting education to meet the needs of the accounting profession; however, its activities reached beyond that. Within business education, the Commission's work has been referenced in academic business journals such as *Journal of Applied Business Research* and *Business Communications Quarterly* and broadcast to a broader interdisciplinary group in *Change Magazine* (Sundem, 1999).

As a result of the early work of the AECC, the Teaching and Curriculum Section of the American Accounting Association (AAA) convened a committee to examine the issues of outcomes assessment. The committee's purpose was to provide an overview on the continued developments of outcomes assessment. The committee report, known as the Baker Report, stressed the key role that faculty play in the implementation and continuing development of outcomes assessment in the curriculum that extends beyond course test instruments and grading (Baker et al., 1994).

The AACSB responded to this growing criticism by forming the Accreditation Project Taskforce (TAP). The goal of TAP was to perform a zero-based review of existing accreditation standards and develop new standards with the purpose of strengthening business and accounting programs, while addressing the often-voiced criticism that AACSB standards were resource focused and "overly rigid, and even detrimental to experimentation and innovation" (Bailey and Bentz, 1991, 168). The work of the taskforce resulted in revised standards that were driven by outcomes assessment. They became effective in April, 1991 (AACSB, 2009)

Theories of Assessment

Assessment historically has been approached in three different ways. It can be based on (1) reputation, (2) resources, or (3) outcomes (Astin, 1987). The assessment by reputation approach to institutional assessment collects and disseminates the opinions of an organization's users and peers. It is generally based on national surveys of college and university administrators, employers and alumni. This type of assessment was used almost exclusively prior to the formation of the regional accreditation bodies. It neither addresses the role of the mission and learning goals that a college has established for itself, nor provides feedback on how to promote continuous improvement. Good measures of assessment should give all institutions a rationale and framework in which to improve (Astin, 1987).

Assessment by resource evaluation is consistent with the historical trend in accreditation in the United States from the formation of the regional accreditation organizations until the 1980s. Here, assessment centers on such things as the SAT scores and class rank of entering freshmen, student retention and graduation rate, the size of the institution's endowment, the physical plant, volumes in the library, the magnitude of faculty salaries, and the size of giving and endowment. This approach looks at resources alone and by no means assures excellence in education. Regularly published reports appear in Business Week, Newsweek and other media sources ranking undergraduate and graduate programs using this paradigm. Some studies have shown that remarkable educational outcomes are achieved at very small institutions with very limited resources calling into question the value of assessment by resource (Bowen, 1981).

Outcomes Assessment represents the trend in accreditation evaluation since the late 1980s. Without careful design, outcomes assessment is not too different from resource assessment. Elite private and selected state public institutions are in a position to start with the best and brightest of available students and faculty. Given where they begin it is not surprising that they end with well-educated, successful graduates. Focusing exclusively on outcomes measures such as GRE and GMAT scores, percent of graduates pursuing graduate education, and average salary of graduating seniors creates a cross between the reputation and resource approaches to assessment. To arrive at a meaningful evaluation requires taking assessment beyond the definition of outcomes as described above and looking at it from the perspective of "value added " in the educational process.

When outcomes assessment was first proposed, the "value added" concept was central to its development (Ewell, 1987). There were struggles, however, moving beyond the concept and into implementation of value added in the late 1980s into the 1990s. By the late 1990s it was accepted and has become the revised definition of outcomes assessment (Kimmel 1998). Through outcomes assessment, an institution can identify both its strengths and its weaknesses. Furthermore, from a public policy point of view, one of the major advantages of a "value added" concept is that it is noncompetitive: "When student gains are the focus of assessment, all institutions can achieve academic excellence" (Resnick and Goulden, 1987, 78).

AACSB Standards After 1991

Historically, AACSB used a resource assessment approach to the accreditation of colleges of business. Standards focused on measuring specific sets of inputs -- number of faculty with terminal degrees, student/faculty ratios, percentage of faculty with current research output, faculty load, proportion of faculty with professional certification, and the like.

The standards implemented in 1991 are fundamentally different from the earlier standards. These standards shifted the emphasis from that of resources to one that was mission driven with a strong commitment to continuous improvement. They require the establishment of processes designed to keep the system working independent of accreditation visits. The standards focus on the processes within the college for curriculum planning, evaluation and revision, including an analysis of educational outcomes. Although the AACSB standards did not then speak specifically of outcomes assessment, the emphasis on continuous improvement, clearly speaks to the need for such assessment, performed over time, and incorporated into a feedback system for modifying and improving the curriculum (Kimmel et al., 1998).

Bailey and Bentz (1991), who both served on the TAP project, clearly reaffirm the redefining of outcomes assessment to include the concept of value added.

> *"The mission statement...must support the creation of value for students through the offering of programs of overall high quality....A school must have measures of progress and success against which performance can be evaluated. And finally, the processes and systems needed to create an environment conducive to continuous improvement...should be in place" (Bailey and Bentz, 1991, 172).*

As it has evolved, assessment provides the "feedback loop" for continuous improvement; and outcomes assessment provides the evidence of the creation of value for students. Building on the mission driven and outcomes assessment standards implemented in 1991, AACSB in the late 1990s took on the task of moving to the next level. AACSB took as of April 2003 and modified in January 2005, when it adopted new accreditation standards that incorporated assurance of learning accreditation standards.

At the April 2003 annual meeting of AACSB, the membership voted to approve the revised accreditation standards. Assessment was raised to a higher level with the adoption of the “Assurance of Learning Standards”. The “new” standards differ from the “old” standards with respect to the assessment of student learning and its measurement. The new standards center on the definition of learning goals and expectations for each program and the assurance that graduates of the program achieve these learning expectations**.** Under the new standards, learning goals require stated minimum competency levels and students in the program must meet these levels in order to graduate. The most important reason for assessment is to give students feedback about how they are doing relative to the goals; the second reason is for continuous program improvement; and the third reason is to provide information to external constituencies such as AACSB, employers, and other external stakeholders.

Learning goals are spelled out for each degree program and evidence of student learning to meet the defined goals is required. The learning goals will demonstrate assurance of learning and are consistent with the program's mission. Evidence of student learning requires direct rather than indirect measures. The AACSB defines direct measures as gathering evidence, based on student performance, which demonstrates the learning itself. This differs from indirect measures such as alumni, employer, and student satisfaction and feedback surveys that have been relied on in the past for assessment of programs. The AASCB sees indirect measures as useful but not sufficient by themselves.

Internally Generated Exit Exam

Development Process

The Rowan University Accounting faculty started discussing the challenges of assessing at the specialization or major level in the late 1990s. The discussion centered on identifying the basic competencies and developing an instrument to test our students on these competencies as represented in our curriculum. Faculty asked, "How do we know that students graduate with the knowledge they need to be successful?"

From the perspective of the faculty, the required curricular content for the accounting major formed the knowledge base required for graduates to be successful in their chosen field. Up for debate was how to go about assessing the student learning at the major level. There were many questions and concerns about how to approach the learning outcomes assessment issue, including whether we should use an in-house developed test or an external test; how the results would be interpreted; who would be accountable for the results; and, most importantly, how would the results be used to implement program and curricular improvements. As with other activities in outcomes assessment, the idea to move forward on this innovation came from a small group of faculty who were researching next steps in outcomes assessment. As this group of early adopters or innovators pushed the issue forward, support grew to encompass a significant majority of the faculty. It was an interesting and difficult time leading up to voting on this matter. Overcoming resistance to this innovation was difficult. Many faculty were reluctant to engage in this form of exit testing for a number of reasons. What did it mean if our students did poorly? What was the responsibility of individual faculty in a major if the results were not good? How did student performance impact resources for the major?

Then there was the issue of whether to use standardized tests or develop assessment instruments in-house. Several faculty members favored standardized testing, noting the ability to compare our students' performance to a broadly based norm using an instrument of proven reliability as a major advantage (DeMong et al., 1994, 20). On the other hand, standardized tests can be costly to use and may not measure the goals an institution has set for its graduates and the curriculum offered to meet those goals. "Faculty must decide if the additional validity gained by developing their own instrument is justified in terms of costs, reduced reliability, and the absence of norms" (Herring and Izard, 1992, 4).

Based on information provided by respondents to the Herring and Izard survey, instruments used were almost evenly divided between those developed in-house and those purchased and nationally normed.

Within the accounting program at Rowan, some faculty were concerned about the validity of an internally generated test, some voiced concern that potentially poor results would reflect poorly on the discipline and affect college and university funding for the discipline, and some faculty members were concerned that indifferent or poor results might reflect negatively on them individually. Generally, faculty had no clear understanding for the role that this initiative might play personally in the key professional areas of promotion, tenure, and post-tenure review and were understandably concerned about this innovation.

These debates occupied many faculty meetings throughout the RCOB, and it was not until the 1998-1999 academic year that the RCOB faculty voted to develop internal test instruments by specialization/major. Faculty leaders who were engaged in the drive to implement major/specialization tests made great efforts to frame this innovation as one to promote continuous improvement in curriculum and student learning.

The Accounting and Finance Department had taken a leadership role in this assessment initiative by developing test instruments in both the accounting and finance disciplines that were piloted in spring 1998. In each discipline, faculty agreed to the core competencies within upper level required courses. The goal of administering the accounting major assessment exam was, and continues to be, to provide a basis for continual improvement of the accounting program. The areas covered on the exam focus on the most important topics in the accounting program classes. The prepared questions are linked to those competencies.

Because of problems with the test instrument and test administration, the results in the first year were disappointing. To address the results, faculty in accounting analyzed the test using the test blueprint technique from Ball State University. This technique helped us to match test questions with specific course content and identify areas in which curricular issues needed to be investigated. Additionally, faculty worked on ways to improve the administration of the test and the advising of students concerning the major test.

It is important to note that after the first administration of the test, anxiety over this innovation was greatly lessened among the faculty in accounting and finance. The test results were reviewed by faculty and constructive conversation followed on reinforcing areas in which students had not performed at an acceptable level. Additionally, it was determined that student performance would likely be enhanced by improving the administration of the test. The test had to carry some sort of grading consequence, there had to be assurance that students taking the test had taken all the courses covered on the instrument, and students needed to be advised of the requirement of taking the test in a timely manner.

The accounting exit exam has been administered each academic year since 1998, and the results have been analyzed and reviewed by faculty in the spirit of outcomes assessment and continuous improvement. The analysis of the results by specific content can get to be very personal. As an example, there was a dramatic decline in student scores in 2004 in the material directly related to one specific accounting course. At the time, only two faculty members were teaching all sections of the course. The discussion was difficult concerning the factors that had a bearing on the exam results.

After some venting on the exam's validity, its purpose, and whether students took the exam seriously, a serious discussion followed. A few of the factors considered in the discussion were: was the coverage of the material in all sections of a particular course the same, was there a difference in coverage between sections/instructors, and was there a problem with the wording of the questions? During this particular discussion, it was agreed that the questions needed to be revisited for purpose and clarity, and this became an action item for the faculty for 2005.

The Exam

Since the piloting of the accounting exit exam, the faculty have engaged in the following activities to improve the purpose and effectiveness of the Accounting Major Exam:

- Utilized the test blueprint technique from Ball State University to match test questions with specific course content to better identify areas in which curricular issues needed to be investigated.
- Linked test questions and content to the identified Accounting program learning goals in order to demonstrate through direct measures assurance of learning within the context of the program and college missions.
- Yearly reviewed and revised the exit exam so as to be current and reflect the current curriculum and learning goals of the courses and program.
- Used the analysis of the results of the exit exam for continuous improvement efforts in both curricular and teaching areas such as classroom emphasis, course sequencing, and course content.

Excerpt of Test Blue Print for the Accounting Major Exam

A mapping of test questions to courses and learning goals is used to track results by question, by course, and by learning goal. The table below provides an excerpt of the Test Blue Print for the April 2009 administration of the exam.

The learning goals for the Rowan University Rohrer College of Business Accounting Program can be found in Appendix 1. The goals are numbered to correspond with the numbers shown in the Test Blue Print table above. The learning goals are operationalized in the sense that relevant courses are specified

under each goal. Each goal is also tied to a learning experience area defined by AACSB as desirable for an undergraduate accounting degree program in Accounting Standard 37 (AACSB, 2009). The AACSB learning experience areas are shown in Appendix 2.

Question Number	Topical Area	Related Course	Related Learning Goal(s)
8	Financial statements and related info.	Intermediate Acctg. I	1, 2
9	Conceptual framework	Intermediate Acctg. I	1
20	Stockholders' equity	Intermediate Acctg. II	1
21	Revenue recognition	Intermediate Acctg. II	2, 9
33	Variable costing	Cost Accounting	1, 2
34	Cost-volume-profit analysis	Cost Accounting	2, 4
35	Financial statements	Cost Accounting	1, 9
40	Documentation Tools	Acctg. Info. Systems	4
41	Control Activities	Acctg. Info. Systems	5
42	Databases	Acctg. Info. Systems	4
49	Itemized Deductions	Taxation	3
50	Filing Status	Taxation	3
58	Related Party	Auditing	8
59	Generally accepted accounting principles	Auditing	2
60	Test of a control	Auditing	5
76	SEC filing	Advanced Acctg.	8
77	Translation/remeasurement	Advanced Acctg.	7

Five-Year Summary of Results

The following tables are excerpts from the 2009-2010 Accounting Annual Program Review. They summarize the results over the most recent five years of the Accounting Major Exam at Rowan University. The exam was administered to all graduating accounting majors in Spring 2009 in the Integrative Accounting Seminar course. The results were as follows:

Accounting Major Exam - Overall Assessment Results					
	2009	**2008**	**2007**	**2006**	**2005**
# of students taking the exam	80	79	70	68	34
Pass Rate	77.50%	72.15%	60.06%	61.51%	88.20%
# of students score > 60%	62	57	48	39	30
Number of questions on test	70	70	70	70	60

Results by Subject Area (Percent Correct)					
	2009	**2008**	**2007**	**2006**	**2005**
Advanced Accounting	61	51	48	42	N/A
Accounting Information Systems	71	65	72	64	75
Auditing	79	77	72	74	85
Cost Accounting	62	64	57	64	59
Intermediate Accounting I	70	61	58	67	65
Intermediate Accounting II	61	64	56	62	60
Taxation	61	66	58	58	53

Results by Learning Goal (Abbreviated) (Percent Correct)			
	2009	2008	2007
#1 Learn financial and managerial accounting theories, techniques, and methods.	64	61	56
#2 Understand the importance and application of financial accounting and reporting policies in decision-making.	67	61	57
#3 Acquire knowledge of federal tax laws and procedures as they relate to individuals and business entities.	61	66	64
#4 Integrate computer software applications, and evaluate the design and implementation of information systems.	70	68	65
#5 Appreciate internal control issues.	75	71	80
#7 Develop an understanding of global issues in finance and accounting.	46	27	n/a
#8 Develop an appreciation for ethical and regulatory environment.	90	82	85
#9 Appreciate accountants' role in society to provide and ensure the integrity of financial info.	65	62	56

At 77.5 percent, the Pass Rate (percentage of students achieving a score of greater than or equal to 60 percent on the exam) is markedly improved in 2009 versus prior years (with the exception of 2005). Improvement versus prior years is also noted on most subject areas of the exam, including Advanced Accounting, Accounting Information Systems, Auditing, and Intermediate Accounting I. All subject areas have pass rates in excess of the 60 percent target, and three of the seven meet or exceed a 70 percent pass rate.

This report shows the results of the Accounting Major Exam by learning goal, as well as by subject area. Work completed during the 2008 – 2009 academic year matched the questions on the exam to learning goals, and the by-question analysis collates the results in this way. The pass rates exceed the 60 percent target on all learning goals except #7, which pertains to developing an understanding of global issues in finance and accounting. It should be noted that the current exam has only one question on this topic. An action item for the coming academic year will be to not only develop more questions to test students' knowledge in this area, but to further integrate a better understanding of International Financial Reporting Standards (IFRS) into the curriculum.

Additional detailed analysis of results by question provided further action items for continuous improvement as part of the Annual Program Review Process.

Closing the Loop

The most important and most difficult part of the outcomes assessment process is utilizing the assessment data to effect programmatic, curricular and pedagogical improvements. Over the course of the past ten years, the RCOB Accounting faculty have made numerous changes in response to the data provided by the Accounting Major Test. Some examples of these improvements include the following:

- Reinforce student understanding of the Cash Flow Statement through additional assignments on this material in Intermediate Accounting I.

- Add a second tax course to provide adequate coverage of topics related to individual taxation as well as taxation of business entities.

- Review sequencing and prerequisites for junior and senior level accounting courses to achieve a more balanced course load. Curricular changes were made to provide more flexibility in course selection.

- Put greater emphasis on integrative case analysis as a method of delivery in the senior capstone course, Integrative Accounting Seminar, in order to increase the emphasis on critical thinking and analytical skills.

- Evaluate course content of Advanced Accounting, Integrative Accounting Seminar, and International Financial Management, to ensure adequate and effective coverage of topics related to global issues in business and IFRS.

Conclusions

The paper described the development, implementation and ongoing practice of the Rowan University Rohrer College of Business Accounting Program's exit exam. The Accounting program developed and utilized an in-house exit exam to test the cumulative knowledge of accounting majors as they prepare to graduate from the program. An internally generated exam was chosen over one of the externally developed and nationally normed exam as the faculty felt strongly about being able to link the results to the program' s curriculum and learning goals.

The exam questions are mapped to the learning goals of the program, which correspond to the mission of the program and AACSB standards for assurance of learning. Results have been accumulated over a ten-year time horizon, and have been meaningfully analyzed by the Accounting faculty to provide the basis for continuous improvement in the pedagogy and curriculum of the accounting program. Additionally, the exam itself is continuously reviewed for potential improvements in content and delivery.

APPENDIX 1

Rowan University Rohrer College of Business
Student Learning Goals for Undergraduate Accounting Program

1. Students will learn current financial and managerial accounting theories, techniques, and methods, and develop the skills to prepare and analyze financial statements for business organizations and nonprofit entities. (Consistent with AACSB learning experience area 6)
Exposures: ***Accounting I, Accounting II, Cost Accounting, Intermediate I, Intermediate II, Advanced Accounting, Integrative Accounting Seminar.***

2. Students will understand the importance and application of financial accounting and reporting in business decision-making. (Consistent with AACSB learning experience areas 3 and 6)
Exposures: ***Accounting I, Accounting II, Cost Accounting, Intermediate I, Intermediate II.***

3. Students will acquire knowledge of federal tax laws and procedures as they relate to individuals and business entities with an emphasis on planning, research and preparation. (Consistent with AACSB learning experience area 9)
Exposures: ***Individual Taxation, Taxation of Business Entities.***

4. Students will be able to understand business processes, to integrate computer software applications, and to evaluate the design and implementation of information systems in a business environment. (Consistent with AACSB learning experience area 8)
Exposures: ***Cost Accounting, Accounting Information Systems, Individual Taxation, Taxation of Business Entities.***

5. Students will develop an appreciation of internal control issues within the context of manual and electronic accounting information systems. (Consistent with AACSB learning experience areas 4 and 5.)
Exposures: ***Accounting Information Systems, Auditing, Integrative Accounting Seminar.***

6. Students will develop oral and written communication skills that will allow them to effectively communicate financial results. (Consistent with AACSB Accounting Standard 40.)

Exposures: ***Law for Accountants, Individual Taxation, Taxation of Business Entities, Integrative Accounting Seminar.***

7. Students will develop an understanding of global issues in business, as well as understand the impact of International Financial Reporting Standards. (Consistent with AACSB learning experience area 10)
Exposures: ***Advanced Accounting, International Finance.***

8. Students will develop an appreciation for ethical and regulatory environment for accountants. (Consistent with AACSB learning experience area 2.)
Exposures: ***Accounting I, Accounting II, Legal Environment of Business, Individual Taxation, Taxation of Business Entities, Advanced Accounting, Integrative Accounting Seminar.***

9. Students will develop an appreciation for the roles played by accountants in society providing and ensuring the integrity of financial and other information. (Consistent with AACSB learning experience area 1.)
Exposures: ***Accounting I, Accounting II, Cost Accounting, Intermediate I, Intermediate II, Auditing, Integrative Accounting Seminar.***

10. Students will engage in applied, experiential learning activities. (Consistent with AACSB learning experience area 7.)
Exposures: ***To be determined.***

APPENDIX 2

AACSB Learning Areas as

Referenced in RCOB Undergraduate Accounting Learning Goals

Excerpt from Standard 37:

Normally, the curriculum management process will result in degree programs that include learning experiences in:

1. The roles played by accountants in society providing and ensuring the integrity of financial and other information;
2. The ethical and regulatory environment for accountants;
3. Business processes and analysis;
4. Internal controls and security;
5. Risk assessment and assurance for financial and non-financial reporting;
6. Recording, analysis, and interpretation of historical and prospective financial and non-financial information;
7. Project and engagement management;
8. Design and application of technology to financial and non-financial information management;
9. Tax policy, strategy, and compliance for individuals and enterprises;
10. International accounting issues and practices including roles and responsibilities played by accountants within a global context. (AACSB, 2009, 30-31)

Standard 40:

The undergraduate accounting degree program includes learning objectives outside of the accounting discipline that focus on developing student capacities essential to a broad education. (AACSB, 2009, 32)

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RACE TO CLARIFICATION: ADDRESSING THE NEED TO DEMYSTIFY FORMATIVE AND SUMMATIVE ASSESSMENT

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ABSTRACT

The testing era in United States education brought about by No Child Left Behind is currently being further bolstered by The Race to the Top. While the impact of formative assessment is now a common place heuristic in school systems, a review of the literature exposes two serious complications preceding the expenditure of enormous sums of money and energy for the implementation of assessment systems in schools: 1) There is no agreed upon vocabulary for what formative assessment is. 2) A week body of literature, replete with methodological issues, supporting and explaining how to best use formative assessment in the classroom. The purpose of this paper will be to address the need for a clear lexicon with which to discuss formative assessment and to illustrate the dire need for further research on assessment systems in schools.

Introduction

Recently, more and more administrators and teachers are attempting to create an effective system of assessment practices to improve both student performance and instruction practices. The Race to the Top Fund is one catalyst for the increased interest in effective formative and summative assessment systems. These monies are awarded for the following areas:

- Adopting standards and assessments that prepare students to succeed in college and the workplace and to compete in the global economy;
- Building data systems that measure student growth and success, and inform teachers and principals about how they can improve instruction;
- Recruiting, developing, rewarding, and retaining effective teachers and principals, especially where they are needed most; and
- Turning around lowest-achieving schools.

To qualify for the money, states and school districts must agree to requirements such as the use of student data in the evaluation of teachers and financially rewarding high-performing teachers (United States Department of Education, 2010). The combination of the means of being awarded funds as well as the consequences of receiving Race to the Top money has many states, districts, administrators, and teachers asking, "What is formative assessment, and how can we use it?" The authors have witnessed these future stewards of these monies trying to formulate assessment plans and finding more questions than answers. More specifically, what is formative assessment; how is it different from summative assessment; can a summative assessment also be formative; does the research say that formative assessment is really effective? The purpose of this paper is to answer these questions by providing a clear and user-friendly lexicon with which to discuss formative and summative assessment as well as examining the existing support and limits of research on the impact of formative assessment.

Assessment Lexicon

A major issue that arises when trying to consume the literature and research related to formative and summative assessment, as well as when practitioners attempt to develop and implement assessment plans, is the ambiguity of the relevant terms. For example, if a quiz is graded and used to give students feedback about progress, is it formative or summative?

In order to address this issue, the authors reviewed the existing assessment literature. When reading the literature pertaining to formative assessment and focusing on the issue of solidifying a definition of the term, an interesting and problematic theme arose. Formative assessment and its various manifestations were defined not only by *contents* of the test, but also by the *use* of the assessment. Formative assessment's status as an ethereal construct has further been perpetuated in the literature by the lack of an agreed upon definition. For example, Black and Wiliam (1998) defined formative assessment as "all those activities undertaken by teachers, and/or by their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged" (p. 10). Popham (2006) stated that an assessment is formative to the degree that the information collected from the assessment is used during the assessed instruction period to improve instruction to meet the needs of the students assessed. In 2008, Popham defined formative assessment as a planned process during which the teacher or students use assessment-based evidence to adjust ongoing learning and instruction. Without any inter- or intra-individual consensus as to what the term formative assessment means it is difficult to have a well-formed body of research.

A great deal of assessment literature delineates between formative and summative assessment, yet summative assessment can be used for formative purposes (Bell & Cowie, 2000). We do acknowledge that the purpose for which any assessment is developed and validated is an important aspect of assessment. However, a test that was designed to give formative feedback is only formative if the teacher uses it to provide feedback for the student. If the teacher only uses the formative assessment to provide a grade, is that assessment still formative or is it summative? Although an assessment may be

designed and packaged as a formative or summative assessment, it is the actual methodology, data analysis, and practical use of the results that determine whether the data from an assessment is used formatively or summatively.

To address this issue, the authors propose a new lexicon for discussing assessments and the use of the assessment data. The linchpins of this new lexicon are two simple words-- assessment (the test) and evaluation (the use). By operationalizing assessment as something unique from evaluation, researchers and educational stakeholders alike can speak the same language related to the usage of these assessments and produce more powerful academic outcomes. Separating the nature of an assessment from the use of its results is reminiscent of Scriven's (1967) original presentation of formative evaluation. Scriven (1967) described formative evaluation as the evaluation of an ongoing malleable educational program. It was Bloom (1969) who first transposed the term formative from *evaluation* to *assessment*. However, the authors propose that retaining the concept of evaluation and assessment in the discussion of formative and summative teaching practices is more amenable to both classroom application and academic discourse.

For the authors' purposes, *formative evaluation* was defined as the evaluation of assessment-based evidence to provide feedback to and inform teachers, students, and educational stakeholders about the teaching and learning process. Formative evaluation also informs policy, which then affects future evaluation practices, teachers, and students. The reciprocal relationship is graphically represented by the Key Model for Academic Success (See Figure 1). *Summative evaluation* is the evaluation of assessment based data to measure academic progress at the end of a specified period for the purposes of establishing a students' academic standing relative to some established criterion.

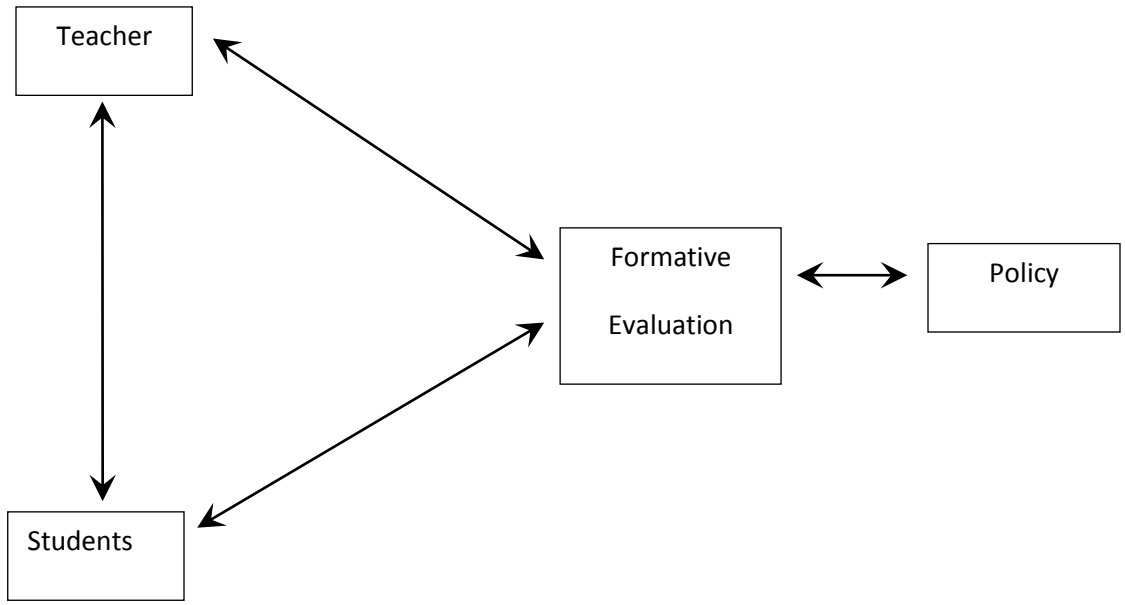

Figure 1. Key Model (Author & Author, 2009)

Having defined what is meant by formative and summative evaluation, it is important to separate the issue of assessment from the issue of formative or summative evaluation. In doing so, we hope to provide a more clearly defined nomenclature to frame the implementation and investigation of formative and summative assessment and evaluation practices.

Assessments are instruments for collecting information, in this case information about students' academic progress. Contrastingly, evaluation is the use of assessment-based data. Summative assessments are those designed to assess what students have learned at the end of a specified unit of material (e.g., multiplication of fractions or fifth grade mathematics). Formative assessments are designed for the purposes of providing feedback to students and teachers with regard to instructional practices and student learning throughout the learning process.

Through the use of this lexicon, formative and summative assessments are simply defined by the design and purpose of the test, the analysis and use of the data becomes a separate issue of evaluation. For example, a summative assessment or final exam designed to assess final knowledge may be summatively and formatively evaluated. Summative evaluation of the final exam may be used to assess learning outcomes at the end of a unit and to assign a grade while formative evaluation of the final exam may be used to provide feedback that informs teachers and students about learning progress and any need for remediation. Evaluation is a separate, but related issue that has to do with the use of assessment-based data (See Figure 2).
By utilizing this nomenclature and model, the authors further propose that the formative evaluation of summative state-wide accountability exams can provide a powerful model for effective data-driven decision making and the development of more relevant and effective classroom level formative assessments. Essentially, formative evaluation through the use of factor analysis on summative assessment outcomes can identify gaps in student understanding as well as instruction. The implications of the provision of this feedback from formative evaluation of summative data will be further discussed in the full paper.

Limited Support

In addition to examining existing definitions and proposing new definitions for formative assessment and evaluation, the authors also reviewed the limited empirical evidence related to the impact of formative assessment on academic achievement. The authors examined Black and Wiliam's (1998) seminal review of formative assessment literature as well as more recent literature related to formative assessment and student achievement.

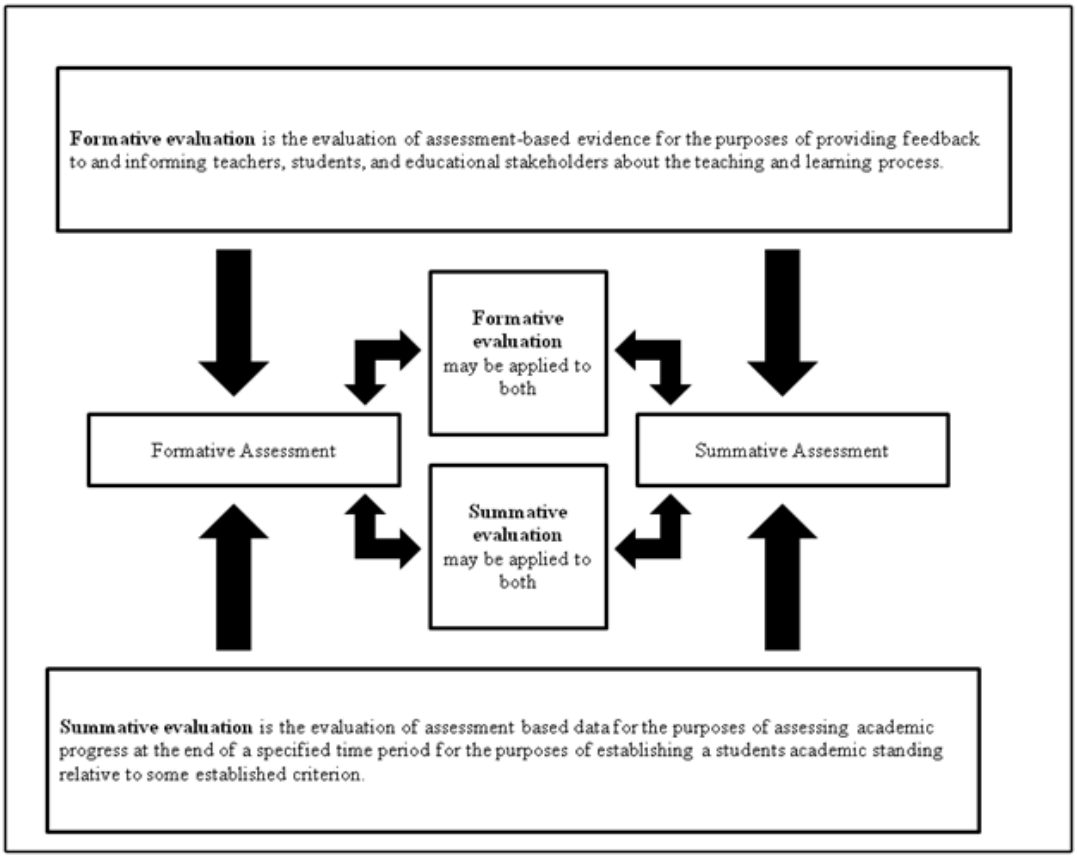

Figure 2. Practical Model of Assessment and Evaluation System (Author & Author, 2009)

Black and Wiliam's (1998) work is frequently cited as evidence that formative assessment does improve student achievement. Black and Wiliam stated that the research they reviewed "shows conclusively that formative assessment does improve learning", and that the gains in student achievement were "amongst the largest ever reported" (p. 61). However, some methodological issues arise with the eight research articles Black and Wiliam (1998) used to support this conclusion. For example, the research that they point to as most powerfully supporting formative assessment due to a large effect size was conducted with a group of special education students.

Thus, this study does not lend well to the broad strokes generalizations made by Black and Wiliam (1998). Other methodological issues involve small sample sizes related to specialized populations or studies done in other countries. These and other issues are explored in addition to limitations of more recent research related to formative assessment. Although the authors agree that there is some support for the impact of formative assessment, the authors suggest that this existing support and the impending outpouring of large sums of funding emphasize the need for further research regarding if, when, and how formative assessment works in lieu of non-substantive claims of formative assessment conclusively and generally improving learning.

Conclusion

The United States Department of Education's Race to the Top initiative is not just a call for proposals; it is an appeal for improving student learning. In a press conference addressing Race to the Top U.S. Secretary of Education Anne Duncan (2010) stated:

Where we have bad testing, where we're over-testing, quite frankly I don't think that helps students get to that next level. What we have said is we need better assessments and we're putting $350 million out in a separate competition to come up with much better assessments, and if those are leading to better results for students, that's we're about (p. 15).

This presentation provides a common language with which to achieve this goal, as well as a critical review of existing literature, exposing a previously unarticulated need for further investigation to better understand assessment in action. By conducting quality research to better understand the "who, what, when, and where" of effective assessment, and creating effective assessment systems in schools, this goal may be achieved. Essentially the purpose of this presentation is to answer the "what" and emphasize the need for a better understanding of the "whom, when, and where".

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A CASE FOR THE SUPPORT OF U.S. MAGNET SCHOOLS OF THE CREATIVE AND PERFORMING ARTS

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ABSTRACT

Traditional middle and secondary schools offer a multidisciplinary approach to the curriculum with an emphasis on college and/or vocational school preparation suggesting a one-size-fits-all approach to education. There are however, over 300 public, magnet schools in the United States. One hundred thirty of those are schools for the performing and creative arts in the United States. These schools offer an alternate focus, pedagogy and modus operandi. These taxpayer-funded schools provide a haven for talented students with exceptional creativity. The millennial focus on educational has been on nontraditional, less bureaucratic charter school programs. As the Obama administration considers the allocation of funding to schools through the American Recovery and Reinvestment Act's Race for the Top Fund, support for the philosophies and practices of magnet programs (schools for the creative and performing arts in particular) should be considered. It is proposed the federal financial priorities encompass a variety of programs both old and new; specifically magnet school programs.

Description

Traditional middle and secondary schools offer a multidisciplinary approach to the curriculum with an emphasis on college and/or vocational school preparation. The prevalence of such schools across the country suggests a one-size-fits-all approach to education. In the United States, schools of the creative and performing arts offer an alternate educational focus, pedagogy and operating system. The specificity of services offered by these schools often necessitates a waiting list for enrollment. Many students are excluded due to limited space. The United States Department of Education refers to them as specialized magnet schools.

Support and funding should be distributed equally among all nontraditional school offerings in the U.S. as they demonstrate evidence of best practices. Both models focus on college or trade school preparation. Magnet schools of the performing arts have a long history of retention and graduation rates. They should therefore be given funding on par with new charter school programs, which are gaining momentum across the country. Providing the same support to both charter and magnet schools would also equally distribute the selection of innovative, nontraditional school offerings across the country.

The specific designation of "magnet school" was coined in the early 1970's in response to the busing mandates towards the racial integration of schools imposed by some states. Specialized programs such as the performing arts schools were easily assimilated into the magnet model in the mid 1970's. (U.S. Department of Education, 2004) There are approximately 3600 magnet schools in operation in the United States.

Magnet schools provide a unique service in that they are distinctive and appealing in their focus. Enrollment is driven by student choice based on interest rather than by selection driven primarily by standardized testing. They draw "from a diverse range of families from throughout the community eager to enroll their children even if it means having them bused to a different and, perhaps, distant neighborhood"(U.S. Department of Education, 2004). Magnet schools offer students the opportunity to "major" in various fields such as mathematics, the science, technology, industrial arts and the creative and performing arts. In order to qualify for the designation, the schools must offer a specialty-that is not available in other area public (non charter) schools. Students who attend them must be residents of the surrounding geographic area who have chosen to attend these schools rather than the multidisciplinary school in their neighborhoods. The selection process (based on portfolio and/or audition) therefore minimizes the segregation that is evident in many urban schools. (Frankenberg E., Siegel-Hawley, 2009) The diversity of the school population reflects the wider geographic area.

The U.S. Department of Education points out that teacher turnover is significantly lower in magnet schools than in traditional schools (U.S. Department of Education, 2004). This advantage may be due to the fact that magnet schools offer teachers the satisfaction of teaching in their areas of specialty. In traditional schools, teachers are responsible for a roster of generic multidisciplinary subjects, which are often outside of their expertise. It is argued therefore, that better teacher retention adds greater stability to the school environment. The presence of same teachers year after year in various disciplines could be viewed as a reflection of commitment to education. It would be a motivating factor and rational for students to remain in school.

A recent study was conducted comparing the standardized test scores with students enrolled in 152 charter schools with students enrolled in 161 magnet schools in the Los Angeles, California area. Raw standardizes test scores in reading and mathematics were compiled and compared. It was found that students attending magnet schools scored higher on tests of reading and mathematics than those attending charter schools. The percentages were particularly significant for African American students. All demographics scored better on the tests than students attending traditional schools. (Blume, H., Landsberg, M., Poindexter, 2010)

Charter schools also operate within the taxpayer funded public schools but they function independently of regulations that mandate the involvement of teacher's unions, and salary guidelines. Teachers in most charter school are not eligible for tenure. The first charter school legislation was passed in Minnesota in 1991. There are approximately 4500 charter schools in operation in the United States currently. [4]

In the American Recovery and Reinvestment Act of 2009's *Race to the Top Fund*, 77 billion dollars was committed to elementary and secondary education. President Obama has specified that charter schools and other innovative, nontraditional programs would be targeted for support and augmentation. This commitment promises extended funding for the start-up and continuation of existing charter schools across the country. The rationale is that these programs offer "promising returns" like higher retention and graduation rates and should be given more support (U.S. Department of Education, 2009).

In the U.S. Department of Education's recent summary of ARRA, magnet schools are mentioned specifically twice (once as a potential recipient of financial incentives and the other as one example of best practices). There are however, twenty-eight citations of charter schools in the document that are either successful or targeted for additional funding. The citation of magnet schools merely acknowledges the funding of one school district which their magnet program received funding under ARRA (U.S. Department of Education, 2009).

Despite the lack of recognition, magnet programs yield performance-based successes that are arguably on par with those of charter schools'. For example, many such programs have higher retention rates than traditional programs. They also boast college attendance as a positive outcome for most students (Frankenberg E., Siegel-Hawley, 2009). It is argued that such programs offer a promising and accessible alternative to traditional education within the parameters of the existing public school format (i.e., union support, and cost effectiveness).

The first high school for the performing arts was established in 1948 in New York City. It gained the designation of "magnet" school roughly twenty years later. Fiorello H. La Guardia High School for the Performing Arts is arguably the most highly recognized school its type due to the feature film *Fame* and subsequent television showcased school life in a fictionalized version of it in the 1980's. When the film and television show ended, the national recognition of these specialty magnet high schools seemed to fade from the collective consciousness of popular culture. It is almost as if the schools ceased to exist when the television went off their air. Nothing could be further from the truth. LaGuardia High School remains however the largest performing arts school with over 2000 students attending (Topaz, 1995).

Students choosing to attend performing arts school (both middle and secondary) must be selected from pools of hundreds of students (or thousands as in the case of LaGuardia High School). They are usually asked to audition or submit portfolios and/or examples of their written work. Once enrolled, they take the standard variety of vocational and college preparatory courses in addition to those devoted to their specific fields of study or major (Topaz, 1995). Courses offered in their majors are block-scheduled so that students are able to devote a longer amounts of class time on their specialties.

Public high schools for the creative and performing arts are an overlooked and undervalued influence on the career paths of thousands of adolescents across the country. There are more than 130 public taxpayer supported middle and secondary magnet schools specializing in the creative, performing and

communication arts in the United States. Although they are required by law to adhere to the criteria of standardized assessments specified by the No Child Left Behind Act of 2001(U. S. Department of Education, 2004), they provide the opportunity for students to pursue interests that lie outside of those emphasized by the traditional college preparatory subject matter.

When presented with an entire student body of people who share the same basic interests, these schools are an oasis of creative and artistic exploration. Retention and graduation rates of these schools remain high. The average high school drop out rate in states that have public high schools for the performing arts is 3.8%. This is lower than the national average. (Frankenberg E., Siegel-Hawley, 2009)

Graduates of such schools often become great advocates of the arts in education. A panel decides whether they are accepted into the school. These taxpayer-funded schools provide a haven for talented student who would have been overlooked or misunderstood in traditional programs.

There are many tools that can remedy the problem of high drop out and retention rates in the United States. Rather than allocating preferential funding at new and innovating programs such as charter schools because they are new and virtually untried it is argued that funding priorities should encompass a variety of solutions. Despite the fact that they still rely on traditional methods of bureaucracy, magnet schools and specifically those for the performing arts should receive funding comparable to that of charter programs. Magnet programs have a long history of providing diverse, meaningful subject specific educational offerings to students across the country. They offer a viable, educational alternative option for nontraditional students.

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WOMEN LEADERS IN HIGHER EDUCATION

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ABSTRACT

Women in senior administrative positions in colleges and universities are an important goal in higher education institutions because they provide diversity as well as role models for female students, faculty, and staff. The current percentage of women serving in presidential positions is 23 percent in the United States (American Council on Education, 2009). Studying successful women will help open the doors for other women who are willing to accept the challenge of higher education leadership. This study explores women's development theory, leadership theories, and self-determination theory to explain successful female leadership. Current literature concerning female leadership indicates that the factors leading to women attaining senior administrative positions in high education institutions are issues such as willingness to accept challenges, self-determination, recognition of leadership abilities by peers and self, and internal motivation. This study uses in-depth interviews with female senior administrators at higher education institutions to capture and report the essence of current successful female leadership.

Keywords: women leaders; leadership; higher education

Introduction

Women administrators in colleges and universities are a minority. Nationally, women fill 23 percent of higher education's presidential positions (American Council on Education, 2009), down from 26 percent just two years ago (American Council on Education, 2007). Because senior administrators serve as influential role models to the entire population of college students, increasing female leadership on college campuses encourages more females to seek leadership positions in all occupations. McLaughlin (Lively, 2000) concluded after a longitudinal 20-year research study that more women taking on presidential titles contributed to the growth of women leadership. Although Standford-Blair and Dickman (2005) were not referring to women in leadership positions with their term "ripple. . . of ever-expanding leadership consequence," (p. 179), the phrase accurately describes the influence of increasing gender diversity. This study gathered data from successful women administrators, and investigated the composition of their success. The data provides information on successful female leadership, while offering mentoring opportunities to the participants. Promoting a diversified group of leaders and role models will benefit women, higher education institutions, students, and society.

Methodology

Using transcendental phenomenology as the research method to study successful female leadership in higher education, the data for this study was gathered from in-depth interviews with six female senior administrators and surveying 39 female presidents, provosts, and vice presidents. Because the phenomenon of female leadership in top administrative levels occurs in only 23 percent of collegiate leadership positions, studying the women who hold those positions on today's campuses provided answers to the research questions proposed in this study. Interviews were the primary method for gathering data. A survey instrument was the secondary method in this mixed methods study. The survey provided additional data by gathering demographic and descriptive information from the entire population of women presidents, vice presidents, and provosts in public higher education institutions in a southern state.

Current women leaders in higher education

The women administrators in this study held varied backgrounds. The educational credentials and career tracks of the participants included 69 percent holding doctorate degrees and 52 percent coming to their current administrative position from faculty ranks. Thirty-three administrators, representing 85 percent of the population surveyed, provided the data for profiling higher education senior administrators. The administrators' ages ranged from 35 to 62. The average age of the participants was 52; 58 percent of the participants were 55 years old or older. Table 1 summarizes the personal demographic data of the participants.

Table 1 Personal Data of Surveyed Population of Female Presidents, Provosts, and Vice Presidents in Colleges and Universities	
Marital status	80% married 9% divorced, not married 6% single, never married 5% divorced and remarried
Number of children	64% have 1-2 children, ranging from 3 to 35 years of age 24% have 3 or more children, ranging from 14 to 43 years of age 12% have no children
Race	91% Caucasian 6% African American 3% American Indian

Themes emerging from the interview and survey data include leadership perspective, leadership performance, motivation, and barriers. In addition to intelligence and integrity, other leadership traits that contribute to the participants' success are strong work ethic, high degree of career satisfaction, good communication skills, and well-developed networking skills. Consistent, accurate communication is vital, especially during difficult situations. Strong communication contributes to consensus-based decision-making, which is an important goal in leadership. Many tangible demonstrations of support to faculty, staff, and students confirmed the administrators' communication skills. Stanford-Blair and Dickman (2005) also found that effective leaders encouraged human growth and achievement. Other researchers have indicated luck as an issue in career advancement (Helgesen, 1990; Kennedy, 2001) and these administrators also credited their success to varying degrees of luck.

Leadership Styles

The collaborative leadership style practiced and the traits exhibited by the women in this study were also found in research by Dubrin (2001) and Frankel (2004). Variations between women's and men's leadership styles often result in one style being preferred over the other under certain circumstances. As some of the participants in this study pointed out, the leadership styles practiced by women are

conducive to higher education institutions. Gardner (1990) indicated that many skills needed in the general workplace are readily available in female leadership because women tend to network and encourage collaboration among groups. Frankel (2004) reports a blending of men's and women's styles in recent years as men adopt strategies commonly used by women. For years, women's leadership was interpreted based on the male model of leadership (Kennedy, 2001), but the women in this study proclaim the necessity of each person developing his or her own style, and not merely adopting someone else's strategies. As one participant stated, "I don't try to be a guy; I just try to be me. When people try to fit a mold, it backfires."

The senior administrators in this study had high expectations of people, saw themselves as role models, and provided mentoring to others. Mentoring was delivered through formal and informal channels, and often resembled the mentorship method that the administrator received during her own career advancement. On-the-job training, a mentoring method commonly employed by the administrators, is a component of the behavioral approach to leadership style. The senior administrators in this study gave many tangible examples of taking advantage of learning opportunities and offering learning experiences to potential leaders. The participants stated that observance and direct mentoring are effective tools for leadership training. The 85 percent response rate for the survey is strong testimony to the communication skills and mentoring drives claimed by the administrators in this study.

The leadership styles practiced by the participants were similar to those found in other studies. Robinson-Hornbuckle (1991) found that women were participatory leaders who sought and valued input when making decisions. Frankel (2004) reported that women leaders took risks, communicated effectively, listened well, demonstrated resilience, demonstrated commitment to a common vision, and had high credibility. Dubrin (2001) found additional traits of female leadership such as their tendency to be more flexible than men and their understanding of the need to individualize. All of the traits and leadership styles identified by the past researchers also applied to the current study.

The current senior administrators felt that higher education administrators should maintain a global view of higher education and an institution-driven agenda. An important aspect of higher education administration is gaining an understanding of how their own institution contributes to the entire network of higher education. The administrators believed that demonstrating support to faculty, staff, and the student body encouraged success of the whole institution. The diversity of higher education must be protected, nurtured, and encouraged through stewardship. As pointed out by the participants, taking advantage of opportunities is one of the most important issues for career advancement, and they felt administration should offer opportunities to faculty and staff to encourage personal and institutional growth. As senior administrators, they saw themselves as role models and accepted role modeling as a responsibility of their administrative position.

Budgeting, strategic planning, and political planning were listed as the main tasks for higher education administrators. The development of networking skills, common to female leadership styles, aids in political planning and facilitates peer and co-administrator relationships.

The participants viewed good leadership as versatile and adaptable to many settings. Since administrators are frequently required to take their leadership into other areas, this is a valuable trait. Several of the administrators pointed out that they had been required to lead another department temporarily at various times during their careers. Their methods and strategies of leadership transferred to other departments and seemed effective. Since the administrators were enthusiastic, life-long learners, these experiences represented a new learning opportunity and quenched their thirst for new knowledge.

Leadership development includes many unpleasant tasks; therefore, support from family, friends, and mentors is helpful. The administrators in this study viewed workplace support as part of the responsibility of their role. They were willing to serve as mentors and supply opportunities conducive to advancing other people's careers. Since the senior administrators reported experiencing frustrations and self-doubt in their own careers, they have a strong understanding of the benefit of support.

The participants attributed successful female leadership to striving to provide quality leadership through their own unique strategies, while minimizing gender in their leadership role. They did not think of themselves as female leaders; they were simply leaders. This thought is similar to Margaret Thatcher's image as reported by Klenke (1996) and other female leaders (Famous firsts from women's colleges, n.d.). The strong female leaders of the past expected no special concessions because they were female; their main objective was leadership.

Leadership Development

Research from the 1970s indicates that women of this decade hesitated to mentor other women because they had such a strong commitment to the male leadership model (Bardwick, 1977; Kanter, 1977; Staines, Travis, & Jatrente, 1974). Recent research indicates that people tend to select same-gender role models (Perrone, Zanardelli, Worthington, & Chartrand, 2002; Rose, 2004). The progress of female leadership since 1970 to the present time is evident when observing the differing views of the women administrators in this study. Several of the administrators in this study mentioned male mentors in their early careers, which would have been during the 1970s and early 1980s. One administrator had female mentors; however, she was in nursing education, which is a female-dominant field. Since the current women administrators experienced career advancement during a time with few female role models, they understand the value of increasing the number of women leaders. The senior administrators accept the role model label willingly and support other female leaders.

Although the women senior administrators downplayed gender as a factor in their leadership role, they acknowledged the socialization of women and its effect on women's advancement. As noted by many of the participants, women often feel inadequate, frustrated, and filled with self-doubt. They have to remind themselves, or be reminded by someone else, of their accomplishments and capabilities. As one administrator stated, "Women spend their whole adulthood convincing themselves of their capability. Women are convinced of their capability in what is reflected back to them from their family or from their colleagues." This concept is parallel to women's development theorists who claim that women tend to evaluate themselves based on other's opinions (Belenky et al., 1986 ; Brown & Gilligan, 1992; Gilligan,1982; Hancock,1989). Men use their success in business to ascertain self-confidence, while women analyze their success based on their families (Dubrin, 2001).

One of the women in this study remarked that women have to "do it bigger and better and work twice as hard to get the same recognition as men." This thought coincides with Bagihole's (1992) study, which concluded that over 75 percent of the women admitted they felt they had to be better than their male counterparts.

Women's development theories also explain the evolution of a typical woman's life. Women typically develop much like males until early adolescence when they tend to obscure their ability and potential. Many women do not find their own voice again until their 40s or later in life. Conflicts and stress seem to aid in the rediscovery of a woman's sense of self. Although the women in this study did not wait until midlife to regain their voice, they acknowledged it as a common occurrence among women. These women understood that they were fortunate to have very satisfying careers, an asset not afforded to everyone. As one participant said, "Not everybody has that in their world of work. It's important to me that I'm not just building my own resume, but I'm part of an enterprise I care deeply for." Since approximately half of the participants in this study had mothers who were homemakers, it is likely the participants witnessed, in their immediate family, the obscurity that women's development theorists discuss.

Motivation Factors

The administrators in this study were internally motivated by job satisfaction, feelings of personal and professional accomplishment, and the enjoyment of broadening knowledge. The findings of motivation corroborate with self-determination theory (Deci & Ryan, 1985; Deci & Ryan, 1999; Deci & Ryan, 2000; Ryan & Deci, 2000), which identifies internal motivation as the most influential "single phenomenon… of human nature" (Ryan & Deci, 2000, p. 70). Deci and Ryan's research indicates a positive relationship between internal motivation and the satisfaction of the needs for autonomy and competence. Internal motivation for the women administrators in this study was strong; over 90 percent of the participants agreed, to some extent, with 11 of the 12 internal motivation factors listed on the survey. The internal motivation factors agreed upon by over 90 percent of the participants were in the areas of job satisfaction, feelings of accomplishment, and personal achievement. The one internal motivation factor

agreed upon to a lesser degree stated "the enjoyment that I feel when I am completely absorbed by my job." Only 79 percent of the participants agreed with that particular statement; 21 percent disagreed to some extent. Sokoloff (1992) also supports the motivation findings of this study when he described "the professions" as careers where people can expect both internal and monetary rewards, and a high level of autonomy and esteem.

The participants also responded to external motivation, although not as strongly as they responded to internal motivation. The external motivation factors were career advancement and proof of success to self and others. Again, self-determination theory supports the findings of the study. Deci and Ryan (2000) concluded that leadership requires high performance of externally motivated tasks. Successful leaders such as the administrators in this study, approach such tasks with enthusiasm. Deci and Ryan further concluded that strong internalization is necessary for leaders, such as higher education administrators, who aspire to motivate other people to high-quality performance. The participants in this study provided tangible evidence that they motivated faculty and staff.

The findings of this study supported a study by Drew and Halstead (2003) that found personal accomplishment as a prominent internal motivation factor for female faculty members. The participants of Drew's and Halstead's study cited financial reasons as external motivation factors. Both of these findings concerning internal and external motivation agreed with the current study. The participants in the current study responded to internal motivation and the external motivation of money was moderately supported.

Barriers

The most prominent barrier perceived by the interview participants was family and child responsibility. This finding from the interview data was supported by 24 of the 33 survey participants agreeing it was a barrier for women. Literature and past research also supports this finding (Bain & Cummings, 2000; Belenky et al., 1986 ; Brown & Gilligan, 1992; Gilligan,1982; Hancock,1989; Helgesen, 1990). One of the participants stated that career advancement is harder for single women than single men, a statement that seems to have merit since 80 percent of the administrators in this study were married. Hence remains the dichotomy of female leadership within higher education: Career advancement is more favorable for married women, yet it is easier for a single woman to accommodate a career without the demands of children and running a household. Single women have the time and energy to devote to a career in higher education, yet higher education institutions do not accept single women leaders as readily as they accept married women.

Approximately half of the participants in this study agreed that gender was a barrier. Barriers for women persist despite legal action formed to promote gender equity. Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and Title II of the Civil Rights Act of 1991, which created the Federal Glass Ceiling Commission (Chamberlain, 1988; United States Glass Ceiling

Commission, 1995) give legal support to eliminate discrimination and encourage gender equity. However, as Kennedy (2001) pointed out, the legislation for equal opportunity does not guarantee equity, it only documents guidelines and suggests options for action.

Source of Success

An encompassing look at this study reveals that the success of these women radiates from their mission to serve their institutions and higher education. The magnitude of their dedication becomes apparent when analyzing their perspectives, actions, and motivations, all aimed at promoting higher education. Their mission has nothing to do with successful female leadership and everything to do with successful colleges and universities. They each keep their role as senior administrator in perspective and attempt to provide exemplary leadership as they oversee their institution. Since female leadership styles are conducive to higher education, the question of the low representation of women remains. Gender alone does not explain the small representation of females in leadership positions, but the other role that typically accompanies women helps explain the deficit. Both the interview data and survey data point to family responsibility, which limits the time and energy spent on career advancement. The successful women in this study admitted the conflict in their own lives and recognized it in others. Women struggle with finding a comfortable balance between work and family. Career advancement requires a substantial investment of time and energy. Blending a commitment to family and career is difficult and represents the most prominent struggle facing career-oriented women. The two issues often conflict dramatically, and seldom co-exist peacefully. Women who enjoy achievement in their careers often have reliable childcare readily available, such as spouse or grandparents. Those who do not have assistance with childcare, sacrifice career advancement, family time, or bypass motherhood completely. As in the case of the women in this study, some chose not to have children, and the ones who had children admitted that they received substantial support from spouses and other family members. The limited resources of time and energy also contribute to the lack of networking and experience. Dividing resources between family responsibilities and careers requires women to sacrifice something in both areas. Enjoying the best of both worlds can be difficult, if not impossible.

Implications and Recommendations

Women's development theory (Belenky et al., 1986 ; Brown & Gilligan, 1992; Gilligan,1982; Hancock,1989) reveals that women tend to blend themselves into other people's identities. For example, a young girl looks to her mother as a role model. Typically, her mother's foremost responsibility was to her family, so the young girl also accepts that as her adulthood mission. Our culture also conditions women to accept the role. The role of homemaker is a historical, honorable, and important part of all cultures around the world. However, when women attempt to build a career, they simply do not have the resources, in this case time and energy, to do both adequately. As the participants in Helgesen's (1990) qualitative study point out, it often "takes women ten years longer than men to realize how good they are" (p. 163) and it is difficult to make strong contributions until that

confidence is fully developed. Many women focus time and energy on family responsibilities during young adulthood, delaying career development until middle age. Thus, family and child responsibility becomes a barrier for women's career advancement. A woman must sacrifice one for another, or make adjustments for one in favor of the other. The ensuing choices are some of the most excruciating decisions in a woman's life. Although labeled a barrier, family and child responsibilities are a self-imposed by the woman herself. The extent of sacrifice she makes to her family or to her career is a personal decision. One of the participants in this study summarized the dilemma in the following statement:

> The family issue can be a struggle for women. I think when you look at that piece of the pie, a woman has to figure that out for herself and figure out the balance. If you don't feel comfortable with your decision, it will be a constant struggle and you won't be good at either one. Each woman has to find the right balance and that's a big element.

Mentoring programs, both formal and informal, help address barriers such as lack of networking, experience, and opportunity. The programs can be offered, but it is up to faculty and staff members to take advantage of the opportunities and capitalize on them. As noted by the participants in this study, many chances offered through normal occurrences on college campuses are overlooked or declined consistently. Encouragement from interested faculty members and administration might alert potential leaders who are not realizing the opportunities being presented.

Although no questions or prompts in the interviews pertained to negative personality traits of females, five of the six interviewees discussed the topic. The negative personality characteristics of women should be kept in perspective. Although the negative personality traits are a barrier to some women, they do not represent a barrier to the entire population of women. Obviously, females who practice negative behaviors will realize adverse effects. Women who strive to maintain professional attitudes, such as the participants in this study, will succeed and have the potential for career advancement. One of the participants said it best when she stated, "Somewhere along the line, women need to learn how to manage their behavior." Those who do will succeed; those who do not will fail.

Since the participants in this study identified taking advantage of the opportunities presented to them as such an important catalyst in career advancement, aspiring leaders should be aware of committee appointments and other tasks they sometimes decline. Service on governance boards and committees provide a good overview of university operations and encourage networking across campuses. Sponsorship of state and national student organizations provide good training in student affairs and increases networking with other campuses. Conferences within discipline areas or work areas expand the network of contacts that is so essential in career advancement. Faculty and staff members may be declining opportunities that could provide valuable training and contacts to them.

Another recommendation is making formal mentorship and leadership training programs available and accessible for faculty and staff members on college campuses. Some leadership programs are already in existence. Strathe and Wilson (2006) conduct the Administrative Fellows program. The program selects eight to ten faculty, staff, or entry-level administrators to meet in monthly seminars and shadow upper level administrators at higher education institutions. Women lead the program and the program serves a population that is 52 percent female. The evaluations of the program are positive and indicate growth in the participants. Programs such as these increase mentorship and networking.

On a more informal scale, mentorship assignments between experienced faculty/staff members and new hires on college campuses can prove valuable. Many times, a mentorship develops naturally between faculty members when a new faculty member is hired. However, institutions can be assured new faculty members are receiving the necessary information and on-the-job training if an experienced faculty member provides a year of informal supervision. The women in this study described similar mentorship during their early careers, but it does not happen in all cases. Informal training such as this is valuable for both the assigned mentor and the new faculty or staff member. The relationship gives the mentor experience and satisfaction in promoting growth in someone, and it gives the new faculty or staff member a much-needed contact during their first year on the job.

The participants in this study cited good listening skills and the development of good instincts as important traits for career advancement. Those two skills are valuable and transferable to any occupation. Another important point made by the participants is that, in many instances, other people noted their leadership abilities before the participants realized their own potential. An obvious suggestion for aspiring leaders is to listen carefully, seize opportunities, be alert when other people point out positive traits, and use verbal and written feedback to correct negative traits that may have an adverse effect on careers.

Implications for future studies within the realm of female leadership are numerous. Since this study involved a variety of issues and involved all areas of successful leadership, the implications are wide spread. Below are some additional questions raised by this study:

- Research indicates that male leadership styles and female leadership styles are blending and becoming similar (Frankel, 2004). Is this trend of congruency between male and female leadership styles continuing?
- The women in this study conducted self-assessments and portrayed themselves as global, communicative leaders. Do faculties, staffs, and students see them the same way they see themselves?
- A longitudinal study observing the changes of internal and external motivation factors over a period of several years as people experience career advancement would indicate how motivation factors change. Do people tend to become internally motivated as they grow older? Does career advancement have a changing impact on motivation?

- This study was limited to one state. Although higher education institutions' missions are similar across the nation, the percentage of women leaders fluctuates. A study similar to this one on a national scale would provide valuable information. What are the traits, leadership styles, perceptions, motivations, and barriers of women administrators in higher education institutions across the United States?

Summary

Historical fluctuations in women's roles reveal the struggles women as an aggregate population have faced since the early 1800s. As women leadership develops and more women succeed, society will embrace and value the contributions they make. As with the women in this study who preferred to be viewed as leaders, not women leaders or female leaders, gender will become less and less a factor as more women accept leadership positions. All professionals receive their education at colleges and universities. The strong women leaders that are presently serving as visible mentors provide role models for today's college students to emulate in their various careers. The current administrators are doing their part in providing examples, it is up to other females to follow and pursue future leadership roles.

Higher education administrators are devoted not only to their institutions, but to higher education. In fact, they are passionate about it. Colleges and universities may feel competition with each other on the sports' playing fields, but these administrators did not compete. Their main objective is improving and contributing to higher education. They understand that if they help their institution perform at the optimal level, higher education benefits. That particular aspect portrays higher education and society as an intricate web. Higher education's strand of influence is woven throughout the web of our society. If higher education improves, all of society benefits because higher education contributes to society as nothing else does. Higher education produces the world's wealth of human capital. Professionals are educated through colleges and universities; therefore, the institutions contribute and affect society in an unparalleled manner.

Higher education administrators have a great responsibility in this web. Their responsibility is to facilitate institutions to provide the best education possible. The web of society embraces higher education's students and utilizes their skills. Within this web, society benefits from having the best leaders, both male and female. Female leaders on college campuses provide the necessary catalyst for motivating other women leaders in all occupations, thus contributing to society and building a strong, resilient web.

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AN EDUCATIONAL EXPLORATION OF THE CRITICAL ISSUES EFFECTING BLACK MALES IN FLORIDA

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ABSTRACT

This study investigates the effects of various practices in kindergarten through twelfth grade education institutions on Black males. Influences and consequences of such measures as special education programs, low ability grouping, and grade retention represent documented evidence of societal disenfranchisement for Blacks in general, but more significantly for Black males. These findings have been generalized nationally since Florida is often referred to as a microcosm of the nation's diverse population. Implications of the study and its results will be addressed.

Introduction

The persistence of a multi-dimensional Black-White achievement gap in the United States has been widely acknowledged as a major social problem, a controversial public policy issue, and a subject that demands the continued attention of academic theorists and researchers working from a variety of disciplinary perspectives. Although Black-White differences in academic attainment and its primary socioeconomic correlates have shown some decline since the era of the Civil Rights Movement, they have remained large (Hanushek & Rivkin, 2008, p.2). The long-term trend data clearly indicate that the pace of progress in closing racial achievement gaps has slowed of late and may have actually undergone a reversal among young males. There is no doubt that an unconscionably large proportion of African

American males is currently suffering a prolonged crisis that is distinguished by the severity of its manifest consequences and the likelihood that it will yield downward socioeconomic mobility within current and future generations. The nature of this opportunity crisis has been captured in the Schott Foundation's recent statement that:

> Over the last 25 years, the social, educational and economic outcomes for Black males have been more systemically devastating than the outcomes for any other racial or ethnic group or gender. Black males have consistently low educational attainment levels, are more chronically unemployed and underemployed, are less healthy and have access to fewer health care resources, die much younger, and are many times more likely to be sent to jail for periods significantly longer than males of other racial/ethnic groups (2008, p.3).

Although these inter-penetrating disparities can be discerned among Black males of all ages, the impact is most acutely apparent among adolescents and young men. Since the mid-1980s several scholarly observers have characterized Black male youth as an "endangered species" that is at inordinately high risk for failure across virtually all life domains (Jordan & Cooper, 2003, p.200).

The Black-White achievement gap is acutely apparent within the societal institution that has traditionally performed the function of equalizing opportunities among ethnic-racial and class groups, the nation's public education system. At present, African American male students display the poorest educational outcomes of all major demographic groups in the United States (Levin, Belfield, Muennig, & Rouse, 2006, p.2). National statistics show that African American males are much less likely to graduate from high school, to attend college and to achieve a post-secondary degree than their White counterparts. They also reveal that Black males under-perform both White students and Black females on standardized tests administered at elementary, middle and high school levels. Throughout their public school careers Black males are heavily over-represented among students assigned to special education, placed within the lowest ability groups, retained for one or more grades, and subjected to exclusionary discipline (Uwah, McMahon & Furlow, 2008, p.296). For many within their ranks the customary pattern of school completion leading to gainful employment has been replaced by school failure preceding or accompanied by incarceration. As several of the attendees at a research conference sponsored by the Civil Rights Project and Northeastern University's Institute on Race and Justice in 2003 remarked, a large percentage of Black male adolescents is now part of or about to enter a "school-to-prison pipeline"(Fenning & Rose, 2007, p.538).

Given the obvious importance of obtaining a high school degree for socioeconomic status, secondary school graduation and dropout rates have been a focal point of investigations into the extent and the causes of the Black-White educational achievement gap. As will be discussed at greater length in this paper, the most commonly used indicators of high school completion that appear within nationwide figures from official sources are highly suspect. Using what is arguably a more valid definition of high

school completion, the Schott Foundation has calculated that during the 2005-2006 school year less than half of all Black males received a regular high school diploma with members of their modal age cohort (2008, p.2). There are marked disparities between and within the nation's fifty states. The Schott Foundation has projected that only one third of the one million Black male students who are currently enrolled in the public school systems of New York, Florida, and Georgia will graduate high school on a timely basis (Schott, 2008, p.2).

School failure has a calculable depressive impact upon the individual lifetime earnings of African American males. But as economists who have investigated this phenomenon have found, low levels of educational attainment among members of this demographic group entail substantial public losses. Levin and his associates have argued educational inequality for Black males leads "to large social costs in the form of lower societal income and economic growth, lower tax revenues, and higher costs of such public services as health, criminal justice, and public assistance" (Schott, 2008, p.2). In their estimation, the lifetime public benefits of an African American male graduating from high school amount to $256,700 per new graduate; if Black males completed high school at the same rate as White males, the net public savings would be roughly $3.98 billion each year (p.2).

The magnitude of the Black-White educational achievement gap, its increasing concentration among males, and evidence of a break from the constructive trends posted between 1970 and the late 1980s has evoked an exceedingly large body of research (Lewis, James, Hancock, & Hill-Jackson, 2008, p.127). This corpus of work has increased dramatically during the past few years. Scholars from the fields of education, sociology, psychology, political science/policy and economics have sought to measure the gap and, even more importantly, to identify its antecedents for the purpose of formulating effective remedial policies and intervention practices. Yet there is no unified model of the Black-White educational achievement gap and/or the processes that contribute to school success/failure among African American males. Instead, the use of competing theories based upon radically different assumptions has generated a huge but unwieldy, and often contradictory, body of findings. The current Black-White school achievement literature embodies studies that have tested hypotheses that collectively encompass a very large number and broad range of study variables. At the same time, scholars who have investigated identical sets of variables using the same data bases or similar study samples have reported diverse results as a consequence of methodological differences. In some instances, they have transformed similar results into findings that are incompatible with those of their fellow researchers due to both methodological and ideological differences.

Like the study at hand, several investigations of the Black-White public school achievement gap have been conducted within the state of Florida while several others have examined the influence of statewide and district policies upon that gap and upon the experience of African American males. This is understandable. More African Americans are enrolled in Florida's public schools than in any other state

(Holzman, 2006, p.24). Despite some modestly encouraging signs in the 2007-2008 school year, Florida's Black-White high school completion gap remains larger than the national average. According to the Schott Foundation, on the basis of Black-White high school completion rates in 2006-2007, Florida ranked 46th among all states (Schott, 2008, p.5). Using more stringent indicators, definitions, and computational methods than those employed by the Florida Department of Education, the Foundation's researchers estimated that in 2006-2007 less than a third of Florida's Black male high school students graduated "on schedule" (Schott, 2008, p.2). There are additional aspects of Florida's case, notably those found in the state's public school performance assessment and accountability regime that are of considerable interest to both policy-makers and scholars. At bottom, Florida's Black male high school crisis exemplifies the nation-wide problem while its relatively poor record highlights the problem's complexity and the constraints of addressing it.

Since the official statistics do not furnish a complete picture of the Black-White school achievement gap, a cursory analysis of the descriptive data relevant to the Black-White public school achievement gap in the United States and in Florida is presented here.

While there is no theoretical consensus about the causes of the Black-White school achievement gap or the plight of the Black male students, the next section of this paper will examine competing theoretical perspectives that have been brought to bear upon the subject. The paper divides these perspectives under three broad headings: (1) structural/systemic, (2) individual/family, and (3) interpersonal interaction/cultural discontinuity.

By organizing the empirical literature on the Black-White school achievement gap under these three rubrics, the researchers do not intend to imply that studies using a common set of variables adhere to a unified explanatory model. To the contrary, the taxonomy is simply meant to bring some degree of order to a field that is characterized by both theoretical fragmentation and a very large number of independent and mediating variables. Owing to the multiplicity of factors found in the empirical literature and the lack of a comprehensive database that contains a large set of co-variates related to racial differences in educational achievement, many scholars have devised ingenious but inherently problematical proxy variables (De Los Santos, Heckman, &Larenas, 2004, p.7). This, in turn, has generated greater fragmentation within the domain of Black-White school achievement research.

Theoretical Perspectives

As Uwah and her colleagues have recently observed, "multiple hypotheses have been suggested to explain the lower performance of African American students generally and African American male students specifically compared to their White counterparts" (2008, p.297). While these hypotheses often build upon the findings of prior empirical studies, at bottom, they are derived from theoretical constructs. The researcher's selection of a particular construct effectively determines the identification of variables for testing and has a powerful influence upon study design. Yet there is no scholarly

consensus concerning the validity of any model that might explain the Black-White school achievement gap or how student gender interacts with race. In fact, the relevant literature indicates intense conflicts among scholars about the structures and processes that contribute to that gap.

Lewis and his associates (2008) have delineated three interrelated but competing "paradigms" that have been used to account for differences in public school outcomes among Black and White students. The "structural-systemic" paradigm stresses the influence of macro-level forces, notably socioeconomic stratification and its correspondence with race. The "cultural deficit" paradigm, as Lewis et al. refer to it, focuses upon norms, attitudes, and behaviors grounded in African American culture that purportedly influence student engagement in educational processes. Lastly, what Lewis et al. designate as the "discontinuity paradigm" highlights apparent conflicts that stem from Black student experiences with and perceptions of public schools as manifestations of White culture and racial bias on the part of public school personnel, and most notably classroom teachers.

In their effort to explain the causes of elevated drop-out rates among African American high school students, Heck and Mahoe (2006) distinguished among four theoretical perspectives: individual (and family) deficits, resistance theory, school structure, and social reproduction (pp.419-422). Individual and family deficits resemble Lee's (2002) "socioeconomic and family conditions" factor set and Lewis et al.'s cultural deficit paradigm. Both resistance theory and social reproduction overlap with Lewis et al.'s "discontinuity paradigm," while Heck and Mahoe's "school structure" perspective is broadly congruent with Lee's "school conditions and practices" factor cluster.

For the purpose of organizing an extraordinarily diverse body of empirical studies on the Black-White school achievement gap, the researchers have formulated a three-category taxonomy of study variables: 1) Structural Systemic Factors, 2) Individual/Family Level Factors, and 3) Cultural Discontinuity Conflict.

The first component is comprised of structural-systemic factors. The controlling assumption is that both between and within school racial disparities mirror the structure of socioeconomic stratification in American society at large. The differences between Black and White student outcomes reflect and perpetuate a capitalist system in which Blacks are generally concentrated in the lower socioeconomic classes, are segregated from Whites by residence in low-income communities and are therefore over-represented within both "high poverty" and "high minority" schools. This category encompasses both individual/household and school/neighborhood socioeconomic status. Poor Black students attend schools with comparatively low resources and this, in turn, accounts for most, if not all, of the Black-White achievement gap. According to a Schott Foundation report structural-systemic variables exert a powerful affect on student learning (Schott, 2008).

Structural/Systemic Factors

The empirical findings on the Black-White school achievement gap leave no doubt that school quality matters, and that "between school" factors explain a large proportion of the racial learning differences. Fletcher and Tienda (2008) used a unique data-set that embodied information about the high school backgrounds and the college performances of Black and White students admitted to four Texas public universities that varied in terms of their selectivity. The study's main hypothesis was that differences in the quality of high schools attended by Black versus White students would contribute to the collegiate achievement gaps. The study's findings strongly supported this proposition. Students from different racial/ethnic groups who attended the same high schools achieved similar levels of college success across all four universities. Moreover, the strongest correlations reported were with first semester GPA and freshman academic probation status. Regardless of their race, students from the same high schools tended to have similar grades in college. These associations diminished over time; the connection between high school attended and sixth semester GPA was much weaker than the relationships with the study's "earlier" dependant factors, suggesting that by the conclusion of their junior year in college, the influence of high school quality had dissipated. Without directly measuring high school quality, then, Fletcher and Tienda's study suggests that school quality is a stronger determinant of learning than racial differences per se.

Although Rouse and Barrow (2006) found that family socioeconomic status (SES)affects such educational outcomes as test scores, grade retention, and high school graduation.(p.99), Sirin (2007) found that family SES is a much more accurate predictor of academic achievement among White students than it is among minority group students (p.441). He noted that investigations of the relationship between school or neighborhood SES and student achievement have reported that these compositional factors, rather than family SES, have the most powerful effect upon academic achievement in minority communities, particularly in African American communities (Sirin, 2007, p.441).

The adoption of a structural/systemic perspective on the Black-White public school achievement gap has disposed some observers toward a pessimistic outlook. As Jordan and Cooper (2003) have remarked: "In light of the intractable nature of concentrated poverty, proliferating urbanization, and racial isolation, many scholars and educators have summarily concluded that little can be done within the context of the existing educational system to significantly improve the conditions for poor students in general and Black male students in particular" (p.199). But some researchers, Rumberger and Palardy (2005), for example, have reported that SES effects can be mitigated through "within school" changes in policies and practices. In fact, their finding suggest that even in low-SES schools that serve students living in poverty, it is possible to measurably enhance student outcomes to the point where they near parity with outcomes found in predominantly White, middle-class schools.

The second component of this review's taxonomy is comprised of individual/family level factors. This cluster corresponds with Heck and Mahoe's (2006) first class of school dropout variables. It also resembles Lee's "socioeconomic and family conditions" category, but it excludes variance in income and focuses instead upon the skills, attitudes, and behaviors of individual students and their immediate family members. In this sense, it is akin to Lewis et al.'s "cultural deficit" paradigm. But Lewis and his

colleagues viewed this perspective as shifting the blame for educational failure to the "the cultures of African American families and students as diseased and deleterious of worth" (p.137). In fact, several scholars have adopted a similar opinion of Black-White school achievement gap studies that take individual or family variables into account (see, for example, Ladson-Billing, 2006, p.4). They most often identify the Coleman Report on educational equality (Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld & York, 1966) as the seminal example of this "cultural deficit" approach. Coleman et al. (1966) found that differences in Black-White school achievement were not the result of variance in educational inputs along racial lines systems, but were instead the results of family factors, such as parental educational attainment, degree of parental engagement in school, differences in parenting practices and so on.

In organizing the empirical research on the role individual/family background variables in the Black-White school achievement gap, the review at hand concentrates upon studies that have investigated influence of these family-based factors. It extends to student attachment to and engagement with school, social capital and social support variables, substance abuse rates, and high school transition processes. Taken collectively, these studies appear to explain at least a portion of the Black-White achievement gap, and do show associations with academic performance among Black students and are fairly powerful predictors of dropout among African American male high school students.

Individual/Family Factors

For students of all backgrounds, family functioning exerts a strong influence upon their levels of academic achievement. Reviewing the literature on the family's role in the school achievement of Black boys and adolescents, Mandara's (2006) study identified four sets of factors that are believed to have an impact upon educational outcomes for Black students. They were (1) parenting styles, (2) the use of physical discipline, (3) racial identity socialization, and (4) parental academic involvement. According to Mandara (2006), "African American boys who have authoritative parents are more psychologically and behaviorally adjusted and have higher academic achievement than those in other types of families. Those in neglectful and permissive homes tended to be more at risk for psychological, behavioral, and academic problems" (p.216). The judicious use of corporal punishment by parents has also been associated with superior school outcomes for Black male students. By the same token, Black male school children whose fathers instill a sense of racial pride in their sons do better in school than Black males whose fathers do not discuss race or who convey oppositional norms to their sons. Parental involvement in school activities also exerts a strong influence upon the academic achievements of Black male public school students. But as Ferguson (2007) reported, Black students are more likely to live in single-parent families, are less likely to receive close supervision by their parents, and are more heavily influenced by the racial attitudes of their age peers than by the racial identity conceptions of their fathers. Ferguson commented that these conditions are prevalent across the SES levels of African American households.

Stearns and Glennie (2006) probed into reasons for drop out in a sample of former North Carolina high school students that varied by race and gender. They initially distinguished between "push out" reasons (disciplinary sanctions or academic under-performance) and "pull out" reasons (employment, family responsibilities and moving). The researchers observed that while every ethnic group had its highest dropout rate in 9th grade and its lowest dropout rate in the 12th grade, this pattern was most pronounced for minority groups members, including Blacks of both genders (pp.30-31). Subjects who dropped out before reaching the age of 16 were more likely than advanced and older students to leave school for disciplinary reasons; older males were more likely to leave school for employment reasons. Black males were more likely to leave school earlier and for disciplinary reasons than any other race/gender group in the study's sample. By contrast, Black females were less likely to be "pushed" out of school for disciplinary reasons than males in any ethnic/racial group. Contrary to their expectations, Stearns and Glennie determined that both African American males and females were also less likely than White males to leave high school for academic reasons (p.46).

Consistent with Sterns and Glennie's research findings, Holcomb-McCoy, (2007) noted that Black students experience inordinate difficulties in making the transition from middle school to high school (p.254). She wrote that African American adolescents appear to encounter greater problems in adjusting to the stricter regimen of high school life than their White peers do. Neild, Stoner-Eby and Furstenberg (2008) used survey and student record data for a cohort of Philadelphia public school students, a large proportion of whom were African-American. They found that ninth-grade academic outcomes within this sample were not simply proxies for student characteristics measured during the pre–high school years and that ninth-grade outcomes added substantially to their ability to predict which students had dropped out school.

The third set of studies covered in this review utilize factors that can be grouped under the rubric of "cultural discontinuity and conflict." They include racial/cultural bias grounded in stereotypes, most notably the perception of White school personnel that Black male students "are hostile, volatile, academically inferior, and emotionally disturbed. (Holcomb-McCoy, 2007, p.255). Many of these works focus upon teacher attitudes toward, perceptions of and behaviors toward Black students in general and, again, male African American adolescents in particular. As Hinojosa (2008) has recently commented, a substantial body of research indicates that: (1) classroom teachers interact less with, and provide less praise to, African American students; (2) Blacks receive less support from teachers; and, (3) teachers have lower expectations for the academic success of Black students compared to their expectations for White students (p.176). Findings in these works are usually based upon the perceptions of African American students rather than direct measures. The research also shows that Black students do not simply fail to embrace conventional school culture values; they view academic achievement and its markers according to normative criteria that differ from those of White students (Blau, 2003; Griffin, 2002; Moller, Strearns, Blau & Land, 2006). This, in turn, influences their school performance.

The "cultural discontinuity" or "disidentification" paradigm highlights interactive processes, and tends to explain the relative poor performance of African American public school students as a result of their responses to perceived racial inequalities within the schools that they attend. This approach is currently prominent within investigations of the Black-White "discipline gap." Adherents of this perspective stress the need for culturally sensitive school policies and teacher practices and for more African American teachers in predominantly Black schools. In fact, the most prominent recommendation appearing in these studies with regard to Black male students is the recruitment of more African American teachers (Jordan & Cooper, 2003, p.206).

The cultural conflict paradigm shares a great deal in common with Ogbu's (1978, 2003), oppositional culture theory of the Black-White educational achievement gap. Ogbu divided minority ethnic groups in the United States into two categories based upon their historical mode of incorporation into American society. In contrast to immigrant (or "voluntary") minorities, caste-like (or "involuntary") minority groups, incorporated into the United States by enslavement or conquest, are under constant pressure to adopt the assumptions and practices of a dominant culture that has participated—and presently participates—in their oppression and exploitation. African Americans constitute the most prominent example of a "caste-like" minority. That status has two major consequences. First, there is the "blaming the victim" phenomenon: a societal-wide propensity to perceive members of an exploited minority group negatively (Brown & Jones, 2004, p.250). Second, while members of voluntary immigrant groups gauge their progress against that of other groups that have voluntarily migrated to the United States; caste-like minorities compare their conditions to those of the dominant group, i.e., Whites. This comparison identifies occupational barriers to success and thereby contributes to a sense that upward mobility efforts will not be rewarded. (Downey, 2008, p.109). As Downey stated in his recent exposition of the "oppositional culture" explanation for Black-White differences in school performance: "black youths look around them and perceive barriers to success for someone like themselves and so respond in a way that is psychologically protective—they embrace a collective identity that defines their group in opposition to current white-controlled institutions (2008, p.109). This perspective has generally focused upon the Black-White school performance gap among adolescents, because it is "during this stage of life, when peer group influences are most salient and the realities of the labor market are approaching, that the race-based resistance to school" is most apt to occur (p.114). It is important to recognize that in Ogbu's model differences in Black-White school outcomes are not the result of racism itself (although it may well be present), but instead of Black student responses to perceived discrimination (Downey, 2008, p.110). According to Moller et al. (2006), African American students respond to perceived racial bias in school in one of three ways: (1) they persevere; (2) they act out, or (3) they give up (p.160). A substantial body of empirical work on the Black-White school achievement gap has concentrated on the "acting out" option in which the dependent variable is operationalized as the incidence of school disciplinary sanctions, notably suspensions and expulsions (Gregory & Weinstein, 2008, p.457).

Cultural Discontinuity and Conflict Factors

The individual/family literature related to the Black-White achievement gap encompasses studies into beliefs, attitudes and behaviors that are influenced by cultural differences, but the studies discussed in this section generally involve interaction processes between African American students and Whites, notably White classroom teachers. For example, Rosenbloom and Way (2004) interviewed and observed African American, Asian American and Latino adolescents attending an urban high school. Their findings presented a complicated "circular" process originating in Black and Hispanic student perceptions of teacher favoritism toward Asian students. Many of the Black and Hispanic students resented this bias and they responded by harassing their Asian classmates. This, in turn, resulted in disciplinary sanctions, including suspensions that left the perpetrators further behind academically and reinforced negative teacher stereotypes about Blacks and Hispanics.

There is one final dimension to Ogbu's theory that commands attention. As part of the process of distinguishing their oppositional culture from the dominant White culture of public schools, Black youths "define certain symbols, activities, and ways of speaking as appropriate for whites but not blacks" (Downey, 2008, p.109). Black students who display these "symbols, activities, and ways" are vulnerable to the accusation of "acting White." Thus, for example, an African American student who exerts a great deal of effort on his school work or exhibits a cooperative attitude towards teachers and other institutional agents of the White power structure is liable to receive harassment from their fellow Black students. Since these charges target a self-identity construct, students may modify their behavior to avoid being charged with "acting White."

Among Black students who do persist, perceived racism can nevertheless have a powerful effect upon their academic performance. Steele (1997) identified one pathway through which this influence may occur as "stereotype threat." In essence, stereotype threat involves an individual's fear of doing something that would inadvertently confirm a negative stereotype about the group to which he or she belongs (Holcomb-McCoy, 2007, p.255). Among Black students, this fear might take the form of anxiety about performance on a standardized test (such the NAEP assessments, the SAT, or the FCAT) based on the premise that a poor grade or score would affirm the racial stereotype that Blacks are not as intelligent as Whites. Excessive anxiety would undermine actual test performance.

Even scholars that have employed the same data sets, methodological differences have yielded radically different study findings and conclusions (Reardon, 2008, p.5). Recognizing the complexity of the phenomenon under investigation, a large proportion of the current research has tested the influence of different variables. Stewart (2007-2008), for example, found that both "within school" individual/family variables and "between school" structural factors influence the academic achievement of African American high school students and that these terms interacted with each other.

Conclusion

Although it is far from complete, the existing descriptive research amply demonstrates that Black students are trailing behind their White counterparts on virtually every major indicator of public school performance, and that Black males are at especially high risk of educational failure. The Black-White

achievement gap is apparent from the 4th grade onward, appears to widen through the 9th grade and then stabilizes partially as a consequence of disproportionately high dropout rates among Black students during the first two years of high school. The officially reported racial gap in Florida's high schools generally mirrors national data. There is, moreover, strong evidence that the official data masks the gap's true extent. The theoretical literature on the Black-White achievement gap is fragmented and conflicted. There is no scholarly consensus about the capacity of any theoretical model to explain the gap's magnitude and persistence. Empirical work within this topical domain provides at least some support for the explanatory power of at least three distinct perspectives. Structural, individual/family, and cultural conflict variables appear to contribute to the Black-White achievement gap and to interact through multiple and complicated pathways. A review of the literature strongly indicates that additional descriptive and explanatory research is warranted and suggests that the prospective findings of an investigation into the Black-White/gender gaps within Florida high schools may prove significant as contributions to the field and as grounds for educational policy decision-making.

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A STRUCTURED PERSONAL INTERVIEW MODEL FOR COUNSELORS, TEACHER EDUCATORS, AND STUDENT SERVICES PROFESSIONALS WORKING IN CULTURALLY DIVERSIFIED ENVIRONMENTS

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ABSTRACT

Over the past seventy years, the world has become a true "melting pot". This in part, due to the two World Wars of the mid 40's, the Korean War of the early 50's, the Vietnam War of the late 60's, and most recently, the Middle Eastern Wars such as the Desert Storm, the Iraqi and the war in Afghanistan. All these wars and other cultural or sociological phenomena have forced people to leave their native homelands, and immigrate to foreign countries. The creation of the European Union has also added to this phenomenon. Countries such as the United States of America, England and other European countries have been greatly affected by this world wide immigration syndrome. This syndrome has created a necessity for people to "walk in each others' moccasins or shoes, and to try to understand the struggles they go through when they move into a new cultural environment in which they would need some survival skills.

For this and other related reasons, the researcher has, for the past twenty years, been developing and using the model that is described in this research study. This model is designed for use by people in higher education, who are involved in teacher and counselor education, student services, or any kind of orientation programs. Whenever this model has been used, the success rate has been extremely high. Based upon the comments from model users, the researcher continues to fine tune and refine the research instrument.

It is true that people in general especially students, have not had significant experiences in interacting with, and communicating with people from different backgrounds (D'Andrea & Daniels, 1991). Thus, many students may have a significant impediment to overcome in order to open themselves to the cross-cultural experience of their future clients. The purpose of this research is to assist counseling students to improve cross-cultural communication skills that would enable them to use interviewing techniques with individuals from diverse cultures. This approach is open-ended with continual opportunities to refine and enhance students' skills by building on the demonstration videos of previous students.

In view of what D' Andrea and Daniels, mentioned above, I felt that a developmental model to help counselor candidates "walk in someone else's moccasins", according to a Sioux Indian proverb, was necessary. The guidelines for this structured personal interview process model have been refined, used and replicated, internationally, by other researchers or educators.

Purpose of the Research Project

The purpose of this research study, which has been going on for a number of a number of years, was to develop a "user-friendly" model which can be used by counselor educators who are interested in systematically equipping their counselor candidates with skills they can use to in their diversity, multicultural or cross-cultural courses, to prepare them to use personal interview techniques, with foreign-born clients. With permission from the author, this model has been successfully used by instructors, professors, and professionals from fields such as social work, sociology, psychology, educational administration, human relations, and teacher education. The presenter therefore hopes that conference attendees from these and other related fields would find this session beneficial.

Introduction

Many students have not had significant experiences in interacting with, and communicating with people from different backgrounds (D'Andrea & Daniels, 1991). Thus, many students may have a significant impediment to overcome in order to open themselves to the cross-cultural experience of their future clients. The purpose of this research is to assist counseling students to improve cross-cultural communication skills that would enable them to use interviewing techniques with individuals from diverse cultures. This approach is open-ended with continual opportunities to refine and enhance skills of students, building on the demonstration videos of previous students.

Project Objectives

Specific objectives were identified for this project. They included the following: 1) develop skills in cross-cultural interviewing among counselors, teachers, and others, 2) develop communication skills between and among people from different cultural backgrounds, 3) present opportunities for interviewees to express their concerns as they attempt to adjust to the dominant cultures, 4) provide an arena for dialogue between people from diverse cultures, and 5) develop demonstration videotapes of cross-cultural interviews to be used in a variety of settings where cross-cultural concerns are evident (Kasambira & Rybak, 1996).

Develop Cross-Cultural Interviewing Skills

Evaluating the effectiveness of comprehensive multicultural training courses, D'Andrea, Daniels, and Heck (1991) found, in general, that the courses did help students to increase their levels of multicultural awareness, knowledge and skills. Merta, Stringham, and Ponterotto (1988) described a cross-cultural experience that was processes in a class setting as valuable in increasing counselor sensitivity to other cultural perspectives. Anderson and Cranston-Gingras (1991) reported on a relatively brief program in which multicultural awareness can be developed. Yet, the need for quality therapeutic approaches which help guide counselors in overcoming cross-cultural obstacles has been identified (Berg-Cross &

Zoppetti, 1991). This research was directed toward developing a clear blueprint for assisting students in refining their multicultural communications abilities.

Develop Cross-Cultural Communication

Mack et al. (1997) conducted a study of campus ethic climate relations and found differences among ethnic group perceptions. Blacks tended to experience the interracial campus climate as hostile while, in general, Whites held a more positive perspective. The study also found that Asians were the least comfortable in cross-cultural situations while Latinos and Whites were the most comfortable.

Expressing Acculturation Concerns

Persons making a transition from a home culture to a less familiar culture experience considerable stress in learning to adapt to alien norms and expectations (Zapf, 1991). Where learning a new language of the host culture is involved, the interview session presents an opportunity for the interviewee to practice conversational skills with someone who is willing to take the time to listen, to probe for meaning, and to understand.

Provide Arena for Diversity Dialogue

Berg-Cross, Starr, and Sloan (1993) remarked on a trend toward divisiveness and animosity among racial and ethnic groups on college campuses in the United States. These authors suggested that corrective interventions must include the identification of intergroup commonalities as well as a respect for differences. Ultimately, a polycultural identity may be forged by individuals so they are able to relate meaningfully to others of various backgrounds. Through this process, the individual's human tendency toward a false sense cultural specialness (Hoare, 1991) is challenged.

Develop Demonstration Videotapes

Instruments such as the Cross-Cultural Competency Inventory-Revised (CCCI-R) (LaFramboise, Coleman, & Hernandez, 1991) have been developed to assess the cross-cultural competence of counseling. Demonstration videotapes offer students a chance to critique the cross-cultural interviews of others and themselves.

Procedures

The project developers structured this research using procedural steps, which appeared to work effectively. The procedural steps included: 1) identification and recruitment of interviewers and interviewees, 2) meet with and explain procedures to all participants as one group, 3) conduct videotaped interviews in pairs, 4) frequently review and discuss results as a group, and 5) modify techniques to refine cross-cultural communication skills.

Recommendations

As a result of this work, eight specific recommendations are offered for replicating this effort. These recommendations include: 1) begin with skilled or advanced level counselors, 2) seek out underserved populations, e.g., international students, and other individuals from culturally and ethnically diverse backgrounds, 3) vary the composition of the interviewer-interviewee pairs, 4) keep notes of each group meeting as records of the proceedings, 5) conduct frequent meetings of current participants, 6) critique candidly the videotaped interviews with all participants partaking, 7) provide/recommend resource materials such as Culturgrams (David M.) Kennedy Center, 1993) and videotaping facilities, 8) make sure all equipment is available and in good working condition to avoid frustrations.

Results

The final result of this project is to provide resources for counselor educators who are involved in preparing counselors sensitive to they dynamics of cultural differences and able to work with those differences. Additionally, interviewers not only gain an opportunity to learn more deeply about one or a few other cultures, but they also develop more generalizable skills in learning how to work with cultural differences. They were afforded an opportunity to begin developing self-confidence about dealing with cultural differences along with the newly acquired counseling tools. Throughout this project, a lower level of self-defensiveness and an increased openness to feedback were encouraged as model for increasing both self-awareness and usable skills for counselors.

Other results include an increased sensitivity to concerns of individuals who are in a minority status. Ways of addressing those concerns can then be developed, e.g., psycho-educational and support groups to address the issues particular to diverse groups of people.

Implications

Results from this research could be used for purposes such as: 1) provide counselor in-service training activities, 2) curricular improvement of multicultural or multiethnic education courses, 3) orientation programs for American host families of international students, 4) international student service offices training activities, 5) incoming college professor and instructor orientation programs, 6) student activities orientation programs, 7) for new and transfer student orientation activities (university experience courses), and 8) staff development, e.g., university, education, human service agency, industry, and government.

Conclusion

The structured interview process described offers an integrative, flexible, and developmental model for enhancing cross-cultural communication. The model offers the possibility of involving counselors in training and others at all levels of experience. For example, even though novice counselors were not used in the early stages of development of this model, they could easily take part in live observation, operation of video equipment, and participation in the critiques of completed videotaped interviews.

Future research and experiences with this model may show its degree of efficacy for various populations and particular contexts. The model is very much based on a practice, evaluate, modify or improve feedback cycle for a given situation. Additional research may help point the way to further refinements and best use of the model.

Research Procedural Guidelines

To avoid confusion on the part of the model users, the following set of guidelines are always given, and discussed in class, before the beginning of the assignment. These guidelines are intended to help the users with the technical part of the assignment.

Instructions to the model user

1. Identify an individual who was born in a foreign country, whose culture is totally different from yours. For instance, someone form the Middle East, Africa, South America, the Caribbean Islands, China, or Europe, would do. This could be a foreign student, or a foreign professional in your community or home town.

2. Once you have identified the individual, approach him/her, and explain to them in as much detail as you can the purpose of your research study, which is to learn about other people's cultures.

3. Using the personal interview guidelines provided, go ahead and do a library or internet research on that individual's native culture.

4. Using the categories provided, develop a set of questions for each of the categories. Make sure that your questions are open-ended, as much as possible, to provide opportunities for dialogue.

5. Contact your interviewee and make arrangements for the personal interview. The real interview could take place in the interviewee's home, office, or such quiet place.

6. Before the interview, ask the interviewee for permission to tape record your interview. Recording the interview is the safest way to keep a record of what went on in the interview, and to give you an opportunity to use direct quotes, if you have to, for your written paper.

7. In your interview, make sure to watch for the interviewee's body language.

8. You cannot do your interview over the phone, or via email, since doing so would ruin the whole purpose for the exercise.

9. At the conclusion of your interview, kindly ask you interviewee to sign their name as proof of your having interviewed them. However, if for some reason, they do not feel comfortable to do so, then, do not press the issue.

10. After the interview, then combine your library research material with the personal interview data, and write, using the APA documentation style, a 10 page double spaced paper. An example of the APA style documentation is provided by the instructor.

11. You should have at least ten references, used in your paper.

12. Your paper should have a title page, with all pertinent information on it.

IMPORTANT THINGS TO INCLUDE IN THE PERSONAL INTERVIEW PROCESSES

One of the most important features of this model is the eight categories from which the interviewer can develop a variety of open-ended questions to be used in the personal interview sessions. The users are encouraged to be creative, flexible and sensitive towards their interviewee's cultural backgrounds, as they develop their questions. Interviewers are encouraged to develop questions that would generate a "dialog", rather than a "one way street" discourse, during the personal interview sessions. These categories are stated and discussed below:

1. **Interviewee's Cultural Background Factors**

Interviewee's Country of Origin

Based upon the interviewer's research findings, it is very important at this point, for the interviewer to ask questions that will help to verify research facts. This can be achieved by developing and subsequently asking questions that deal with the country's geographic location and its relationship to contiguous countries, if there are any. Here, inclusion of a map of the country of origin would help to give the reader a mental picture of the interviewee's country of origin, and its relationship to the rest of the world. This in reality is the orientation to the cultural study. It is also important to find out whether this is a "developed" or developing country, since this factor might come in handy when the researcher tries to make a comparison of his or her country, and the interviewee's, in number 7 of this model. Another thing to include here is the issue of population, languages spoken in that country and by whom. At this point, it is also important to discuss the issue of ethnicity and race or race relations. Issues such as prejudice, discrimination and racism could be covered here, if they apply.

Personal Factors

Questions dealing with the interviewee's upbringing, and lifestyle would be appropriate here. Those questions dealing with whether or not the person was raised in a rural of urban setting, what they did for leisure or work, and their relationship patterns could be discussed here. The issue of formal educational achievement, previous work record, accomplishments or occupational history could be discussed her.

Pre-departure Decision

Factors involved in motivation for coming to the United States (or any other country) would be discussed here. Previous travel experiences to other countries and reasons for doing so would be discusses here as well. Questions concerning the interviewee's contact with Americans, and to what degree, would be appropriately discussed here as well. The issues dealing with sponsorships, or scholarships, if they are students and how they heard or learned about coming to the Unite States are covered here. The issues concerning immigration or travel documents and what was involved in the whole process would be discussed here. Reasons for immigrating to the United States would be covered here as well.

2. **Individual Factors**:

In this section it is important for the interviewer to carefully observe the interviewee's body language such as non-verbal language dispositions such as eye contact, or other mannerisms. Issues such as religion, cultural beliefs, superstitions or values that affect the individual, family, or country could be discussed here. The interview's experiences in this country, concerning prejudice, discrimination or racism they might have experienced and how they dealt with these experiences could be discussed here. Relationships developed with Americans, and values placed on these relationships could be covered hare, also.

Whether or not the interviewee can still maintain his/her cultural beliefs or values could be explored here. Physical, psychological or mental health issues such as homesickness could also be discusses in this section.

3. **Group Factors:**

This section is where questions dealing with whether or not the interviewee had some family linkages in the United States are raised and discussed. The interviewee and the interviewer discuss whether or not the former had established any memberships in groups, what kind of groups they are--- civic, social, religious, or political. A rather in-depth discussion of current friendships or associations with Americans could be explored here. Along with this, questions concerning whether or not the interviewee is able to associate with nationals from his/her native country, and to what degree, could be discussed in this section of the interview.

An issue which could be raised and discussed here is to what degree the interviewee was able to interact with Americans, the degree of their desire to do so, and barriers or opportunities to do so, can be discussed here too. How the foreigner deals with the issue of in-group/out group syndrome, access to other groups such as support groups, their kinds, and reasons for joining them could be discussed here. Factors affecting ability to join groups such as ideology, mobility, and previous experiences could also be covered in this section.

4**. Task Factors**

The task factors section might include things such as the interviewee's objectives for staying in the United States, expectations from the American culture, preparations for tasks, such as perceived adequacy, standards, norms, for "success", access to resources such as information, informal guidance from peers, power and status as a student/professional, barriers to opportunities, and principal adjustments needed for success and problems faced, could be covered here.

5. Situational Factors:

Things such as time constrains, pressure of work, duration of stay, home connections, - to what degree, housing—satisfaction/problems, effects of environmental factors such as climate, food, and ability to move freely, daily interaction with other people, responsibility to others in the USA, or home countries could be covered here. Another aspect that could be examined here is the individual's participation in the US culture, adjustment of family members to the American culture, and the type of problems the immigrant faced since arrival.

6. **General Factors in the Interviewee's Culture**:

The interviewee's own cultural outlook on factors such as socioeconomic status or special classes, importance of ethnicity, tribalism, or the cast system, religion and its role in society, the importance of language or languages in the interviewee's culture, issues of sex and gender, as it relates to opportunities in life or the workplace, and the role of women in society, could be examined in this section. How exceptional people, or the elderly are treated in society, in general, could also be also be discussed here. Finally in this section, family structures—size, nuclear, extended, blended, etc, could be discussed here as well.

7. **A Brief Comparison of Cultures**

Based upon the researcher's findings, it is highly recommended that a brief comparison of the two or so cultures be made.

8**. Conclusion**:

The researcher needs to summarize research findings, by addressing issues related to lessons learned from the exercise, making appropriate recommendations for further research, or how this assignment could be improved upon. Finally, the researcher is encouraged to make suggestions as what kind of people other than counselor education candidates, could benefit from doing this kind of research exercise.

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SECOND LIFE – A TECHNOLOGICAL SIMULATION FOR CULTURALLY RESPONSIVE TEACHING FOR EVERY CLASSROOM

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ABSTRACT

This paper focuses on Second Life, an immersive learning software program of a Virtual World that allows students to actively communicate with people from different places and different cultures, with the assistance of simultaneous translation services. Teachers, with their students, can create scenarios in endless venues, focusing on concepts of culturally responsive teaching, while "meeting" students from other cultures and countries for discussions, ideas, developing thinking skills, and participating in simulated field experiences.

Keywords: technological simulation, global perspectives, social justice, human rights

A Technological Perspective for Pre-service and In-service Teacher Preparation

For generations, desks and chalkboards have been the centerpiece of the classroom, with a teacher as the expositor of information to [hopefully] attentive students. And while that image still persists for those of us beyond the childhood years, the new generations of learners will gradually find such an image quaint and archaic. Because, already there is a "second life" poised to replace the current physical classroom, beginning with a Virtual World (and undoubtedly more to come) called Second Life (**SL)**, available via the Internet.

With **SL**, already a virtual reality, the author of this paper will present the current possibilities and advantages of connecting traditional classroom preparation of pre-service teachers and in-service preparation with the expansive opportunities for classroom instruction provided by this technology format which is part of the system known as *immersive learning*.

Currently, **Second Life Viewer** refers to itself as a free *client program* that enables its users, called *Residents,* to interact with each other through *Avatars.* Residents can explore, meet other Residents, socialize, participate in individual and group activities, and create and trade *virtual property* and services with one another, or travel throughout the world, which Residents refer to as the "grid". **SL** is designed for users aged over eighteen, while its sister site *Teen Second Life* is restricted to users between thirteen and eighteen.

Built into the software is a *three dimensional modeling* tool based around simple geometric shapes that allows a resident to build virtual objects. This tool can be used in combination with a scripting language called *Linden Scripting Language* for adding movement and function to objects and can be combined with three- dimensional sculpted forms for adding textures for clothing or other objects, animations, and gestures. (Taken February 16, 2009, *Second Life*, Wikipedia, The Free Encyclopedia).

Second Life at the University

In 2008, one of the authors of this paper in collaboration with classroom educators initiated a Second Life component to the Education Department's pre-service course titled Elementary Methods and Curriculum. While adhering to the in-place curriculum and conceptual framework for this course, she explored the possibilities of using **SL** with her students. As this component was developed, many significant principles of learning (Vygotsky, 1978, Gardner, 1983, Marzano, Pickering, Pollock, 2001, Strong, Silver, Perini, 2001) became available to all the participants, principles that were previously unavailable in a "regular" classroom, because of constraints of time, student schedules, and the already established requirements. The following extensions available through **SL**,are listed here and then detailed, and represent only the first steps in the merging of this **SL** technology with teacher preparation:

- **Virtual Classroom Development** which can be modified continuously, as required, for specific subject area learning and attention to individualized needs
- **Subject-Area Availablility and Integration** through access to the Internet and human resources
- **Practice Teaching Simulations and Role-Playing** allowing every pre-service student to participate and interact with colleagues
- **Distance Learning Opportunities for Developing Culturally Responsive Teaching** with "distance" being global and communication made possible through immediate translations (ex. Italian to English and English to Italian, etc.)
- **Simulated "Field" Experiences** that take students to "courthouses, hospitals, environmental sites, geographic regions" or wherever else one can actually and, therefore virtually, reach.

The remainder of this paper describes in detail how each of the above aspects of this pre-service course were expanded through **SL.** Combined with these aspects of learning is the research that attests to their value for both classroom teachers and students and can be provided more effectively and efficiently by access to **SL.** This preparation is essential for developing quality teachers imparting a high-level curriculum who can particularly address the needs of students of diversity who may have previously been "under-served" (Rothstein, M. and E. Rothstein, 2009).

Virtual Classroom Development

SL allows the teacher, as well as the students, to continuously "modify the classroom." While most classrooms today have desks, chairs, and writing services (e.g. white boards, SMARTBoards), only a few classrooms are set up as laboratories of learning. In an SL scenario, students can set up virtual environments of cities, countrysides, museums, wildlife settings or whatever is related to the curriculum. By creating these simulated settings, teachers and students are involved in active research from the Internet and other media which they can then present to colleagues or classmates for true sharing and discussion. Through this simulation, the teacher guides the students in a true cross-cultural model for individualization of instruction (Maisano, 2004).

Subject Area Learning and Attention to Individualized Needs Through Virtual Classroom

> "Planet earth is inhabited by all kinds of people who have all kinds of minds. The brain of each human is unique. Some minds are wired to create symphonies and sonnets, while others are fitted out to build bridges, highways, and computers… (Levine, 2002. 1)

This opening statement in *A Mind at a Time*, while undoubtedly reasonable to most educators, rarely serves as the basis for subject area instruction in schools. Standardized tests and even standards drive the curriculum, setting goals that *all* children must achieve if the school or schools are to be deemed successful. And even though Levine states that "tragic results are seen when we misconstrue and possibly even misuse a child's kind of mind," (2), competitive testing, pacing guides, and grade level requirement often take precedence over the needs of the individual child's mind (Maisano, 2004).

Marzano, Pickering, and Pollock (2001) express a complementary viewpoint on instruction by challenging the concept of what "all children" need (rather than what the individual child needs) by asking if there are instructional strategies that are 1) more effective in certain subject areas 2)more effective at certain grade levels 3)more effective with students from different backgrounds, and 4) more effective with students of different aptitudes (9). In response to these questions, the authors state three strategies that have been shown to have positive effects, which are:

- Student-centered instructions
- Teaching of critical thinking skills
- Use of hands-on "laboratory" activities

While administrators and teachers may agree with the concepts of Levine and Marzano, they may ask, justifiably, how they could possibly create instructional formats that are "individualized" and "student-centered" when all the students must pass the same tests at the same time and know the same information which they must all learn at the same rate.

The answer, or more modestly, *an* answer to this query of school personnel, might lie in the inclusion of Second Life in the classroom which can be introduced and maintained by the current population of pre-service and in-service teachers who enter the classroom with SL knowledge and skills which this paper addresses.

Subject-Area Availablility and Integration

E.D. Hirsch's second chapter in *The Schools We Need* is titled "Intellectual Capital: A Civil Right". Hirsch opens with the statement that "The need in a democracy is to teach children a shared body of knowledge"(17), which he calls *intellectual capital*. and "operates in almost every sphere of modern society to determine social class, success or failure in school, and even psychological or physical health" (19). Hirsch continues to explain the concept of Intellectual Capital as a necessity for economic and psychological well-being, focusing on those children denied access to this "capital." He empathetically writes, [these children] "fall further and further behind. The relentless humiliations they experience continue to deplete their energy and motivation to learn." He then compares this lack of intellectual capitalism with money stating that a "child's accumulation of wide-ranging foundational *knowledge* is the key to educational achievement" (20).

The inclusion of **SL** in the teaching/learning spectrum and in the preparation of pre-service teachers can be a powerful adjunct in the development of intellectual capitalism because not only does it have the advantage of being a virtual modifiable classroom, but because it offers access to specific subject-area topics that, again following through on Hirsch, "can be broadly shared with others" for effective communication and learning (20). Through **SL**, pre-service teachers and students of all ages can "go to" sites on beginning reading, mathematics, chemistry, or whatever curriculum area is needed. A further advantage of this access is the opportunity to truly integrate subjects. At a **SL** site, "Avatars" with different aspects of knowledge can meet to present and discuss, for example, "the relationship of mathematics to chemistry, " or "the history of the English language and its affect on English spelling." Visitors to the site can bring their high-level intellectual questions and find other visitors and materials with answers. The learning is not linear and based on a pacing guide, but circular and expansive, and dependent on shared knowledge.

Practice Teaching Simulations and Role-Playing

SL gives every participant student multiple opportunities to participate and interact with colleagues. In the *History of Education in America*, published in 1994, the authors Pulliam and Van Patten wrote of the "Characteristics of Futuristic Education" 270-281, much of which they have said is not only relevant, but still needs to occur. They begin with the axiom that "Education is more than training". Training refers to providing students with existing information that focuses on memorization and regurgitation of short-term information. The true purpose of education, they state, "requires an environment in which students are not asked questions for which the answers are known", but which develop the "ability to solve problems and communicate in a meaningful way" (272). The classroom, as we know it, is a limited setting for pre-service teachers to practice teaching simulations and to role-play not only the teacher, but the learners. The teacher who lectures can only hope that the "wisdom and knowledge" emanating from the lecture reaches and interacts with the brain of the learner.

Two recent publications extend the earlier work of Pulliam and Van Patten: Howard Gardner's *Five Minds for the Future* (2007) and Daniel Pink's *A Whole New Mind* (2005). Gardner's "five minds"

represent what he terms "five *dramatis personae*" that allow a person to be "well-equipped to deal with what is expected, as well as what cannot be anticipated" (2). The five minds, according to Gardner, are the *disciplined* mind, the *synthesizing* mind, the *creating* mind, the *respectful mind*, and the *ethical* mind. Gardner's specific use of the terms *dramatis personae* tie in not coincidentally with the need for "role playing" in teacher preparation.

Daniel Pink (2005) also focuses on the mind, referring to artists, inventors, designers, storytellers, caregivers, consolers, big picture thinkers—those with minds needed for the forthcoming decades. Needed for a successful future will be those people who exhibit the qualities of inventiveness, empathy, joyfulness, and meaning. If we can imagine future teachers having minds that merge the qualities of Gardner and Pink, we can imagine teaching and learning environments well beyond the current classrooms we now have. To begin this process, teachers of the future need to begin their training by simulating and role-playing of what is likely to be.

The addition of **SL** to pre-service teacher preparation is designed by its structure to foster and promote continuous interactions and role-playing, based on solving problems that confront learners and learning, stretching their minds to be disciplined, synthesizing, creating, respectful, and ethical. Every participant in a **SL** setting must interact *cooperatively, (*not *competitively)* a behavior which the authors emphasize is predictive of not only success in school, but success on the job and in life (Pulliam and Van Patten 274). And interacting cooperatively encompasses the qualities cited by Pink. In an **SL** setting, pre-service teachers can be involved in all or most of these simulations and role-playing activities.

Distance Learning Opportunities for Building Culturally Responsive Teaching

These aspects of teaching and learning are automatically built into **SL**, with "distance" being global and communication made possible through immediate translations (ex. Italian to English and English to Italian, etc.). With **SL**, pre-service and in-service teachers communicate directly with a variety of educators from other countries and cultures with opportunities to become culturally responsive teachers.

Gay (2000) defines culturally responsive teaching as using the cultural knowledge, prior experiences, and performance styles of diverse students to make learning more appropriate and effective for them; it teaches to and through the strengths of these students. According to Gay, culturally responsive teaching:

- Acknowledges the legitimacy of the cultural heritages of different ethnic groups, both as legacies that affect students' dispositions, attitudes, and approaches to learning and as worthy content to be taught in the formal curriculum.
- Builds bridges of meaningfulness between home and school experiences as well as between academic abstractions and socio-cultural realities.
- Uses a wide variety of instructional strategies that are connected to different learning styles.
- Teaches students to know and praise their own and each other's cultural heritages.
- Incorporates multicultural information, resources, and materials in all the subjects and skills routinely taught in schools (p. 29).

Ladson-Billings (1994) studied actual instruction in elementary classrooms and observed these values being demonstrated. She saw that when students were part of a more collective effort designed to encourage academic and cultural excellence, expectations were clearly expressed, skills taught, and interpersonal relations were exhibited. Students behaved like members of an extended family-assisting, supporting, and encouraging each other. Students were held accountable as part of a larger group, and it was everyone's task to make certain that each individual member of the group was successful.

As the potential of SL develops, in-service teachers have direct experiences in communicating with peers from different cultures and backgrounds. Imagine a group of pre-service teachers from University of North Carolina exchanging methods, concepts, and ideas with teachers from Sardinia, using the technology of **SL** to exchange materials and artifacts, share problems and solutions, and maintain on-going dialogues.

Simulated "Field" Experiences

SL can take students to or wherever one can virtually reach. In A Whole New Mind (2005), Pink outlines six "high-concept, high-touch senses that can develop the whole new mind" that today's and future students will need. He names these "senses" design, story, symphony, empathy, and play (5,6). While all of these senses can be elevated or raised through participation in SL, "play" can have a special place and a special value in the SL experience. Pink cites the definition of play

by Brian Sutton-Smith as "to act out and be willful, exultant and committed as if one is assured of one's prospect' (187).

One of the pleasant school activities for most students (adult and children) is a field trip which almost always connotes a day of fun or virtual play. A field trip is not only seeing and being part of a place outside the classroom, but means freedom to walk around, possibly touch plants or animals or unique objects, talking to classmates without disapproval, and learning "outside the box". Yet field trips are generally infrequent, maybe not more than twice a year and almost always dependent on the school budget. Adding **SL** "field trips" to a school day, while not quite reality, can be a high-level substitute that expands horizons and offers visualizations beyond those that can be provided in textbooks and other written materials. A virtual visit to a courthouse with its external and internal settings can create a sense of exultation, enhanced by a scenario of role-playing set in an historic period in new geographic locations populated by "characters" of a different era and maybe speaking a different language that is now simultaneously translated on the computer screen.

Results of Survey Taken of Pre-Service Teachers at Western Carolina University in Their Initial Introduction to Second Life.

The Ultimate Survey Analysis currently used at Western Carolina University was given to 35 pre-service education students at the completion of their Second Life course. (http://ultracat.wcu.edu/ultimatesurvey/Analysis/RunAnalysis.aspx?analysisID=957&surveyID=2273)

Two different questions were asked, which resulted in 70% positive responses and 30% negative responses. For the purposes of this paper, we have presented the questions and a sampling of the first ten responses to each question divided in positive statements and negative statements.

A third question asked about the challenges presented by SL which can provide information on ways to improve the immersive learning experience. We selected ten challenges that we believe needs special attention for making SL a fully positive teaching training experience.

Question 1: How did your learning experience in a "virtual environment" prepare you for your pre-service teaching experience?

POSITIVE	NEGATIVE
I know how to reach a wide variety of audiences and to teach online. It has given me a new resource to use in my teaching. I feel like I am prepared to teach students in this new technology world. It has given me the chance to talk with other teachers and learn more about teaching in other areas around the world. I have become more aware of the resources found within	I do not think it helped me in any way. I don't think it has. I don't know what I am supposed to do.

the "virtual world." SL has provided many online resources with helpful information on teaching and curriculum It is a new age technology and will be an advancement. On SL we have addressed different situations which have provided helpful hints for working with difficult students.	

Question 2. What was your biggest success from learning in an immersive world environment?

POSITIVE	**NEGATIVE**
It was more of a self-awareness, knowing if I had a good idea and could reach a lot of people. Now I am more comfortable with an immersive world environment. Learning how to create my avatar and maneuvering it. I feel like I understand SL and see how great a tool it is. Meeting teachers from around the world. I could present to outside avatars with my professor. I found some really cool science and literature resources. Getting experience that I can use in my own classroom.	Nothing really. I just did not like it.

Question 3. What was your biggest challenge to learning in an immersive world learning environment?

Finding everything and navigating through its landmarks. It's not completely interactive. A lot to learn and sometimes overwhelming. Too many avatars at once in the classroom. The ups and downs of technology. Trying to gather what everyone is saying.

Conclusion

Our own experience with using the immersive learning experience of Second Life is the potential for expanding the global perspectives of both teachers and their students. While many of the teachers struggled with the technology of new software and new ways of interacting both with "avatars" and the demands of the university program, they had the unique experience of "meeting" a global world and have the advantage of "talking" in their language and getting back the translations of people speaking languages they would normally not be able to understand. The teachers could ask a wide range of questions—cultural and educational—and get instant answers which they could then discuss later with their own group and then go back to the source of these questions for further expansion and clarification.

Thomas Friedman (2005) has stated the world is flat, a new way of looking at the globe and its potential for direct communication. Second Life, as one way of immersive learning, can be a starting point for global interaction moving us closer to the long sought after goal of a world of social justice and human rights.

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ACTING LOCALLY: LIVE THEATER IN SUSTAINABLE ECONOMIC & COMMUNITY DEVELOPMENT STRATEGY

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ABSTRACT

There are, according to the American Association of Community Theatre (ACCT), 7000 community theatres in America marshaling 1.5 million volunteers to produce 46,000 productions per year. These productions reach audiences totaling 86 million people and operate with a combined annual budget of nearly one billion dollars. Commercial enterprises in theatre are a part of the historic culture of the United States, so much so that one may only say the word “Broadway” and the images of the stage arise, but the United States is more than New York City. In the smaller ‘apples’ of the United States that are the smaller cities that are home to many who value live theatre, there are people who have chosen to translate this value into action.

Human action has an impact. This paper will examine the impacts of community theatre on the economic and community development of selected cities in the United States. In a world in which the sustainability of the physical environment is a growing concern, the choices made in the social environment must be a consideration. Does community theatre have a role to play in sustainability of the social and physical environments? This paper will examine cases of community theatre operation, drawing from those cases lessons for acting local for sustainability.

THE EFFECTS OF PSYCHOLOGICAL CONTRACT VIOLATIONS ON CONSUMER BEHAVIOR AND FIRM RELATIONSHIPS

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ABSTRACT

Multiple theories have been used to frame dissatisfaction studies however none tells the whole story. This research proposes an alternative framework for the consumer dissatisfaction process, namely, the psychological contract theory. The psychological contract represents a set of unwritten reciprocal expectations between an individual and the firm. Consumer psychological contracts are developed through repeated interactions with products, brands, or employees of the firm. This research examines the consequences of consumer anger on consumer psychological contract and future usage of firm services. The purpose of this research is to test the relationships between the attribution element of firm blame and anger on the consumer psychological contract and future firm usage. Data were collected from a convenience sample through an online survey. Respondents then completed a questionnaire pertaining to the placement of and level of blame, their anger experience, the degree of psychological contract fulfillment and finally their future usage decisions. Structural-equation modeling was undertaken to test the hypotheses. The model was found to have provided a good fit for the data. The results validate the assumptions of the psychological contract theory and suggests that fulfillment of the contract along with firm blame play an important role in future usage decisions. Limitations and future research are also discussed.

Introduction

There has been a great deal of research into consumer dissatisfaction and its outcomes. The study of consumer dissatisfaction covers a vast literature. Understanding both the sources and consequences of consumer dissatisfaction is very important to researchers and managers alike because dissatisfaction is thought to effect consumer behaviors and firm relationships. Unfortunately, previous research findings have provided mixed evidence of the effect of dissatisfaction on consumers' responses and subsequent firm relationships.

Multiple theories have been used to frame dissatisfaction studies including the (dis)confirmation paradigm (Oliver, 1980), Hirschman's theory of exit, voice, and loyalty (Hirschman, 1970), attribution theory (Folkes, 1984), and equity theory (Adams, 1965). While each of these theories has shed light on specific aspects of the consumer dissatisfaction process none tells the whole story. This is illustrated by the fact that although dissatisfaction is necessary for complaint behavior to occur it does not guarantee

it. Numerous researchers have found that the mere experience of dissatisfaction only explains a small portion of consumer complaint behavior (Bearden & Teel, 1983; Blodgett et al., 1993; Day & Landon, 1976).

The purpose of this research is to propose and test an alternative framework for the consumer dissatisfaction process, namely, the psychological contract theory. A psychological contract is a set of beliefs held by a person regarding the terms of an exchange agreement to which that person is a party (Robinson & Morrison, 1995). The psychological contract represents a set of unwritten reciprocal expectations between an individual and the firm (Schein, 1978). This concept of the psychological contract is prevalent in the management literature. However, this concept could also apply to the consumer-to-firm relationship. Understanding psychological contracts in the consumer context could enhance our understanding of consumer dissatisfaction and complaint behavior because consumer beliefs about the extent to which the firm has fulfilled its obligation to them will affect their behavior toward the firm.

Prior complaint behavior research has the (dis)confirmation paradigm as its foundation. This paradigm focuses on the evaluative process whereby a consumer compares a products actual performance to prior expectations. These prior expectations are important because they form the benchmark by which all other experiences are judged. This process is quite similar to how the psychological contract is formed.

Consumer psychological contracts are developed through repeated interactions with products, brands, or employees of the firm. Exchange relationships are characterized by mutual expectations. In consumer-firm relationships, as in all relationships we develop expectations about the relationship. We learn what the other party expects us to contribute and we, in turn, develop notions about what we should receive from the relationship (Heath, Knez, & Camerer, 1993). These ideas are very similar to those expressed in the equity theory.

Equity theory is a social comparison theory. This theory states that consumers compare the investments they make to a firm to the benefits they derive from the firm. According to the principle of distributive justice people in an exchange relationship with others are entitled to receive a reward that is proportional to what they have invested in the relationship (Homans, 1961). “According to equity theory, consumers compare the inputs and outcomes of firms in comparison to their own inputs and outcomes based on role expectations (Oliver & Swan 1989, pp.372).” Inequity exists when the perceived inputs and outcomes in an exchange relationship are psychologically inconsistent with some referent (Huppertz, Arenson, & Evans, 1978). The source of these referents stem from consumer’s past experiences and social norms.

The time element plays a key role in developing strong consumer-to-firm relationships. “Consumer interactions are distinguished by whether consumers evaluate their exchanges in isolation or as a continuation of past exchanges likely to continue into the future (Czepiel, 1990, pp. 15).” The strengthening of consumer-to-firm relationships involves a consumer’s collective assessment of multiple

experiences or transactions. As the number of prior positive sales experiences increases, the level of trust and commitment grows. The duration of consumer-firm interactions serves as the building block for other important relationship components like trust and commitment.

Likewise, the time element is also an important component in the psychological contract between consumers and firms. The psychological contract exists relative to an individual's exchange history and expectations (Conway & Briner, 2002). Psychological contracts are developed through repeated interactions and are constantly being updated. Therefore, one's assessment of what they are entitled to strengthens as time progresses and subsequent interactions further support expectations.

Exchange relationships are characterized by mutual expectations and the principle of reciprocity (Bagozzi, 1995). As consumers invest more time, effort, and other irrecoverable resources into a relationship, psychological ties and expectations of reciprocation are formed (Blau, 1964). "Reciprocity is identified as a key feature explaining the duration and stability of exchange relationships (Larson, 1992)." Reciprocity evokes obligation toward others on the basis of past behavior. The principle of reciprocity states that people should return good for good, in proportion to what they have received (Bagozzi, 1995). Therefore, actions taken by one party in an exchange relationship are expected to be reciprocated in kind by the other party. This principle fosters a positive atmosphere, removes barriers of risk, and enables relationships to move forward (Barclay & Smith, 1997).

Figure 1. Theoretical Model

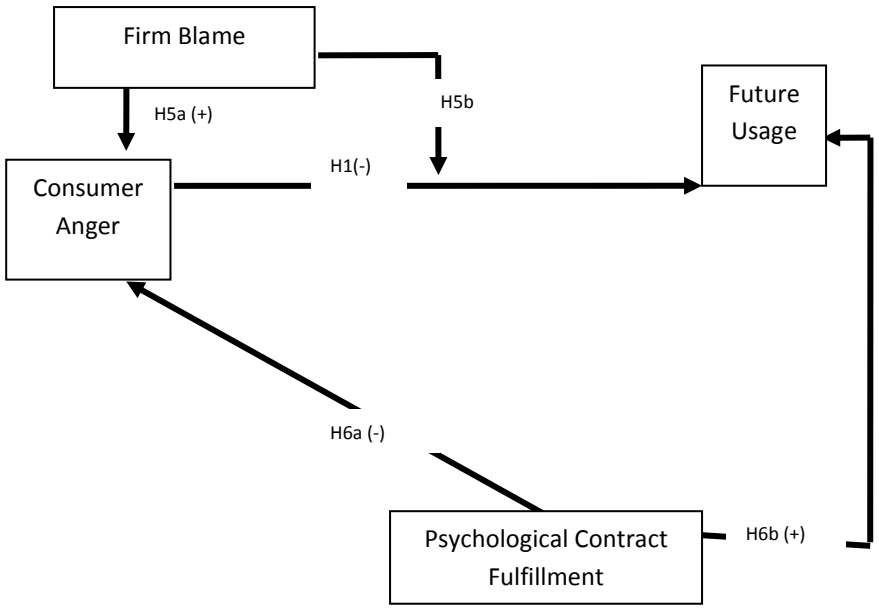
"Expectations constitute the perceived or psychological contract in a relationship and the benefits we believe we deserve constitute our entitlements (Heath et al., 1993, p. 75)." Expectations and reciprocity are key elements in the concept of entitlement. Entitlements are the benefits that people believe they deserve under the implicit contract (Heath et al., 1993).

The strengthening of consumer-to-firm relationships involves a consumer's collective assessment of multiple experiences or transactions. As the number of prior positive sales experiences increases the level of trust and commitment grows. "Consumer interactions are distinguished by whether consumers evaluate their exchanges in isolation or as a continuation of past exchanges likely to continue into the future (Czepiel, 1990, p. 15)." The duration of consumer-firm interactions serves as the building block

for other important relationship components like trust and commitment. Likewise, the time element is also an important component in the psychological contract between consumers and firms. The psychological contract exists relative to an individual's exchange history and expectations (Conway & Briner, 2002). Therefore, one's assessment of what they are entitled to strengthens as time progresses and subsequent interactions further support expectations.

Any inability of the firm to fulfill consumer perceived entitlements is viewed as a breach or violation of the psychological contract. Contract violation is more than failure of the organization to meet expectations; responses are more intense because respect and codes of conduct are called into question because essentially a "promise" has been broken and it is more personalized (Rousseau 1989). Therefore, a violation involves an emotional state which stems from the belief that the organization has failed to adequately maintain the psychological contract (Morrison & Robinson, 1997). Any changes in behaviors from expectations are typically perceived to violate the implicit contract and therefore are perceived to be unjust and unfair (Heath et al., 1993, p. 76). These consumer assessments have consequences for the firm. Assessments of unfairness are generally accompanied by negative emotions especially anger. The main aim of this research is to examine the consequences of consumer anger on consumer psychological contract and future usage of firm services. The purpose of this research is to test the relationships between the attribution element of firm blame and anger on the consumer psychological contract and future firm usage.

Figure 2. Proposed Model



Consumer Anger

Anger is a central element in social behavior (Diaz & Ruiz, 2002) and an important determinant in consumer behavior. Nyer (1997) suggests that specific emotions tend to result in certain behaviors. Anger is a prime example. Anger has been found to have significant direct effects on consumer responses to service failure (Bougie et al., 2003). For example, research conducted by Folkes, Koletsky, and Graham (1987) found a relationship between anger and consumer complaint behavior and repurchase intentions. Similarly, Diaz and Ruiz (2002) also found a relationship between anger and repatronage intentions. In other words, consumers were less likely to continue their relationships with firms that made them angry. Therefore, based on the findings of previous research, I propose the following relationship.

H1: Consumer anger will be negatively related to the future usage.

Attributions

The consumer's perception of causality plays a critical role in the anger experience. Previously conducted research suggests that emotional responses vary depending on how consumers attribute blame (Machleit & Mantel, 2001).

The concept of attribution is composed of three dimensions: control, stability, and blame. However the control and stability dimensions have been examined in many studies with conflicting results. In contrast, very little focus has been place on the dimension of blame. Blame attribution is believed to affect a variety of emotional experiences including anger (Machleit & Mantel, 2001; Weiner, 1985). A crucial aspect distinguishing anger from other negative emotions is the element of blame (Averill, 1982). Anger is characterized by the belief that some misdeed has been perpetrated upon us unjustifiably (Lazarus, 1991). As a result, anger tends to be externally focused. Prior research supports the idea that attribution influences affect and behavior. Hence, I propose the following

H2: Firm blame will be positively related to consumer anger.

H3: Firm blame will be negatively related to future usage.

Psychological contract fulfillment

The psychological contract represents a set of unwritten reciprocal expectations between an individual and the firm (Schein, 1978). In consumer-firm relationships, consumers develop expectations about the relationship. They learn what the firm wants them to contribute and they, in turn, develop notions about what they are entitled to receive from the relationship (Heath et al., 1993). Any inability of the firm to fulfill consumer perceived entitlements is viewed as a breach or violation of the psychological contract. From the consumer's perspective, violations of the psychological contract are essentially broken promises or betrayals of trust. These types of occurrences are accompanied by intense reactions.

In fact, consumers may experience anger simply because the service provider has failed to deliver on an implicit promise (Taylor, 1994). Therefore, I propose the following

H4: Psychological contract fulfillment will be negatively related to consumer anger.

H5: Psychological contract fulfillment will be positively related to the future usage.

Methods

Procedure & Sample

This study was administered through an online survey. Data were collected from a convenience sample. The study contained a student recruited sample (SRS).

In order to obtain the sample for study SRS, forty student recruiters, enrolled in various marketing courses at a southern university, were used. The use of students as data collectors has been successfully utilized in numerous marketing studies (Bitner et al., 1990; Gwinner et al., 1998). The student participants were required to recruit non-student respondents to go to the website and complete the questionnaire. The use of online data collection made validation of respondent participation necessary. In order to validate, a question on the survey asked participants to voluntarily supply their email addresses. Respondents who provided their email address were entered into a random drawing for $200 worth of gift cards as an incentive and were emailed a one question survey, asking them if they participated in the survey. Those responses were then used to validate survey participation. Of the total sample, 34% confirmed their participation in this study with an email response. As a result, a total of 279 surveys were retained in the final sample.

Establishing a Context

Respondents were asked to reflect on a recent (within the past 6 months) anger-evoking service experience that served as the basis for completion of the survey. Respondents were asked to describe the incident. Respondents then completed a questionnaire pertaining to the placement of and level of blame, their anger experience, the degree of psychological contract fulfillment and finally their future usage decisions.

Measurement

With the exception of future usage, all the construct measures were taken from previously developed scales.

Psychological Contract Fulfillment. The purpose of the psychological contract construct was to assess if respondents felt that the implicit contract between themselves and the firm was violated. The concept of psychological contract breach was measured using two scales. First, a five-item measure developed by Robinson and Morrison (2000) was adapted to directly assess perceived contract fulfillment. The directions asked respondents to please indicate how accurately the following statements describe the

incident you experienced. The items included "*I did not receive everything I should have in this situation*" and "*I felt that I received everything I was entitled to in this situation*." The measure contained five-items on a response scale of 1(strongly disagree) to 5(strongly agree) (alpha .92).

Second, given that the perception of fairness was an important component of this construct, a measure of fairness was also used to assess the lack of fairness. The fairness construct used an adapted version of the three-item, bipolar scale reported in Oliver and Swan 1989 (alpha = .83). The items included "*I was treated fairly in this situation*" and "*I did not get treated right in this situation*." The items were measured using a 5-point likert format.

Consumer Anger. Anger was measured using a portion of Spielberger's State-Trait Anger Expression Inventory (Forgays et al., 1997). The state anger scale was developed to measure the intensity of angry feelings at a particular point in time. The original scale contained ten self-scored (1-4) items. The alpha coefficients for the scale are .90 indicating a high degree of internal consistency for the scale. The directions asked respondents to please indicate the extent to which you experienced the following emotions (e.g. *I felt angry ; I was furious*)during the incident you described. (1=not at all, 5=very much)

Attribution. The element of blame is a crucial aspect of the consumer anger experience. The primary concerns are who or what is blamed and whether the blame is attributed internally or externally (Taylor, 1994; Weiner, 2000). In the case of anger, blame is generally focused externally. Two items from Wade (1989) victimization subscale were adapted in order to assess the element of blame. The directions asked respondents to please indicate your level of agreement with the following statements: "I blame the firm for this situation" and "*The firm wronged me*." The firm blame measure contained two-items on a response scale of 1(strongly disagree) to 5(strongly agree). (alpha =.77) The third item was measured using a response scale of 1(none of the blame) to 5(a great deal to blame). The directions asked respondents to please indicate the extent to which you felt the following parties were to blame for this situation.

Future Usage. The final future usage scale is composed of two items. The first question follows a true/false format. "*Since this incident occurred, I will no longer do business with this firm*." If the respondent answers false, then he/she must answer the second question. '*I (will) continue to do business with this firm but*: *Not as much; Not at the same location; Not for certain types of products/services; I avoid certain employees; I will make no changes*. For analysis purposes, these two questions were combined and examined as ordered categorical data.

Covariates. The influences of several covariates on the dependent variable were examined including incident severity, age, gender, race, and education. Incident severity was examine as a covariate because evidence suggests that severe offenses generate more negative emotions (Richins, 1997), like anger, and more retributive responses (Aquino et al, 2001). This variable was measured using a two-item response scale of 1(strongly disagree) to 5(strongly agree). The first item was "*The incident was very inconvenient to me."* The second item was "*The consequences of this incident were severe for me*."The remaining items examined were self-reported demographic variables.

Analyses and Results

Structural-equation modeling was undertaken to test the model and the hypotheses. Anderson and Gerbing's (1988) two-step procedure was use to test the hypothesized relationships. First, all the multi-item scales were subjected to an exploratory factor analysis using the principal component analysis in order to test for unidimensionality. Varimax rotation was used to examine the factor structure of the data due to its simplicity and ease of interpretability. Evaluation of the eigenvalues showed clear factor solutions. The first factor consisted of four psychological contract items with cronbach alpha reliabilities of .88. The second factor was comprised of six anger items with cronbach alpha reliabilities of .82. The anger items separated into two factors due to problems with the original scale. After review, only one factor was deemed appropriate for this research and the others were removed. The third factor was made up of three firm blame items with cronbach alpha reliabilities of .88.

Table 2 presents descriptive characteristics of the SRS sample. The confirmatory factor analysis of the multi-items constructs showed that the model fit the data well. The fit statistics for the model were as follows: chi-square 605.38 with 254 degrees of freedom; root-mean-square error of approximation (RMSEA) .076; goodness of fit index (GFI) .84; comparative fit index (CFI) .94; incremental fit index (IFI) .94; and relative fit index (RFI) .88. All composite reliabilities were above.60 and all average variances extracted were at or above the recommended level of .50.

The means, standard deviations, and intercorrelations of the variables are presented in Table 1. All of the correlations were in the expected direction. The proposed model structural model was tested and the results indicated that the chi-square was significant. Unfortunately, the results from this statistic are questionable given the sample size and further confirmation was needed. Most of the model fit indices fell inside the established limits set by Hu and Bentler (1998). Thus, the model appears to do a reasonable job of indicating the existing relationships between the constructs examined in the study. A summary of all of the results are provided in Table 3.

Table 1. Means, Standard Deviations, Correlations, and Reliabilities

SRS						
Variable	**Mean**	**Std Dev**	**1**	**2**	**3**	**4**
Anger	3.30	.910	1.00			
Psychological Contract Fulfillment	2.30	.988	-.324**	1.00		
Firm Blame	3.83	.997	.369**	-.458**	1.00	
Future Usage	2.73	2.00	-.287**	.444**	-.337**	1.00

Figure 3. (SRS) Structural Model Results (* solid lines represent supported relationships)

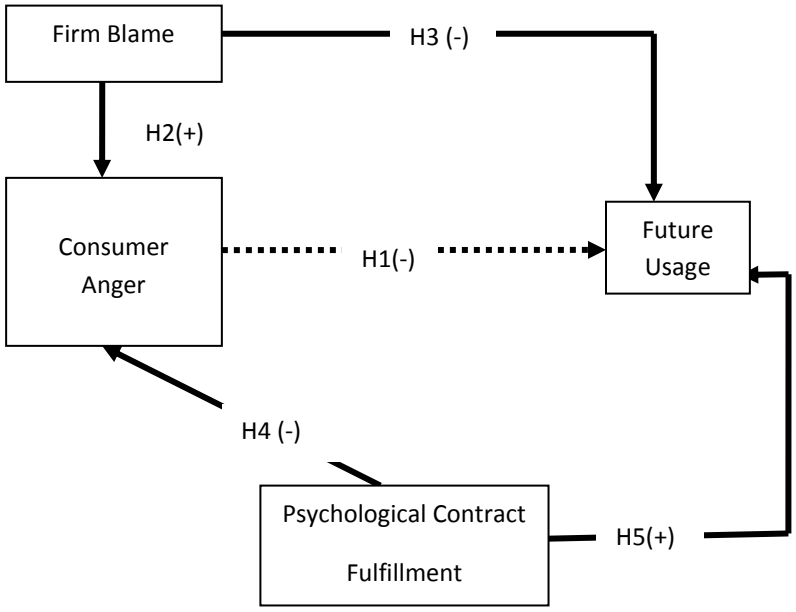


Table 2. Demographic Characteristics

Characteristics	Categories	SRS %
Age	19-24	21.1
	25-34	21.1
	35-44	10.8
	45-54	34.1
	55-64	8.6
	65-74	0.7
Gender	Male	30.8
	Female	65.6
Race	White	91.0
	African-American	3.2
	Other	2.1
Education	Some High School	0.7
	High School Grad	7.5
	Some College	25.8
	College Graduate	48.0
	Graduate Level	14.3

All of the SRS model fit indices fell inside the limits established by Hu and Bentler (1998) except the RMSEA statistic which was slightly above the limit. Thus, the model does a reasonable job of indicating the existing relationship between the constructs examined.

Table 3. Results of Structural-Equation Model Hypotheses Testing.

Hypothesis Path		**Proposed Model t-values**
		SRS
H1: Consumer Anger→Future Usage		-1.36
H2: Firm Blame → Consumer Anger		3.98**
H3: Firm Blame → Future Usage		-1.98**
H4: Psychological Contract Fulfillment → Consumer Anger		-2.36*
H5: Psychological Contract Fulfillment → Future Usage		5.14**
	Fit Indices	
	Chi-square	195.28
	RMESA	.082
	SRMR	.082
	GFI	.90
	CFI	.96
	IFI	.96

Discussion

The proposed model examined the role of consumer anger, firm blame, and psychological contract fulfillment on consumer future usage decisions. The model was found to have provided a good fit for the data. The proposed negative relationship between consumer anger and future usage was not supported. This finding is important because it is in sharp contrast to what we expected to find. Previous research has suggested that anger is an important determinant in consumer behavior. In fact, research conducted by Diaz and Ruiz (2002) and Folkes et al (1987) identified negative relationships between anger and repatronage intentions. Therefore one could reasonably expect the consumer experience of anger to negatively impact their decision to purchase from those firms in the future. However, the results of this study indicate a non-significant relationship between consumer anger and future usage.

Hypothesis 2 proposed a positive relationship between firm blame and consumer anger and was supported. In addition, Hypothesis 3 proposed a link between firm blame and future usage and was also supported. These findings illustrate that blame is a key element in the anger experience. The assignment of blame to specific parties or entities is important because it then focuses individual efforts to rectify the situation. Per equity theory, responses to injustices should be commensurate with the misdeed. Funches (2009) suggest that revenge-driven consumers seek to match their retaliation efforts to firm transgressions. In other words, the punishment needs to fit the crime. In this case, blame aimed at the firm is a key component in the consumer anger phenomena and firm blame was also considered by respondents in their future usage decisions. Hence, when blame is attributed to the entire firm terminating the relationship with that firm would be an appropriately matched response.

Both hypotheses 4 and 5 were supported in the sample. Each of these hypotheses was focused on the impact of psychological contract fulfillment on consumer anger and future usage decisions. Hypothesis 4 suggested that psychological contract fulfillment would be negatively related to consumer anger. The results indicate support for this relationship in the SRS sample. A lack of contract fulfillment involves an emotional state which stems from the belief that the organization has failed to adequately maintain the psychological contract (Morrison & Robinson, 1997). “Any changes in behaviors from expectations are typically perceived to violate the implicit contract and therefore are perceived to be unjust and unfair” (Heath et al., 1993, pg. 76). Assessments of unfairness are generally accompanied by negative emotions, like anger. The findings of this research support these assertions in a consumer context.

Hypothesis 5 was supported. The results of this study indicate consumer perceived psychological contract fulfillment is positively related to future usage. Therefore, the more consumers feel they are receiving their deserved entitlements the more likely they are to continue their relationship with the firm. Likewise, the more consumers feel their psychological contract has been violated the less likely they are to continue their relationship with the firm. These consumer assessments have consequences for the firm. This finding is important because the concept of the psychological contract is a key factor in the consumer anger phenomena and the subsequent future usage decisions.

Overall, the findings illustrate that the theory of psychological contract is indeed appropriate in the consumer context. This finding is important because support of these relationships suggest that the psychological contract theory may be a more encompassing theory of dissatisfaction that contributes to our understanding of the impact of the negative service encounter. These findings show that the consequences of negative service encounters are influenced by the assessment of blame upon the firm and damage to the psychological contract. This information is important to managers because it will allow firms to more proactively manage the psychological contract. The more managers understand about the development of the psychological contract the more they can influence the inputs perhaps even allowing the matching of firm strengths with implicit contract elements.

Limitations and Future Research

The findings of this study are subject to several limitations. First, although the model tested in this research was satisfactory, it is recognized that other alternative models and relationships among constructs could have also yielded satisfactory results. Second, the use of a student recruited sample is a limitation of this study. Although efforts were taken to exclude student participation and to validate the sample, the findings may not be generalizable to other populations.

There are several interesting avenues for future research. First, examining the effects of different types of loyalty on the relationship between psychological contract violations and future usage could be very fruitful. The effect that psychological contract violations have on subsequent purchase decisions may be altered depending on the type of loyalty consumers express. This represents an important aspect of the psychological contract theory that warrants further attention. Second, future research could examine the role different switching barriers play in influencing the effect of psychological contract violations. It is not clear how consumers with limited options might respond to these violations. It would be interesting to examine the consequences of negative service encounters given these constraints.

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THE RESEARCH AND EXPERIMENTAL TAX CREDIT CAN REDUCE YOUR TAX LIABILITY

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ABSTRACT

Firms can enhance their profitability by acting upon the latest extension of the Research and Experimental Tax Credits available under the most recent amendment Tax Reform Act of 1986. This paper focuses on certain provisions of the Tax Reform Act of 1986 which business can use in developing competitive advantage. The Research and Experimental Tax Credit provisions were extended on an annual basis until 1999. The provisions have extended and modified several times since then. The most recent extension covers the tax year 2009. The carry-back and carry-forward provisions allow firms to go back three years to take advantage of the credits if they have not done so. The latest provisions of the law offer a wider range of productivity improvement efforts that can qualify for tax credits. Previous research has identified six distinctive competencies as leading to competitive advantage. Five of these are impacted by the information presented herein.

Use of the tax law provisions is important to business owners, managers, consultants, and academicians. Organizations should incorporate these provisions into their strategic management and planning processes. Consultants should make their clients aware of these provisions of the law. Additionally, the features discussed provide points of departure for research and teaching by academicians. An example of how a firm might take advantage of the Research and Experimental Tax Credit is provided.

Keywords: Tax credit, productivity, research, experimental

Introduction

Competitive advantage is based upon a number of critical success factors related to the distinctive competencies of a firm. A study by Stoner (1987) found six distinctive competencies that lead to competitive advantage: (1) owner and employee ability, (2) a special or unique product, (3) customer service, (4) relative quality of product/service, (5) location, and (6) low cost and price. As discussed below, certain provisions of the Tax Reform Act of 1986 have been extended on a year-by-year basis with some modifications. This act replaced the traditional Research and Development Tax Credits for the purpose of encouraging productivity improvement. The Research and Experimental Tax Credits (R & E Tax Credits) cover a wider range of activities for which tax credit may be claimed than did the Research and Development Tax Credit (R & D Tax Credit) laws. Robert D. Atkinson (2006) reports that the R&E tax credit makes the U.S. economy more competitive for innovation based activities.

Congress extended the law in December of 2006 with an extension until the end of 2008 and made it retroactive for the year 2006 because a previous extension did not cover 2006 (Helen Shaw, 2006.) The extension through the year 2009 was contained in the Emergency Economic Stabilization Act of 2008 (H.R. 1424 signed into law by President Bush (Jesmer and Lacey, 2008).

The extension included and eight year investment tax credit window for solar, small wind, and geothermal systems. The tax credits vary for each company, but can be around 13 per cent of the relative expenses (California Executive, 2008]. The late action on the part of Congress places a burden on some businesses in taking advantage of the tax credits. **However,** the **carry-back and carry-forward** provisions provide an opportunity for the business to improve competitive advantage in several areas as will be discussed and illustrated later. Also, it should be noted that many practitioners still use the term "R & D Tax Credits" instead of R & E Tax Credits.

Although tax law is normally given consideration in many business decisions, there is little evidence that some important provisions of the Tax Reform Act of 1986 as amended and extended are used by small businesses in setting competitive strategy, but that large firms take significant advantage of the tax credits (Tax Projects Group,2008). Proper use of certain tax credit provisions of the law may make some projects feasible which would be discarded without this consideration. These activities could lead to improved product quality, improved customer service, and lower cost. The combination of improved quality and lower costs gives a firm the strategic options of competing by offering higher quality at current prices, offering higher quality at lower prices, or in some cases of actually receiving higher prices for the higher quality. Additionally, some firms may already qualify for the carry-back and carry-forward provisions of the Act if relevant business activities are properly documented. The carry-back and carry-forward features make the use of the tax credits in calculating the cost of doing business well worth investigating.

Considerable attention has been given to many factors of competition a firm might employ when attempting to achieve competitive advantage. Models have been developed which include consideration of the external environment in which government agencies are generally lumped together

under the term "regulatory agencies." The case studies used as learning vehicles in the small business management courses often contain financial statements that are analyzed by students in their study of the cases. However, the impact of using tax law for strategic advantage has been ignored in the small business management texts except for the mention of taxation rules in determining the legal form of business. Quite likely this has occurred because tax law is an area considered to fall into one of the functional areas of the firm which is taken care of routinely in the conduct of business. The information presented in this paper will show that tax law is an important consideration in setting competitive strategy. As competition in both the industrial and service sectors becomes more severe, each firm must seek every legitimate means to increase its competitive advantage. This applies to setting long-run competitive strategies as well as to improving day-to-day operations. Certain provisions in the 1986 Tax Reform Act are designed to encourage research and innovation which lead to productivity and quality improvement. The tax credits allowed for these expenditures can create a financial benefit, which, in turn, should enable a small business organization to find or increase competitive advantages through lower operating costs. Presently, tax credits may be allowed for such diverse functions as product development, engineering, operations, personnel, finance, and marketing.

Herman, Wile, and Kolker (2009) provided the following example of R&E Credits realized by manufacturing firms.

Type of Company	Annual Sales	Size of R& E Tax Credit (multi-year basis)
Aluminum Diecaster	$22 million	$108,000
Gray and Ductile Iron Foundry	$10 million	$162,000
Machine Tool Shop	$25 million	$230,000
Machine Tool Shop	$8 million	$75,000
Plastic Injection Molder	$20 million	$382,000
Boat Manufacturer	$110 million	$650,000
Scale Manufacturer	$40 million	$360,000
Survey Instrument Manufacturer	$30 million	$288,000

Also, Herman, Devereux, and Wile (2009) provided a specific description of how the R & E Tax Credit applied to a metal casting firm.

Brief Description of the Act

The Tax Reform Act of 1986 became law on October 22, 1986 (The Research Institute of America, 1986). It was the most drastic overhaul of the Federal tax system in forty years. Most provisions of the 1986 Tax Act directly amend the Internal Revenue Code. Consequently, the Internal Revenue Code is now known as the Internal Revenue Code of 1986. An immediate concern to business was the news that the regular investment tax credit (ITC) was repealed for property placed in service after December 31, 1985.

However, certain investment tax credits did remain for specified properties and activities of the firm. Of great significance in the Tax Act are those rules and definitions concerning the investment tax credit that benefit those who are taking specific action toward improving their competitive position through quality and productivity programs. The apparent opportunities for small business lie in the definitions and descriptions found in the Research and Experimental (R&E) expenditures tax credit areas of the Act. The 1986 Act extended the existing research credit with some important modifications. The Act reduces the R&E expenditure credit to 20 percent and keeps the base period rule only for qualified research expenses. An important additional feature of these tax credits is the fact that they are subject to a three year carry-back and fifteen year carry-forward rule. (For details on the treatment of the carry back and carry forward rules see Smith, 1990).

The Act introduces a special set of operating rules for "basic research expenses," a new category that replaces prior law's contract research expenses (RIA Complete Analysis …, 1986). While the new definitions seem more restrictive than the old, it is important to explore the opportunities for the small business that lie in the new definitions. Because of the carry-back provisions, these definitions should be evaluated for application to activities and programs already in place as well as for future activities.

The Tax Act defines "qualified research" and "qualified research expenses" as follows:

> Qualified Research. The 1986 Tax Act provides that the term "qualified research" means research with respect to which expenditures may be treated as expenses under Code Section 174 if undertaken for the purpose of discovering information which is technological in nature, and the application of which is intended to be useful in the development of a new or improved business component of the taxpayer, and substantially all of the activities of which constitute elements of a process of experimentation as defined.
>
> Qualified Research Expenses Qualified research expenses include all internal and external expenses in the appropriate activity categories. These include: wages for qualified expenses, supplier(s) used in conducting qualified research, and rentals for the use of computer and software in qualified research [IRS CODE 41(d) …].

A Simple Test to Determine if a Firm Should Explore the R & E Tax Credits

Ask if the firm.

- Manufactures products?
- Develops or developed new, improved, or more reliable products/processes/formulas?
- Develops new technology?
- Designs tools, jigs, molds or dies?
- Develops prototypes or models?
- Performs environmental testing?
- Conducts testing of new concepts and technology?
- Develops or improves production/manufacturing processes?
- Perform certification testing?
- Develop production control software?
- Automate internal processes?
- Improve or build new manufacturing facilities?
- Expend resources on outside consultants/contractors to do any of the above activities? (Whitlock, Selim & Keehn, 2008).

Application of the Process

Despite the seemingly restrictive definitions and the exclusions in the Code, there are many opportunities available to the organization to take advantage of R&E expenditure tax credits [RIA …]. Several key words to consider are Quality, Reliability, Performance, and New or Improved Function.

These are words that relate to day-to-day production processes in many firms, including service as well as manufacturing. These watchwords are derived from the code definition of the term "business component." Business component is defined as:

"...any product, process, computer software, technique, formula, or invention that is to be held for sale, lease, or license, or used by the taxpayer in a trade or business of the taxpayer." (Internal Revenue Code Section 41(d)(2)(B))

If the requirements of a business component described above are not met with respect to a product but are met with respect to one or more elements thereof, the term business component means the most significant set of elements of such products with respect to which all requirements are met. In other words, there is a shrinking back process which allows the business to move from applying the definition to the end item offered for sale back to the components of the product or service until the definition is satisfied.

The above information sets the stage for managers to identify activities in the organization that can qualify as business components or subsets thereof. It should be noted that qualified research expenses include both in-house research expenses and contracted research expenses. However, not included is research in the social sciences, arts, or humanities, or research funded by government agencies. Additionally, there are special rules for production processes (see Internal Revenue Code Section 41(d)(2)(C)). Some examples of where the Act applies are as follows:

* Product design and development - applies to new and improved products, but not to debugging or correcting functions of products already on the market. However, this can include developing a "new and improved" version of an existing component in, for example, an automotive engine.
* Process analysis - process quality assurance activities designed to produce a better product. These go beyond the normal quality activities.
* Process design - research aimed at improving the manufacturing processes thereby producing higher quality products.
* Inventory policy - extraordinary efforts taken to purchase better parts, not just more expensive parts. Also, above normal efforts to increase quality of incoming parts.
* Quality assurance - extraordinary efforts in packaging, shipping and handling, preservation, etc., which will help ensure quality of the product. This area also includes efforts in getting and using feedback from customers if this feedback results in improved quality of the products.
* Automation and advanced technology - Leased CAD/CAM work stations, software and certain other equipment. Also, qualified research in this area includes the development of robotics and software for the robotics for use in operating a manufacturing process, and the taxpayer's research costs of developing the robotics. Costs of new or improved internal-use software must also meet the requirement that the software is innovative (as where the software results in a reduction in cost, or improvement in speed, that is substantial or economically significant), that substantial risk is involved in committing the funds to the software development, and that the software is not commercially available without significant modification so that it will meet user requirements.
* Sixty-five percent of qualified outside research expenses - A portion of contract research can qualify for the credits if this research can be shown to improve the firm's operations in the same fashion as expenses incurred directly by the company.

If a firm is considering taking advantage of these R&E tax credits, it must be able to document not only the expenses, but also that they are a departure from normal expenditures and how they have resulted in improved quality. Detailed records are a necessity.

An Example

Quick Supply Company (fictitious firm) has annual sales of $20million. The president of the firm initiated a project for quality improvement called "Top Quality." The project started in 2006 with an allocation of $60,000 to the project. The same amount was allocated in 2008 with an increase to $70,000 in 2008 (current year for the example) to qualified R & E expenses. Quick has the option of selecting the higher tax credit based on the three year average or using 50% of the current year's qualified expenses. A comparison of these base amounts shows the following.

1) 3 year avg = $(60,00+60,000+70,000)/3 yrs = $63,333.33
2) 50% of $70,000 (current year R & E) = $35,000.00

So, Quick would choose a tax credit based on the larger qualified amount of $63,333. This would provide a tax credit of .20 X $63,333 = $12,666. (It obvious that for large firms, the potential tax credit could be much more.)

Quick would need to examine this tax credit in light of any other credits it may earn and limits on annual tax credits it may have. This could bring into play the three year carry-back and the fifteen year carry-forward provisions of the tax law. A review of the checklist of possible credits is in order before calculating the credits and after the calculations to ensure that everything including management participation in training and quality improvement, hire of outside consultants, and other factors have been included. For example, some years ago the President of Mead Paper Company was proud to boast that 50 per cent of his time was spent in working in the productivity improvement area. Properly documented, 50 per cent of his salary could provide a significant impact on Mead's the tax credit calculations.

Strategic Implications of the Tax Credit

The above example reviews an action by Quick Supply Company. The strategic implications of contemplating such activities are discovered in the planning stage. Calculating the possible tax credits provides a planning tool that Quick could use in making the decision of whether to invest in productivity improvement. The tax credit can be leveraged if it is necessary to borrow funds, provide the impetus to make an investment which might be questionable without such an analysis, possibly even impact pricing alternatives for Quick. It is clear that if a firm investigates and estimates the tax credits in advance, that the risk factor of some investments will be lowered.

Conclusions and Recommendations

The information and the example provided indicate opportunities to improve five of the distinct competencies. These are: (1) owner and employee ability through training programs, (2) opportunity to develop special or unique products, (3) improve customer service, (4) improve quality, and (5) achieve lower costs. The distinctive competence of location may or may not be impacted. The incentives to improve quality and productivity covered above should be considered when developing competitive strategy, for aiding in the strategic decision processes concerning the employment of new technologies,

and expansion into areas such as new product lines. Other crucial provisions of the Tax Act which impact the firm were not covered here since the intent was to focus on the Research and Experimental Tax Credit provisions. Businesses should take advantage of the expertise of their own staff or, if necessary, an accounting or consulting firm for guidance in this important area. The potential cost savings are significant and may well allow a given firm to compete in situations where the margin of the R&E tax credit makes the difference between profit and loss.

It is recommended that businesses aggressively pursue this matter, because not only will it affect future earnings, but some activities of the past three years may also be eligible for inclusion. For firms involved in expenditures for expansion, proper employment of the Tax Act provisions could provide significant advantage and decrease the break-even time or volume for a product. Academicians should investigate the tax law area to determine the appropriateness of including it in the strategic management and small business management courses. Consultants or counselors for small businesses should ensure that their clients are aware of the benefits available to those firms making definite efforts to increase productivity and quality.

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STATE TAX CREDITS AND INCENTIVES MAY ENCOURAGE VIOLATIONS OF FEDERAL LAW

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ABSTRACT

The individual states are able to create their own tax systems. Most states do follow the general format of the federal income tax, but each state has its own credits and incentives. This paper examines state tax incentives as they relate to taxpayer behavior. In particular, the author reviews state credits that may encourage violations of federal tax law. The author concludes that the potential is real, that there are several topics worthy of further research, and suggests legislative solutions to some of the problems.

AUTHENTIC LEADERSHIP AND BUDGET-BUILDING PRACTICES: SUPERINTENDENTS REVEAL CONNECTIONS, ORIGINS, AND STRATEGIES

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ABSTRACT

The study surveyed school district superintendents in six southern states concerning their leadership style and budget-building practices. We examined the relationships among superintendent authenticity and budget-building transparency, information processing, staff cohesiveness, and district demographics. The analyses of our data reveal that leadership authenticity is positively and significantly correlated with budget-building transparency and information management. We also found a significantly positive relationship between budget-building transparency and information processing. Superintendents with fast-rising career patterns and superintendent self-described leadership style were not found to be correlated with their budget-building practices. Several demographic factors were examined but only superintendent educational background, size of school district, and school district socioeconomic status were associated with budget-building transparency. We discuss the implications of these findings and offer recommendations for future inquiry.

Keywords: Authentic leadership, Superintendent authenticity, Budget-building practices, Superintendent career paths, Superintendent Leadership

Introduction

The intersection of leadership style and organizational practices reveals a great deal about how school superintendents attempt to influence their district's progress. The purpose of this paper is to explore the relationships among superintendent leadership authenticity and the transparency, information processing, and staff cohesiveness involved in budget-building processes. We surveyed public school district superintendents in six southeastern states concerning their leadership styles and the budget-building processes they employ in their administrations. While the literature surrounding leadership is voluminous, research about how school leaders create and implement processes leading to annual budget adoption is much more limited. Understanding the antecedents and consequences of these basic components of school operations will inform university preparation programs, practicing superintendents, school district professional development programs, and school board executive selection and evaluation practices.

Leadership

Practicing school executives can turn to a vast amount of both scholarly and popular literature about the study of leadership. Private sector business literature in general and more specifically, positive organizational scholarship (Cameron, Dutton, & Quinn, 2003a, b; Spreitzer, 2006; Verbos, Gerard, Forshey, Harding, & Miller, 2007), point to the importance of the leader's talent in an organization's success (Kahn, 1990; Marzano, Waters, & McNulty, 2005; Ostrem & Wheeler, 2006). While leadership style literature ranges far and wide, recently the concept of authentic leadership has received attention (Avolio, 2007; Avolio & Gardner, 2005; Avolio, Gardner, Walumbwa, Luthans, & May, 2004; Begley, 2001; Blausten, 2009; Champy, 2009; Endrissat, Muller, & Kaudela-Baum, 2007; Gardner & Schermerhorn, 2004; George, Sims, McLean, & Mayer, 2007; Goffe & Jones, 2005; Goffe & Jones, 2007; Ilies, Morgeson, & Nahrgang, 2005; Jensen & Luthans, 2006; Kellett, Humphrey, & Sleeth, 2006; Luthans & Avolio, 2003; Marshall & Heffes, 2004; Masarech, 2001; May, Chan, Hodges, & Avolio, 2003; Michie & Gooty, 2005; Palmer & Fleig-Palmer, 2006; Price, 2003; Shamir & Eilam, 2005; Sparrowe, 2005; Tate, 2008; Toor & Ofori, 2008; Yammarino, Dionne, Schriesheim, & Dansereau, 2008). Salient characteristics of authentic leaders include self-awareness, confidence, resiliency, and optimism. Authentic leaders are future oriented and have a proclivity for action. They establish long-term, meaningful, and transparent relationships with followers. Authentic leaders have a passion for their purpose and practice their moral/ethical values consistently. They have the ability to empathize with different types of people and situations and they build on the strengths of followers.

Walumbwa, Avolio, Gardner, Wernsing, & Peterson (2008) operationalize authentic leadership for study by developing a questionnaire containing four fundamental elements: self-awareness, relational transparency, balanced processing, and moral integrity

Authentic leadership studies in education are appearing with some regularity (Begley, 2001; Begley, 2006; Branson, 2007; Walker & Shuangye, 2007). Nascent school setting studies by Authors (2009a) nested these business concepts within the principal-teacher-student-school relationships. School principals who are perceived as being authentic by their teaching staffs are more likely to have faculties that are more trusting and engaged. When principals underestimate their faculty's perception of their authenticity, those faculties have higher levels of trust and engagement. Teacher perception of principal authenticity has positive effects on teacher retention (Authors, 2009a).

Missing from the leadership literature are scholarly inquiries concerning the authenticity of school district superintendents. Does this leadership style exist at the superintendent executive level? Can it be measured? If present, what effect does it have on the practices employed and what effect does it have on the subordinates who carry out those practices?

Budget-building Practices

As chronicled by Authors (2009b), if a practicing superintendent were to venture into the literature of school finance he or she would find traditional treatments of legislative revenue/expenditure structures (e.g., Brimley and Garfield 2008; Cubberley 1906; King, Swanson, and Sweetland 2003); evolving court cases (King, Swanson, and Sweetland 2003); and, treatises concerning the parameters of adequacy,

equity, and the pursuit of excellence (King, Swanson, and Sweetland 2003; Reyes and Rodriguez 2004). The process functions of budgeting, planning, and accounting would receive attention (Brimley and Garfield 2008; Fullerton 2004; Goertz and Hess 1998; Gonzales and Bogotch 1999; Miles and Roza 2006; Reyes and Rodriguez 2004; Slosson 2000; Stiefel, Schwartz, Portas, and Kim 2003). The extant literature also contains many studies of school effectiveness which purport to measure student performance gains (King, Swanson, and Sweetwater 2003).

While this body of knowledge provides some basic fundamental guidelines for the practicing superintendent, it does not inform the school executive on structural or functional aspects of how a school district should be organized to ensure student success or how to interface with the political context of the community with its scarce resources, competing interests, and high expectations. Initial attempts to study superintendent practices reveal connections between the transparency of budget-building processes and information management procedures. Surveyed superintendents were eclectic in their practices and depended more on their on-the-job training and experience than their university professional preparation programs (Authors, 2010).

Missing from the budget-building literature are scholarly inquiries concerning the relationships among school district superintendents' leadership style and the budget-building practices they use in their organizations. Are some styles linked to certain practices? Are patterns discernable or is the craft eclectic in nature? Are there demographic factors involved and what might they be in terms of influencing what superintendents do and how they interact with their subordinates and community? The linking of process (leadership) and content (school finance) serves as a basic structure to this proposed study.

Research Questions

Based upon the review of related literature outlined above, we formulated the following research questions:

1. Is there a significant positive relationship between school district superintendent leadership authenticity and the transparency of their district's budget-building practices?
2. Is there a significant positive relationship between school district superintendent leadership authenticity and the information processing practices of their budget-building processes?
3. Is there a significant positive relationship between school district superintendent leadership authenticity and the fast-rising career pattern of superintendents?
4. Is there a significant difference between superintendents' self-described leadership style and their budget-building practices? and,
5. Is there a significant positive relationship between school district superintendent leadership authenticity and other demographic measures employed in this study?

Methods

Participants

After removing three participants due to missing data on at least three items of the constructs measured, we had 224 superintendents in six southeastern states: Alabama (*n* = 22), Arkansas (*n* = 59), Georgia (*n* = 56), South Carolina (*n* = 23), Tennessee (*n* = 31), and Virginia (*n* = 33). Among them, 160 (71%) were male and 64 (29%) were female. The participants were predominantly Caucasian (92%) with 16 (7%) African American and three people (1%) identified with none of the major ethnic groups in the United States. As for their education background, 128 (57%) held doctorate degrees, 50 (22%) held specialist degrees, and 46 (21%) held master's degrees.

Procedures

All superintendents in six southeastern states were sent electronic message alerts inviting them to participate in a study concerning their leadership styles and budget-building practices. A few days later, the actual questionnaire was sent to them electronically. A one-time follow-up opportunity to participate was sent within a week to 10 days later. Response rates varied across the six states from a low of 17% to a high of 31% with an overall return of 227 superintendents from 988 districts, or, 23%. The superintendents participated anonymously and without any monetary incentive. Each was promised an executive summary of the study and a full manuscript if so desired. All participants completed the survey on-line. Their responses were tabulated into SPSS (version 16) for statistical analyses. The relationships among transparency, information management strategies, and cohesiveness of staff were examined with Pearson correlation coefficients. One-way multivariate analysis of variance (MANOVA) was employed to examine possible differences between fast-rising superintendents and non fast-rising superintendents on the outcome measures. Median ages of the first principalship and first superintendency (32 and 47.50, respectively) were used as cut-off criteria to separate participants into fast-rising superintendents and non-fast-rising superintendents. One-way MANOVA was also employed to examine possible differences on the outcome measures between superintendents' self-described leadership styles. A 2 X 3 MANOVA was also used to examine differences on the authenticity, transparency, and information processing practices in the budget building processes for superintendents' gender (male and female) and highest educational degrees earned (doctorate, specialist, and masters). A 3 X 3 X 4 MANOVA was used to examine differences on the authenticity, transparency, and information processing practices among districts classified by size (small, medium, large), socioeconomic level (poor, middle, and rich), and type (rural, suburban, urban, and small town). School district socioeconomic level was measured by the percentage of students eligible for free- or reduced-price lunch program. Finally, a 3 X 3 MANOVA was used to examine differences on the authenticity, transparency, and information processing practices among districts classified by student academic achievement (below state average, at state average, and above state average) and per pupil expenditure (below state average, at state average, and above state average).

Instrumentation

Participants responded to an 87-question survey. The survey combined questions about authentic leadership (Items 4-19), respondent demographics (Items 1-2), respondent budget-building practices (Items 48-83), respondent self-described leadership style (Item 20), respondent school district characteristics (Items 21-23, 46-47), respondent career patterns (Items 3, 24-41), staff cohesiveness (Items 42-45), and the source of respondent budget-building practices (Items 84-87).

Authentic Leadership Questionnaire. Walumbwa, Avolio, Gardner, Wernsing, & Peterson (2008) developed a 16-item questionnaire to measure authentic leadership style. There are four subscales designed to reveal the components of authentic leadership: (1) self-awareness refers to the extent to which leaders are aware of their strengths and limitations and how others perceive them; (2) relational transparency refers to the extent to which leaders reinforce a level of openness with others; (3) internalized moral reasoning refers to the extent to which leaders set high standards for moral and ethical conduct; and, (4) balanced processing refers to the extent to which leaders solicit sufficient opinions and viewpoints of others prior to making important decisions. There are two versions of this questionnaire: one for the leader to self-report and one for raters to assess their leaders. In this study we used the leader self-report form. The internal reliability for each sub-scale is as follows: self-awareness, .73; relational transparency, .77; internalized moral perspective, .73; and, balanced processing, .70 (Walumbwa et al., 2008). Participants were asked to rate the frequency of each statement that fits the leadership style using a 5-point scale ranging from 1 (not at all) to 5 (frequently, if not always).

Budget-building Practices Questionnaire. Previous research (Authors, 2009b) utilized a set of questions which was designed to measure the constructs raised in this study: transparency of the budget building process (Items 48, 50-56, 63-67, 72, 74-76, 78-79, 81); information management strategy (Items 49, 57-62, 68-69, 73, 77, 80); cohesiveness of staff (Items 42-45); career development path (Items 29-38); administration experience (Items 39-41); student performance in comparison to the state average (Item 46); per pupil expenditure (Item 47); source of practices (Items 84-87); as well as, to collect participants' demographic information and educational background (Items 1-11). For participants' career development path (Items 29-38), participants were asked to report the number of years they worked at each position (teacher, principal, superintendent) and at each school level (elementary, middle, and high). Item 38 asked the participants to identify one of the career paths (teacher – department head – assistant principal – principal – central staff – superintendent; teacher – administrator – superintendent; private sector – education; other). For administration experience (Items 39-41), participants were asked to report their age (at their first administrative position, first principalship, and first superintendency). For cohesiveness (Items 42-45), participants were asked to report the number of years they worked with current principals and business managers under their current superintendency. For both student performance (Item 46) and expenditure (Item 47), participants were asked to rate at three levels (above, at, or below state average). The rest of items (Items 48-87) were statements of which participants were asked to indicate their degree of agreement (1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, and 5 = strongly agree). Because of the wording of the questions and the choices available for answers, Items 48, 50, and 72 were reverse-scored.

The reliabilities of the three key constructs measured were satisfactory: .80 for leadership authenticity, .77 for transparency of budget building process and .71 for information processing practices. The concept of reliability for the construct of cohesiveness does not apply here because each question asked the number of years the superintendent worked with staffs of different levels. The answers to these questions are not expected to be consistent.

Results

Descriptive statistics of superintendents' authenticity, transparency, or information processing practices of their budget-building processes by these superintendents' demographic and educational background information as well as their career path were presented in Table 1. The Pearson correlation coefficients between school district superintendent leadership authenticity and the transparency of their district's budget-building practices was statistically significantly different from zero, $r = .32$, $p < .001$. Similarly, a statistically significant positive correlation was noticed between school district superintendent leadership authenticity and the information processing practices of their budget-building practices, $r = .24$, $p < .001$. The transparency of their district's budget-building practices was strongly correlated with the information processing practices of their district's budget-building practices, $r = .66$, $p < .001$.

Insert Table 1 about Here

There was no significant differences between fast-rising and non fast-rising superintendents with respect to the authenticity, transparency, or information processing practices, F (3, 220) = 0.64, $p = .59$, partial $\eta^2 = .01$. Specifically, fast-rising superintendents were not found to be statistically significantly different from non fast-rising superintendents with respect to leadership authenticity, t (222) = -0.35, $p = .72$. These two groups of superintendents were not statistically significantly different from each other on the transparency, t (222) = -1.05, $p = .30$, or the information processing practices, t (222) = -1.13, $p = .26$.

With the use of Wilks' Lambda criterion, the combined dependent variables (transparency and the information processing practices) were not significantly affected by the superintendents' self-described leadership styles, F (6, 416) = 1.51, $p = .17$, partial $\eta^2 = .02$.

No significant interaction effects were noticed between the superintendents' gender and educational background, F (6, 432) = 0.38, $p = .89$, partial $\eta^2 = .01$. Therefore, we proceeded to examine the main effects. There is no statistically significant differences between male and female superintendents on the combined dependent variables (authenticity, transparency, and information processing practices), F (3, 216) = 1.36, $p = .26$, partial $\eta^2 = .02$. However, significant differences were noticed for superintendents' educational background, F (6, 432) = 3.14, $p = .005$, partial $\eta^2 = .04$. Tests of between-subjects effects revealed that the participants were different on transparency, F (2, 218) = 7.26, $p = .001$, partial $\eta^2 = .06$. Post-hoc tests using Scheffe's method of multiple comparisons suggested that superintendents with doctorate degrees were more transparent than their counterparts with master's degrees. Superintendents with education specialist degrees were not statistically significantly different from

those with doctorate degrees or master's degrees with respect to the transparency during their budget-building processes.

Descriptive statistics of superintendents' authenticity, transparency, or information processing practices of their budget-building processes by school district information were presented in Table 2.

Insert Table 2 about Here

No statistically significant two-way or three-way interaction effects were noticed for the combined dependent variables (authenticity, transparency, and information processing practices) with school district size, type, and socioeconomic status levels. School district size did not affect the superintendents' authenticity, transparency, and information processing practices, F (6, 390) = 1.12, p = .35, partial η^2 = .02. School district's socioeconomic status was not affecting the superintendents' authenticity, transparency, and information processing practices either, F (6, 390) = 0.35, p = .91, partial η^2 = .01. Type of school district did not affect the superintendents' authenticity, transparency, and information processing practices, F (9, 475) = 1.09, p = .37, partial η^2 = .02. Post-hoc tests using Scheffe's method of multiple comparisons suggested large school districts were more transparent than small school districts and medium school districts were not statistically significantly different from small or large school districts with respect to transparency. No significant differences were noticed between small, medium, and large school districts with respect to authenticity and information processing practices. Similarly, rich school districts were more transparent than poor school districts and middle school districts were not statistically significantly different from poor or rich school districts. No significant differences were noticed between poor, middle, and rich school districts with respect to authenticity and information processing practices. No significant differences were noticed between urban, suburban, rural, and small town school districts with respect to authenticity, transparency, and information processing practices.

Finally, no statistically significant interaction effects were noticed for the combined dependent variables (authenticity, transparency, and information processing practices) for student performance level and per pupil expenditure level, F (12, 558) = 0.58, p = .86, partial η^2 = .01. Student performance level did not affect the superintendents' authenticity, transparency, and information processing practices, F (6, 422) = 0.46, p = .84, partial η^2 = .01. Per pupil expenditure was not affecting the superintendents' authenticity, transparency, and information processing practices either, F (6, 422) = 0.45, p = .84, partial η^2 = .01.

Discussion

The first research question dealt with leader authenticity and the level of transparency in school district budget-building practices. One of the four fundamental components of leader authenticity in the literature is relational transparency. It follows then that we looked for a positive correlation between superintendent authenticity and their budget-building practices. A positive correlation was found between school district superintendent leadership authenticity and the transparency of their district's budget-building practices. The more authentic the superintendents self-reported their leadership style,

the more they reported that their budget-building practices were inclusive of others, both inside and outside of the school organization. People were invited into the decision-making processes and there were communication systems established to inform interested employees and citizens throughout the budget-building practices.

The second research question dealt with leader authenticity and the degree to which information processing practices were used during budget-building. Another fundamental component of leader authenticity in the literature is balanced processing. Authentic leaders are unbiased, data-driven, and systematic in their decision-making processes. Similarly, we found a positive correlation between school district superintendent leadership authenticity and the information processing practices of their budget-building practices. Again, the more authentic the superintendents self-reported their leadership style, the more they reported using established written procedures, systematic data gathering, and methodical decision-making.

The conceptual framework of this study posited leader authenticity with budget-building practices of transparency, information management, staff cohesiveness, and demographic variables. Two of these constructs were found to be associated. The transparency of a district's budget-building practices was strongly correlated with the information processing practices of the district's budget-building practices. In other words, the more those superintendents reported their budget-building practices were open and transparent, the more they reported that their practices included established and known procedures as well.

The third research question sought explanation concerning the origins of variances across superintendent budget-building practices. In an attempt to find patterns among why some superintendents presided over more open or systematic budget-building practices than other superintendents, we examined their career paths and focused on their age when they attained their first principalship and their first superintendency. There were no significant differences between fast-rising and non fast-rising superintendents with respect to the authenticity, transparency, or information processing practices and the effect size was small. Thus, we did not find that school leaders who were picked earlier in their careers for principalships and superintendencies displayed measurably different budget-building practices from colleagues who rose more slowly through administrative ranks. Faster ascension might indicate accumulation of accomplishments and demonstrative competencies but we found no linkage to budget-building practices. This is consistent with our previous study (Authors, 20009a).

The next research question attempted to discern a pattern across our sample by looking at how superintendents self-describe their leadership styles. The combined dependent variables (transparency and the information processing practices) were not significantly affected by the superintendents' self-described leadership styles and the effect size was small. When asked to self-describe their leadership style, responding superintendents were given the choices of autocratic, laissez-faire, democratic, situational, servant, or transformational leadership style. The vast majority of our participating

superintendents (> 90%) chose from the last four leadership styles but chose quite equitably across those four styles: democratic (16%), situational (27%), servant (21%), and transformational (32%) respectively. Thus, how they self-describe their leadership style has very little linkage to how they preside over their budget-building practices. At the same time, their responses revealed a discernable pattern aligning authenticity to both transparency and information management processes as noted previously. One explanation for this apparent contradiction lies in the lack of definitional discreetness. Another possibility is that the construct of authenticity can be demonstrated across all traditionally defined leadership styles. This quandary certainly provides impetus for further study.

The last research question delved into leadership authenticity and other demographic measures. There was no statistically significant differences between male and female superintendents on the combined dependent variables (authenticity, transparency, and information processing practices), and the effect size was small. However, significant differences were noticed for superintendents' educational background with medium effect size. The participants were different on transparency. Superintendents with doctorate degrees were more transparent than their counterparts with master's degrees. Superintendents with education specialist degrees were not statistically significantly different from those with doctorate degrees or master's degrees with respect to the transparency during their budget-building processes. Thus, acquisition of a doctoral degree seems to be associated with a level of sophistication that sparks transparency in budget-building practices. This is tempered by participating superintendents' responses to questions regarding from where they learned their budget-building practices. Very few (9%) credit their university's professional preparation programs. Most (93%) credit on-the-job training for their strategies. These findings are consistent with previous work (Authors, 2009b).

Our data revealed that large school districts were more transparent than small school districts and medium school districts were not statistically significantly different from small or large school districts with respect to transparency. Similarly, rich school districts were more transparent than poor school districts and middle school districts were not statistically significantly different from poor or rich school districts. Perhaps the large school districts inherently have a level of complexity which lends itself more to having more people involved in budget-building practices than that which occurs in smaller districts. Larger, richer school districts generally have more staff which also raises the possibility of greater involvement of folks in district operations.

Finally, our level of data gathering on student performance level and per pupil expenditure level is a serious limitation to this study. Essentially, our student performance measure and per pupil expenditure measure were too gross (at, above, or below state average) and self-reported anonymously by the participating superintendents for us to have any confidence in drawing conclusions from them.

The study provides direction for future research. First, its limitations need to be addressed. In gathering data about authenticity, self-reports come with a host of problems, not the least of which is objectivity. Asking others (building principals, central staff members, Board of Education officers) to gauge their

superintendents' authenticity would generate meaningful data and concordance between leader and subordinates could be explored (Atwater, Ostroff, Yammarino, & Fleenor, 1992; Atwater & Yammarino, 1992; Bass, 1991; Bass & Yammarino, 1991; Bogler & Somech, 2004; Brutus, Fleenor & Tisak, 1999; Fleenor & McCauley, 1996; Lambert, 2002; Yammarino & Atwater, 1997). Use of archival data concerning school district demographics and student performance would add validity and objectivity as well as more discrete data rather than relying on the self-reports of the superintendents involved. Superintendents are very busy folks and creating incentives for their participation in future studies might increase response rates.

Future research efforts should be structured so as to focus on the relationship between leader behavior and organizational performance. Does authenticity affect student learning? Are administrative practices related to student test scores? Does what occur between leader and subordinates influence students? Answers to these questions would be valuable for practicing school executives, university preparation programs, and district governing bodies.

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Table 1. *Descriptive Statistics for Dependent Variables by Superintendents' Characteristics*

		Authenticity		Transparency		Information	
		M	*SD*	*M*	*SD*	*M*	*SD*
Gender	Male (*n* = 160)	4.39	0.33	3.71	0.40	3.85	0.45
	Female (*n* = 64)	4.49	0.25	3.76	0.33	3.88	0.39
Education	Doctorate (*n* = 128)	4.45	0.30	3.82	0.35	3.90	0.46
Background	Specialist (*n* = 50)	4.46	0.27	3.67	0.43	3.89	0.39
	Masters (*n* = 46)	4.25	0.36	3.52	0.32	3.70	0.36
Career Path	Fast-rising (*n* = 58)	4.40	0.29	3.68	0.34	3.79	0.36
	Non fast-rising (*n* = 166)	4.42	0.32	3.74	0.39	3.88	0.45
Leadership	Democratic (*n* = 36)	4.36	0.33	3.61	0.42	3.85	0.39
Style	Situational (*n* = 60)	4.36	0.34	3.74	0.40	3.87	0.38
	Servant (*n* = 46)	4.42	0.32	3.78	0.36	3.83	0.40
	Transformational (*n* = 71)	4.49	0.29	3.76	0.36	3.89	0.50

Table 2. *Descriptive Statistics for Dependent Variables by School District Characteristics*

		Authenticity		Transparency		Information	
		M	*SD*	*M*	*SD*	*M*	*SD*
Type	Urban (*n* = 20)	4.48	0.30	3.87	0.30	3.93	0.31
	Suburban (*n* = 27)	4.44	0.30	3.82	0.41	3.89	0.37
	Rural (*n* = 136)	4.41	0.32	3.70	0.39	3.87	0.46
	Small Town (*n* = 38)	4.37	0.32	3.64	0.33	3.77	0.42
Socioeconomic Level	Poor (*n* = 93)	4.42	0.33	3.69	0.37	3.88	0.38
	Middle (*n* = 114)	4.41	0.32	3.72	0.39	3.83	0.48
	Rich (*n* = 14)	4.42	0.27	3.96	0.34	3.97	0.37
Size	Small (*n* = 58)	4.32	0.35	3.59	0.36	3.82	0.36
	Middle (*n* = 137)	4.44	0.31	3.74	0.39	3.86	0.47
	Large (*n* = 26)	4.49	0.23	3.90	0.29	3.96	0.35
Student	Below Average (*n* = 64)	4.38	0.32	3.67	0.33	3.76	0.38
Performance	At Average (*n* = 40)	4.42	0.33	3.73	0.38	3.88	0.46
	Above Average (*n* = 118)	4.43	0.31	3.73	0.40	3.88	0.43
Per Pupil	Below Average (*n* = 75)	4.41	0.30	3.73	0.38	3.83	0.50
Expenditure	At Average (*n* = 74)	4.42	0.34	3.67	0.38	3.86	0.39
	Above Average (*n* = 73)	4.42	0.31	3.76	0.38	3.87	0.39

DOCUMENTING ASSURANCE OF LEARNING (AOL) DATA OF TEAM WORK SKILLS ACQUISITION USING THE BLACKBOARD CMS IN THE UNDERGRADUATE MARKETING MANAGEMENTCLASS

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ABSTRACT

Accrediting agencies such as the AACSB now require that member and candidate schools document how skills development, such as team work skills, are delivered under Assurance of Learning (AoL) rubrics. This paper details the use of one course management system (CMS), Blackboard, in helping faculty organize, manage, and document student team work skills development in a required Marketing Management class and so provide supporting data for AoL rubrics. Key advantages of the Blackboard CMS include asynchronous collaboration, tracking features for monitoring individual contributions to group work, and a permanent record of participation to aid faculty in assessing individual and group performance for providing illustrative data to accrediting agencies on how the school measures the development of team building skills.

Background and Overview

Speaking in a recent interview at the Colombia School of Business, financier Warren Buffet was asked about the single most important business skill MBA students could acquire. Without hesitation, Buffet named communication skills as the most important, especially in relation to getting teams to work together towards a common goal (Buffet, 2009).

While business leaders such as Warren Buffet recognize the value of communication and team building skills as a key ingredient of business success, the AACSB has specifically named the acquisition of these skills as important enough to warrant their identification among required areas for coverage under the new rubric of accreditation, "assurance of learning" (AoL). Of eleven named areas for AoL attention, the marketing curriculum is involved as a matter of discipline in nine of those areas, most especially communications and by extension team-based skills (AACSB, 2007; Sampson and Betters-Reed, 2008).

Underscoring the team-based skills needs of business, both oral and written communicationare emphasized by the Association to Advance Collegiate Schools of Business guidelines (AACSB, 2009). Previously, such emphasis often focused on standardizing input measures of learning. For example, noting the difficulties in developing cross-functional and team-skills, Rollag (2008) cites the practice at Babson College of requiring students to take 3 basic classes as a cohort, with an emphasis on learning and practicing team-skills in different functional areas. Extending this input focus to the use of IT, Garska (2008) reports that MBA faculty at Yale University use web-based templates to teach students case analysis writing. Such "best practices" can provide business faculty across disciplines with AACSB sanctioned approaches to learning inputs.

However, the AACSB is increasingly looking to schools of business to provide output measures of learning, referred to as "assurance of learning," or AoL (AACSB White Paper, 2007). Of these, the most often used are course-embedded measures, in which the assessment measure is inherently part of the course. As such, these measures are transparent to the students as they do not involve something external to the course, such as stand-alone testing after the class is over or performance in other external venues, such as business presentations to in non-academic settings.

A necessity of AoL measures is that they have a permanent record of performance because they are used both to assess student performance and to assess program effectiveness:

> "Course-embedded" measures relate to specific course assignments in a class where the students' work on that assignment may also be used for outcomes assessment purposes. In the course embedded method, course assignments or other student demonstrations from a course are evaluated for the purposes of AoL through a separate, distinct process that is driven by criteria established by the faculty (plural). For example, if a case from a marketing class is used to assess students' writing skills for AoL purposes, it will be evaluated twice: once according to the professor's criteria for a case grade for the course, and a second time according to the faculty's (plural) criteria for effective written communications. [AACSB White Paper, 2007, p.9]

This dual nature of assessment suggests that IT can play an effective role in the accreditation AoL process. The current paper expands upon this interest in developing effective collaboration skills and the use of IT in the workplace by detailing the use of the Blackboard Course Management System (CMS) software in helping students in a required Marketing Management course develop and document team-based planning, collaboration, and group communication skills.

Previous research has noted the application of CMS technology for other courses, such as marketing principlesand business communications (Hershey and Wood, 2006, 2009), or the need to document AoL at the marketing program level (Sampon and Better-Reed, 2008), but using CMS technology for AoL issues for marketing management remains relatively undeveloped. Yet for many programs, Marketing Management is the capstone marketing course, requiring students both to integrate concepts across the marketing program (such as marketing research, sales management, and knowledge of consumer behavior in planning). Integral to this integration is the need for effective work group skills, including organizing, delegating, contributing, and communicating knowledge, both within the group and through written and oral presentation of a comprehensive term project. Accordingly, the Marketing Management course is an ideal subject for developing AoL metrics through use of the CMS technology as a benchmark for extending what is developed to the program level. The Blackboard CMS provides an easy to use and easy to modify platform for developing and documenting team and work group skills.

Team Work Features of Blackboard

Interest in using IT solutions to provide innovate approaches for delivering marketing content is not new. For example, an entire issue of the *Marketing Education Review* is dedicated to the topic of technology integration in the teaching of marketing (Malhotra, 2002) What is new is the adoption of IT for AoL concerns, and the Blackboard CMS provides ready-to-use features that can be seamlessly integrated into the Marketing Management course design. For those already familiar with Blackboard, our discussion below moves immediately to the aspects of the CMS that support the documentation of AoL concerns. For instructors new to Blackboard, a brief overview of Blackboard is provided in Appendix A.

For those already working with Blackboard, four key features can be used in support of AoL: asynchronous collaboration, tracking features, a permanent record of group member's contributions, and a mechanism for helping faculty and administrators collect data for accrediting agency reports. Each of these features is discussed in turn:

Asynchronous Collaboration

Among the most valuable features of the Blackboard CMS is the ability of students to work in asynchronous collaboration. Students in today's business schools are increasingly non-traditional. Compared to traditional 18-22 year old full time resident students, many business students today are

older, married, divorced, working full or part time away from campus, and/or have children or family obligations that make scheduling out of class, face-to-face group meetings difficult. But the Blackboard CMS creates meeting rooms that are always available and in which students can "meet" and "converse" at their individual convenience, making much of the logistics of traditional meetings less time intensive.

For purposes of AoL, the Blackboard CMS provides a means whereby Marketing Management students can schedule and attend virtual meetings in other than real-time expands the ability of the course to deliver real value. By providing asynchronous collaboration, non-traditional students can still learn and practice working with others to solve course problems, rather than simply studying alone.

Tracking Features

Another feature of the Blackboard CMS is the ability to track how many times each feature is used and for how long. For example, if a group assignment requires a group meeting of 30 minutes to set an agenda for a problem-solving exercise, then a discussion board can be set up to log the amount of time each person is present. A chat room can accomplish the same thing, though the chat room used this way necessarily requires synchronous participation. To make use of the asynchronous feature within a time requirement, the professor should convert the amount of time discussion should take into some number of words or paragraphs. A bonus feature for faculty is that the data generated by this feature can be used to develop research for publication comparing variables of interest across sections.

For purposes of AoL, the tracking feature helps document participation in the collaborative effort of the roup. Team work skills after all, need input by all team members. While assessing the quality of a given individual's contribution may not be directly addressed, the tracking features documents that all students did or did not meet a minimum threshold for time on task. This reduces the incentive for free-riding, as the software itself provides an objective record of whether or not all members participated in a given group exercise.

Permanent Objective Record of Group Member Contribution

Flowing from these first two features is the creation of a permanent objective record of each group member's contribution. Tracking features can be enabled for all Blackboard tools, so a professor so inclined can verify whether a student has visited tools placed in other buttons, logged in to required chat rooms, provided contributions to a discussion board, and of course, taken online examinations when required. By making such a record of course participation objective, the professor can take much of the guess work out of determining the value of a student's actual work in the class. Likewise, as with the tracking feature above, this record can be used for analysis of student outcomes for pedagogical research. Finally, such an approach provides the means necessary for creating a permanent record whereby the same material used by the individual faculty member to assess student performance can also be used at the program by the faculty as a whole to document assurance of learning as called for in the guidelines (AACSB, 2007).

Meeting Accrediting Agencies Needs for Data

Finally, because all the record keeping functions of the Blackboard CMS are digital, it is relatively easy to access those records across courses to provide evidence of effectiveness for reports to accrediting agencies. This is especially important for AoL measures, as accrediting agencies like the AACSB, audit AoL at the program level, not the course level. Thus, while team work skills are a output of the program, the faculty must necessarily decide where inputs to that skill development will be placed. This is additionally useful in Marketing Management, where presumably team work skills are improved upon building on discrete exercises in other courses. For example, faculty can trace CMS records across a business communication course, the marketing principles course, and then into Marketing Management on a group presentation design. Such features are consistent with AoL practices for course-embedded measures (AACSB 2007).

Conclusion

The Blackboard CMS can enhance group learning by providing new and more flexible means for students to pool their collaborative efforts for group assignments. By providing a forum for asynchronous collaboration, the Blackboard CMS can help alleviate time constraints, allowing students to participate in meeting within a given time period, such as a day, while not requiring the coordination of individual schedules. The tracking feature of the Blackboard CMS also provides an incentive to students to log in their "time on task" that can be verified for credit by the professor. This particular feature may stimulate a larger context of group marketing management skill development if students who are normally shy about speaking up during an in-class group exercise find that the online format allows them to show their communication skills without the imagined risks that public speaking seems to bring. The permanent record of all meetings allows professors to judge group member "participation" rather than relying on self-reports by students. Finally, as professors and administrators prepare data in support of how they fulfill their mission to accrediting agencies, the record keeping function of the Blackboard CMS easily converts to tabulation in school reports (Dubas and Hershey, 2005, 2006).

APPENDIX A: Overview of the Blackboard CMS

The Blackboard Course Management System (CMS) software is a popular distance education course delivery system in use at many US universities. The typical user interface consists of nine default course buttons along the left column with an announcements page showing. The default buttons are, in order, announcements, course information, staff information, course documents, assignments, communication, discussion board, external links, and tools. Each button accesses additional course management tools relative to that button's overall heading. While this paper discusses use of these default options, it is important to note that professors can customize the layout and presentation of the Blackboard CMS to create additional buttons, rearrange their presentation, or show fewer or more buttons as desired.

The buttons allow professors to place information students need throughout the course in an easy to access digital storehouse. For example, the course syllabus and PowerPoint slides for lecture can be placed under course documents. Similarly, examinations can be placed in the assignments button. Additionally, the professor can choose to have any or all such documents accessible on demand, throughout the course, or for specific time periods of limited availability, such as a timed mid-term exam.

However, the Blackboard CMS provides more than a convenient online storehouse for course documents. It also provides a flexible infrastructure that can be used by the professor to design a more robust learning environment tailored to meet course-specific goals than is possible with traditional chalk and talk lecture formats alone. For example, most business courses require some portion of the course to be based upon group collaboration in order to help students apply the concepts of business in group setting in the workplace. This is especially true of the marketing management course.

The marketing management course often entails the need for student groups to work together outside of class on assignments ranging from small group dynamics exercises, to decision-making assignments, to group presentations of business concepts such as seminar selling and team selling. For these types of assignments, the Blackboard CMS can be utilized to improve student learning by creating an infrastructure for each group not available in traditional lecture formats.

Under the Communication button, the Blackboard CMS offers a number of default features for facilitating group meeting and group work. The seven default folders under Communication include announcements, collaboration, discussion board, group pages, messages, and roster. For the professor, the Blackboard CMS can be "populated" with specific groups for specific assignments. For example, within the group pages folder, the professor can create as many groups for an assignment as are needed for the class. Thus**,** if the class has 25 students, each student assigned to one of five groups, then the professor creates five different group pages of five students each. Inside these group pages, the professor can enable a number of default collaboration tools including topic-specific discussion boards, chat rooms, file exchange, and email functions that are available ONLY to those in the group. This feature allows group members to have their own "conference room" available on demand and in whose digital space they can share and develop their projects without interference from the work of other groups.

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STRATEGIC THINKING SKILLS AND UNDERGRADUATE STUDENT ACADEMIC SUCCESS

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ABSTRACT

This study tested the hypothesis that successful undergraduate students think differently than less successful undergraduate students. Three cognitive processes associated with strategic thinking were identified as potential distinguishers between successful students and less successful students: reflection, systems thinking and reframing. Academic success was measured by student retention rates, grade point average, graduation rate, and time to degree. Full results will be reported in the final paper as analysis of data is just concluding. However, two tentative conclusions were drawn from preliminary analyses. First, the use of the three strategic thinking processes could significantly distinguish different thinking capacities of students. Second, thinking skills were significantly influenced by student age, gender, and educational background, undergraduate major, and full or part time status. The relationship of use of strategic thinking skills and success factors was not attempted because the data were not available at this time.

Keywords: strategic thinking skills, undergraduate student academic success

Introduction

The purpose of this research is to examine the relationship of a student's usage of strategic thinking skills and their academic success in undergraduate degree programs. For students in today's colleges and universities, the concept of strategic thinking may be somewhat new, but never the less critical to their eventual academic success (Bonn, 2001; Zins, Weissberg, Wang, & Walberg, 2004). This point was emphasized in an American Psychological Association report suggesting that "The successful learner can create and use a repertoire of thinking and reasoning strategies to achieve complex learning goals (APA, 1993, 1997 as cited in Zins, et. al. 2004 p. 29-30).

This study suggests that student ability to think in a strategic manner can contribute to higher levels of retention, grade point averages (GPA), graduation rate, as well as the time in which it takes to earn a degree; what we call academic success. In this study, thinking in a strategic manner means the capacity of students to use three cognitive skills (systems thinking, reframing and reflection). The assumption guiding this work is that students with greater command of these skills at the beginning of their university experiences will remain in college and move toward their degree at a faster rate than students who do not possess these skills at entrance. Based on this assumption the primary research question is: Does student use of strategic thinking skills predict academic success?

Theoretical framework

Cognition is the way thinking is done. Mental or cognitive skills enable individuals to acquire knowledge by manipulating ideas and processing new information and beliefs in their minds. Information, memory, reasoning, application of schemas and biases, making attributions and thinking-through a problem are examples of cognitive processes. The cognitive approach considers how ideas, thoughts and mental representations develop and are used by individuals to make a mental connection between seemingly disparate events and affects change in beliefs, values and direction (Senge, 1990; Gardner, 1995). The mental connections enabled by these skills form the foundation for enhanced performance and continuous learning.

Many important cognitive processes have been identified in the literature such as: chunking (Simon 1957, 1999; Newell and Rosenbloom, 1981; Agor, 1988), cognitive reduction (Simon, 1957), cognitive heuristics (Stanwick, 1996), cognitive maps/schemas (March and Simon, 1958; Simon 1957; Stanwick, 1996), mental imagery (Anthony, Bennet, Maddox, and Wheatley, 1993; Stanwick, 1996), creativity (De Pree, 1989), mental models and schemas (Senge, 1990; Weick, 1995; Riedel, Morasth, and McGonigle, 2000), critical thinking (Baron, 1994; Halpren, 1996; Cohen, Thompson, Adelman, Besnick, Shastri, and Riedel, 2000; Riedel, et al., 2000), pattern recognition (Simon, 1957, 1999; Cohen et al., 2000), reframing (Morgan, 1987; Bolman and Deal, 1994), reflection (Dewey 1933; Argyris and Schön, 1978; Schön, 1983), and systems thinking (Senge, 1990), Moreover, some have argued (e.g., Perkins, 1995) that there may be too many strategies for the decision maker to remember, consider, select, and apply.

The literature is replete with knowledge and indicators of cognitive capability. The research is less clear on definition and measurement of the indicators. There is a paucity of instrumentation measuring the development of student's mindset. Although there are a number of tests available that look at aspects of strategic thinking, e.g. creativity (Hocevar and Bachelor, 1989), divergent thinking (Torrance, 1974), critical thinking skills (College Board, 2009) more comprehensive testing measures needed to be developed. Such research would lead to the identification of selection criteria which best predict long-term strategic thinking ability and eventually academic success.

A significant stream of research regarding ability to think and its relationship to successfully navigating complex and ambiguous environments has been produced. Pisapia, Reyes-Guerra and Coukos-Semmel

(2005) studied the relationship of thinking and success in complex situations. It was thought that individuals who can understand their strategic context and remain confident, competent and flexible can negotiate their environment more easily. In these environments individual's (a) conceptual ability is indispensable in recognizing interdependencies, interrelationships and patterns, and (b) ability to make consequential decisions requires both powers of analysis and intuition.

To test their assumption, they identified the constructs needed to measure strategic thinking skills. Their cognitive skills include the use of reflecting, reframing, and systems thinking which assist individuals in (a) reframing situations so they become clearer and understandable; (b) reflecting and developing theories of practice which guide actions; and, (c) thinking in more holistic ways. They also aid individuals in seeing events and problems in terms of concepts which are useful ways of thinking effectively about the problem. These variables comprise the predictor variables used in this study.

Systems thinking in this study refers to the student's ability to see systems holistically by understanding the properties, forces, patterns and interrelationships that shape the behavior of the system, which hence provides options for action (Senge, 1990). Reframing refers to the student's ability to switch attention across multiple perspectives, frames, mental models, and paradigms to generate new insights and options for actions (Bolman & Deal, 1997). Reflecting means the ability to weave logical and rational thinking, through the use of perceptions, experience and information, to make judgments on what has happened, and creation of intuitive principles that guide future actions (Argyris & Schön, 1996; Schön, 1983).

Pisapia, Reyes-Guerra, and Coukos (2005) believed that when applied, three cognitive processes combined would produce "strategic thinking." Strategic thinking would aid in creating a mindset that could help individuals make sense of the complexities facing their organizations and enable them to identify, predict, respond and adapt to non-linear change opportunities and challenges, allowing them to be more successful in their preparation programs and career roles. They hypothesized that strategic thinking might differentiate between successful and less successful individuals.

The use of these three skills has been studied in leaders. Chilcoat (1995), for example, suggests that effective leaders demonstrate more complex mental processes than ineffective leaders. Moreover, Leithwood and Steinbach (1992) believe that efforts to improve the effectiveness of educational leaders may be more productive if more consideration were given to improve the quality of thinking and problem solving rather than simply focusing on actions or behaviors. Moreover, Schreyogg and Noss (2000) and Weick and Quinn (1999) support the claim that there is an over reliance on linearity which does not fit with today's realities of "fast and furious change."

Pisapia, Reyes-Guerra and Yasin (2006) conducted a study of 150 leaders from profit (40%) and non-profit (60%) organizations. The study determined that (a) systems thinking is significantly related to leader effectiveness, (b) the use of the three systems thinking skills could distinguish between more and less successful leaders, (c) while systems thinking explained most of the variance in the success variable, there was a cumulative impact of the use of all three processes.

Pang, & Pisapia, (2007) conducted a study of 543 Hong Kong school leaders. They found that (a) the use of the strategic thinking could distinguish between more and less successful leaders, (b) school leaders' understandings of system dynamics had significant effects leadership effectiveness, and (c) while systems thinking explained much of the variance in the success variable, there was a cumulative impact of the use of all three capabilities.

Zsiga, (2008) applied the strategic thinking framework to 471 YMCA directors and found evidence (a) of a positive relationship between strategic thinking and leader effectiveness, (b) reframing and leader effectiveness, (c) correlations between strategic thinking and leader effectiveness were moderated only by ethnicity, and (d) a direct association of the strategic thinking skills scale with the self directed learning scale.

Penny, (in process) applied the framework to 200 Fire Chiefs and found that (a) education level and length of service and age were positively associated with higher use of strategic thinking skills, (c) no significant relationship was found between use of strategic thinking skills and use of technology.

The use of strategic thinking skills has also been studied in graduate students. Pisapia, Pang, Hee, Lin, and Morris (2009) conducted a comparative study of 328 students in graduate administration programs in Hong Kong (HK), Shanghai, Malaysia (2 sites, Kuala Lumpur and Borneo), and the United States of America (U.S.A.) and found that (a) the use of strategic thinking skills were found in all locations. Examination of the means for each location indicates that Borneo used systems thinking and reflecting skills significantly more than Shanghai and HK. The USA used systems thinking skills significantly more than Shanghai and reflecting significantly more than HK and Shanghai. HK used system thinking significantly more than Shanghai. Kuala Lumpur (KL) used systems thinking and reflection significantly more than Shanghai. Shanghai used systems thinking and reflecting skills significantly less than all other locations. The second finding was that the variance in the use of strategic thinking skills use is more a function of age and gender of the respondents, rather than location. Gender produced no significant effects. Student academic success was not measured. These data present a potential age bias. Reflection and systems thinking skill usage rises incrementally for each location, as one gets older. These data present a potential age bias. Reflection and systems thinking skill usage rose incrementally for each location, as one gets older. An alternative explanation is that rather than an age bias, the age variable could be a proxy for experience and/or education, which are likely moderators of thinking skills. It appears that as age raises so does the use of reflection and systems thinking. This finding has implications for the teaching of these skills in entry college programs as well as throughout the early career years.

In summary, statistical analyses of STQ administrations conducted by Florida Atlantic University researchers in the U.S.A. and colleagues in Hong Kong, Shanghai and Malaysia have yielded seven major impressions. First, strategic thinking is strongly associated with self reported effectiveness. That supervisors and managers in our samples score lower than the executives as expected. However, the high performers (the top 20% on effectiveness scores) in each management category used these mental

skills significantly more often than less successful managers. Second, there is a cumulative impact when the three capabilities which form the strategic thinking construct are used. Third, the strength of the relationship between strategic thinking and leader success increases as leaders use the three dimensions in tandem. Fourth, the use of these skills by graduate students in the United States and Malaysia is similar, and different from usage in China and Shanghai. Fifth, there is a significant relationship between strategic thinking capabilities and self directed learning. Sixth, the use of these skills improves with age and experience – the younger you are the less you use these skills. Seventh, the STQ appears free of cultural and gender bias; but reveals an age bias.

Method

This study proposes that student ability to think in a strategic manner can contribute to higher levels of student academic success. The study employed a quantitative non-experimental design. The strategic thinking skills - systems thinking, reflection, and reframing were the selected predictor variables. Student success was measured through student retention rates, grade point average, graduation rate and time to graduation comprised the criterion variable. The influence of participant demographics (gender, ethnicity, nationality, age, educational preparation, undergraduate major, full or part-time status, country born in, number of countries lived in, and work history) were also studied to determine their impact on the use of strategic thinking skills and its relationship with academic success.

The strategic thinking questionnaire (STQ_{v6}), (developed by Pisapia & Reyes-Guerra, 2008) was used to collect data on participant use of three thinking skills (predictor variables): reflection, reframing and systems thinking revealing the test takers ability to think flexibly, conceptually and strategically. The STQ asks respondents how often they use these skills when confronted with problems, dilemmas, and/or opportunities. The base STQ is accompanied by 16 demographic questions for a total of 69 items

The strategic thinking questionnaire (STQ) is a self report instrument that includes two indicators: (a) Omission Rate (number of omitted responses) and an (b) Inconsistency Index (degree of response inconsistency) to overcome validity issues with such instruments. The STQ domains measured by these scales were previously described. The skills embodied in systems thinking, reframing and reflection reveal the participants ability to think flexibly, conceptually and strategically. The interpretation of these dimensions provides participants with a deeper understanding of their own mental processing skills. However, in daily use, the three cognitive skills overlap considerably; our experience is that they are best taught singularly. The STQ, has demonstrated in statistical evaluation acceptable reliability scores and has demonstrated validity through a reliable factor structure. Based on factor analysis, total STQ (which describes overall command of strategic thinking skills) includes the following two factorial components: Systems Thinking and Reflection (Pisapia, Pang, Hee, Lin, & Morris, 2009; Pisapia 2009). Although factor analysis did not confirm the existence of a “Reframing” factor, a decision was made to retain this scale to provide the end-user with additional information regarding this facilitator of strategic thinking capacity. Therefore, scale coding and analyses can be conducted on theoretical and empirical scales.

Average to above average scores on the STQ suggest that the respondent is effective in using the strategic thinking skills, meaning that he or she is most likely to possess the skills to be a strategic thinker. The higher the scores, the more positive the prediction for effective functioning in meeting environmental demands and pressures. On the other hand, an inability to be an effective strategic thinker is suggested by low scores.

Camara and Echternacht, (2000) suggest that "There is no one agreed upon measure of college success." Several measures have been used in studies: course, grades, persistence, teacher ratings, FGPAs, graduation. In this study, the criterion variable was undergraduate student academic success as measured by retention (Tross, Harper, Osher & Kneidinger, 2000), graduation rates, Freshman GPAs (Camara & Echternacht, 2000; Tross et al. 2000; Wolfe & Johnson, 1995), and time to graduation. This study seeks to determine if the results on the STQ relate to student success in academic programs. Few higher education metrics have attracted as much controversy as the institutional graduation rate. Critics say it relies heavily on student characteristics and actions; advocates such as American Association of State Colleges and Universities maintain that it is a legitimate accountability indicator when combined with other measures. There is one thing that is commonly agreed upon; the graduation rate is here to stay. This study adds four variables for study; retention rate, time to completion, graduation rate, and grade point average and moves the conversation toward efficiency and learning outcomes.

The criterion variable data was gathered from University archives. Participant identification was required to allow access to student records to gather GPA and time to completion data from pre-existing university data. However, all reporting was done in the aggregate to protect the subjects' privacy.

A random sample of 1000 entering freshmen (participants) at Florida Atlantic University in the fall of 2009 was selected for study. To date 400 participants provided information and are the cohort used for analysis in this report. Participants were asked to complete the 53 item Strategic Thinking Questionnaire (STQ). The administration of the STQ took place in a core course during their first semester in a degree program and took approximately 20 minutes to complete. Participation was voluntary. There is no penalty for not completing the questionnaire and participants were free to withdraw from the study at any time.

The study is limited to a four year time frame and focuses only on entering freshmen as opposed to transfer or continued enrollment students. Findings in this preliminary report are based solely on usage of the strategic thinking skills as they are influenced by student demographics and background variables in the study cohort selected for study because academic success data are not available for this cohort at this time. Correlational and regression testing and effect sizes were calculated to determine if significant differences existed strategic thinking skills and the demographic data provided by students.

Conclusions

Full results will be reported in the final paper. Two tentative conclusions were drawn from preliminary analyses. First, the use of the three strategic thinking processes could significantly distinguish different thinking capacities of students. Second, thinking skills were significantly influenced by student age,

gender, and educational background, undergraduate major, and full or part time status. Full results will be reported in the final paper. The relationship of use of strategic thinking skills and success factors was not attempted because the data were not available at this time.

Importance

Understanding what makes students successful in academics is essential, not just for the students themselves, but for the universities which hope to retain them. That is not to say this information would not have an effect on the manner in which student proceed through their academic careers. By being able to learn from past experiences, utilize problem solving skills, and looking for new approaches to old questions, the use of strategic thinking, has the capacity to change the way students view their academic careers.

The examination of the relationship of student cognitive skills and student success has largely gone unnoticed in the empirical literature. This circumstance has created a vacuum in an area of student and curricula development. The importance of this study is that if a relationship between student success and strategic thinking skills can be established it will have implications for secondary and post secondary education as well as individual students. This knowledge would lead to ongoing efforts of theorists and practitioners who seek to uncover methods for identifying early academic interventions to maximize students' potential for learning. For secondary education, the curriculum and teaching methods, which have become more scripted, will have to be reviewed. For Universities, the results could influence admission decision, remedial programs, and the core curriculum. For university administrators and curricular designers, the results will provide better data regarding predictors of performance, persistence, and completion that go beyond current data. For students, command of these skills should enable them to make sense of complexities facing them during their immersion into university life and enable them to identify, predict, respond and adapt to non-linear change opportunities and challenges that confront them as they progress toward their degrees and pursue their careers.

Furthermore, this study is foundational meaning that further research can be conducted concerning these three cognitive leadership skills used in different types of higher education settings and degree programs. From these studies, it is hoped that professional development modules can be developed and data bases in order to further the effective use of these strategic thinking skills.

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THE COGNITIVE DIFFERENCE IN THE USE OF WORKING MEMORY IN READING ACROSS SCRITPS

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ABSTRACT

Empirical investigation of the potentially cognitive differences in reading across scripts is a burgeoning area of research. In this paper, we reviewed this limited literature, focusing on the role of working memory (WM) in reading logographic Chinese versus alphabetic reading English at the word level. Specifically, using the multiple-component WM Model (Baddeley, 2000; Baddeley & Hitch, 1974) as the theoretical framework, we analyzed and synthesized current empirical research from both neuropsychological research and behaviorally-based research. Based on the review, we concluded that word reading in Chinese and in English make differential use of working memory, with the former more reliant on visual-spatial WM and the latter more dependent on verbal WM. At the end of this paper, we also propose a study that can empirically examine this important cognitive difference in reading logographic Chinese and alphabetic English.

Key words: word recognition, working memory, reading instruction

Introduction

Is it possible that a dyslexic, an individual who has impaired ability to read written words, develops normal or above normal reading ability when read in a second language? As surprising as it may sound, the answer is yes. In a recent study, Wydell and Butterworth (1999) reported a case that supported the potential dissociation between people's reading ability in their native language and their second language. It was found that a 16-year-old bilingual boy, who is a dyslexic in English - his native language, can read logographic Japanese kanji and syllabic kana with a performance equivalent to that of Japanese undergraduates. A similar case was also found in Chinese/English bilingual readers (Ho & Fong, 2005). Despite being a Chinese dyslexic, a Chinese/English bilingual boy showed an above average performance in English word reading tests (Ho & Fong, 2005). Cases like these raise interesting issues regarding reading across languages. What factors underlie dramatically different performance of people when they read across languages? Are there any differences in cognitive mechanisms underlying reading across languages? If so, which cognitive mechanisms are different? As an attempt to explore these issues, this paper reviews existing empirical findings in reading two significantly different scripts: logographic Chinese and alphabetic English. Specifically, the current study examines the issue of whether reading logographic Chinese and alphabetic English involves varying degrees of visual-spatial working memory (WM) and verbal WM at the word reading level.

The constructs of visual-spatial WM and verbal WM in the present paper are conceptualized under the framework of Baddeley's Working Memory Model (Baddeley, 2000; Baddeley & Hitch, 1974), which also provides the theoretical framework of the entire review. According to this model, WM is a memory system that provides temporary storage and manipulation of information, consisting of the central executive, the phonological loop, and the visual-spatial sketchpad. The central executive is a domain-general system functioning as a coordinator and regulator of attentional resources within WM. The phonological loop and visual-spatial sketchpad, as two domain-specific slave systems of the central executive, are responsible for temporarily storing and manipulating verbal and visual-spatial information, respectively (Baddeley & Hitch, 1974). In the current study, visual-spatial WM is defined as the system consisting of the visual-spatial sketchpad and central executive, which jointly implement the function of temporarily manipulating and storing visual-spatial information in cognitive activities (Kondo & Osaka, 2004). Verbal WM refers to the system consisting of the phonological loop and central executive, which together are responsible for temporary retention and manipulation of verbal information (Kittler, Krinsky-McHale, & Devenny, 2004).

The present paper is organized as follows. First, we briefly analyze the significant linguistic differences between the Chinese and English systems that may cause the potentially different reliance of visual-spatial WM and verbal WM in Chinese and English word reading. We then review current empirical findings on the involvement of WM in Chinese and English reading from four different areas, including neuroimaging research, dyslexia research, behaviorally-based comparative studies, and behavioral

reading studies with priming paradigm. Finally, we propose a study that can provide empirical examination for the primary conclusion that we make in the paper.

The Chinese and English Writing Systems

Linguistically, logographic Chinese is quite different from alphabetic English. The significant linguistic differences between the two writing systems may cause Chinese and English readers to resort to somewhat different cognitive processes in word processing during reading activities, which may fundamentally contribute to the potentially different involvement of WM in reading these two scripts.
A significant difference between Chinese and English words lies with their visual complexity. Unlike English words that have a simple *linear* structure with letters being laid out from left to right, Chinese characters have multiple and more complex internal structures. Apart from the left-right structure, Chinese characters also have top-down, inside-outside, half circling, and other types of internal structures (Bolger, Perfetti, & Schneider, 2005). The multiple and more complex structures of Chinese characters may inherently invite a more elaborated visual analysis when readers decode Chinese words during reading.

In addition to visual complexity, logographic Chinese is also significantly different from alphabetic English in terms of the sound principles and sound-word associations. Consisting of various combinations of 26 abstract letters, English words can be sounded out easily, whether readers know the meanings of the words or not. However, the opposite case is applied to Chinese reading. Chinese words are mostly made of thousands of meaningful radicals (i.e., stroke patterns having semantic meanings) with arbitrarily assigned pronunciations. Therefore, it is common that Chinese readers can often ascertain the correct meaning of an unknown Chinese character but experience considerable difficulty to sound it out during reading. In addition, Chinese is full of homophones. It is quite typical in the Chinese writing system that a spoken sound is simultaneously associated with numerous written characters (in some cases, above 20 characters). As a result, phonological representations of Chinese words often can not serve as unambiguous codes in reading processes as the case in English reading. These two linguistic differences between Chinese and English suggest that it may be possible that reading logographic Chinese may, to a less extent, rely on phonological processing in word reading compared with reading alphabetic English.

Based on the above linguistic analysis of the two writing systems, we reason that reading logographic Chinese and alphabetic English may to a different degree involve visual-spatial WM and verbal WM in word processing. More specifically, we proposed that *corresponding to the significant linguistic differences between the two scripts, reading logographic Chinese may to a greater degree require the involvement of visual-spatial WM in word processing, whereas reading alphabetic English may demand more involvement of verbal WM at the word reading level.* A review of current empirical findings shows that this proposed notion is nicely echoed and supported by existing empirical research. In the next section, we review these empirical findings in detail.

The Literature Review

The notion that reading logographic Chinese to a greater level involves visual-spatial WM, whereas reading alphabetic English is more dependent on the involvement of verbal WM has been supported by convergent evidence from different areas, including neuroimaging research, dyslexia research, behaviorally-based comparative studies, and behavioral reading studies with priming paradigm. These findings are reviewed as follows.

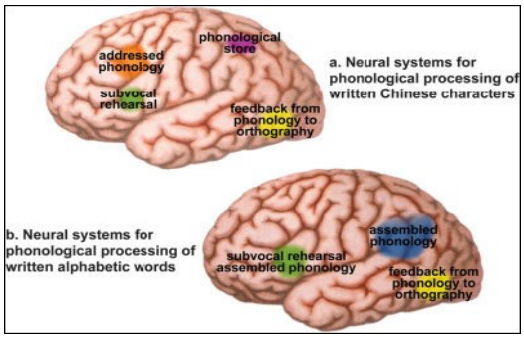
Evidence from Neural-Imaging Research

A comparison of neural-imaging data of Chinese and English word reading has strongly suggested that visual-spatial WM may, to a greater level, be involved in Chinese word reading than English word reading. Several brain imaging studies (e.g., Tan, Liu, Perfetti, Spinks, Fox& Gao, 2001; Tan, Laird, Li, & Fox,, 2005) have shown that recognizing Chinese characters involves a heavy involvement of a few right hemispheric areas, including the right frontal pole (BA10/11), frontal operculum (BA 47/45), dorsolateral frontal gyrus (BA 9/44), the superior and inferior parietal lobules (BAs 7, 40/39), and visual form areas. In contrast, these right hemispheric areas were rarely reported to be associated with the neural network of English word recognition (Bolger et al., 2005). Previous research has demonstrated that the right BAs 7 and 40/39 were routinely activated in spatial WM tasks (e.g., Courtney, Petit, Maisog, Ungerleider, & Haxby, 1998; Haxby, Ungerleider, Horwitz, Rapoport, & Grady, 1995). And BA 10 is involved in episodic memory processes by which people retrieve spatial orientation of perceived objects (Lepage, Ghaffar, Nyberg, & Tulving, 2000; Haxby et al., 1995). Taken together, the unique association of the above right hemispheric areas with the neural network of Chinese word reading suggests that reading logographic Chinese may demand a greater involvement of visual-spatial WM relative to reading alphabetic English. According to Tan and his associates (Tan et al., 2001), the activation of these distinctive right hemispheric areas in Chinese character recognition tasks is presumably because these cortical areas are needed to engage in perceiving the spatial locations of radicals and strokes of Chinese characters during recognition. In contrast, linear English words may not necessarily need a similar two-dimension spatial analysis of words during recognition.

As far as verbal WM is concerned, it seems that this WM subsystem is to a greater level involved in reading English relative to Chinese at the word reading level. In a comparison of the neural-imaging data of word reading in Chinese versus English, it is found that the common areas in the neural circuits of phonological processing of Chinese and English words typically show a *weaker* activation in word reading tasks in Chinese than in English (e.g., Tan et al., 2005). Several neural-imaging studies (e.g., Bolger et al., 2005; Tan et al., 2005) demonstrated that different neural areas are associated with the neural circuits of phonological processing of Chinese and English words, suggesting the use of different cognitive mechanisms in the phonological processing of words. According to Tan and his colleagues (Tan et al., 2005), word reading in English primarily involves the use of *assembled phonology.* In contrast, reading logographic Chinese employs another mechanism called *addressed phonology.* In addressed phonology, the activation of phonological representations of words does not involve grapheme-to-phoneme conversions, but is accessed by directly retrieving phonological representations of entire words from long-term memory through a dictionary look-up or mapping process. Considering that the

phonological loop processes information in a series of manners (Baddeley, 1986), it seems plausible to assume that verbal WM, or more precisely the phonological loop, may be more involved in English word reading due to the need of doing grapheme-to-phoneme conversions. In contrast, Chinese word reading may to a less extent involve verbal WM in word processing because of the use of addressed phonology.

Figure 1. Neural systems for phonological processing of Chinese characters and alphabetic words (Tan, Laird, Li, & Fox, 2005)



The neural differences in reading Chinese versus reading English were also shown in English participants *with no previous knowledge of Chinese* (Liu, Dunlap, Fiez, & Perfetti, 2007). In a recent study (Liu et al., 2007), native English speakers were instructed to learn 60 Chinese characters in a short period and then were conducted MRI scans when they underwent computerized testing on the characters. It was found that although participants had such a short-term training on Chinese (total 6-9 hours only), they engaged a neural network that is very similar to that of skilled Chinese readers in the word recognition tasks with Chinese as stimuli. Compared with their neural network of reading English words, these participants' neural networks of Chinese reading showed several distinctive areas, including bilateral middle frontal (BA 9), right occipital (BA 18/19), and fusiform (BA 37) regions. All of the three regions were typically not found in alphabetic readers. These findings further supported the existence of a distinctive neural network associated with Chinese word reading in beginning Chinese learners. Based on the results, Liu and his colleagues proposed the System Accommodation Hypothesis (Liu et al., 2007; Perfetti, Liu, Fiez, Nelson, Bolger, & Tan, 2007), which states that reading in a new writing system requires recruitment of neural resources that can specifically support the features of the new writing system. In other words, the reading neural network has to change to accommodate the new writing system. As far as Chinese reading is concerned, the hypothesis suggests a possibly more involvement of visual-spatial WM and perhaps relatively less use of verbal WM in word reading than reading alphabetic scripts due to the unique features of Chinese script.

Behaviorally-based Evidence from Comparison Studies

Echoing the finding that different neural circuits underlie word reading in Chinese versus in English, Tavassoli's study (2002) provided convergent behaviorally-based evidence saying that Chinese speakers rely more on visual-spatial WM in their word processing than English speakers. In this study, participants

were asked to study a paper panel for a short time with a general instruction of "studying the information presented." On the paper panel, either the names of 16 animals (written in Chinese/English words respectively) or the pictures of the animals (the control condition) were presented with a given pattern of spatial arrangement. Then, after a filter task, participants were given a new paper panel to identify the changes on the positions of pictures or words. The number of items that the participants correctly identified the change in their positions was used as the measure of spatial memory. The results revealed that Chinese participants showed statistically better spatial memory for the positions of the words compared to native English participants. However, they did not show any better spatial memory for pictorial information in the control condition. This indicates that the spatial memory advantage of Chinese participants is only associated with Chinese logography. To interpret this unique spatial memory advantage associated with Chinese words , Tavassoli proposed that Chinese participants may rely more on spatial WM to process the words on the panel, which resulted in a better encoding for the spatial positions of words and thus a better spatial memory. In contrast, English participants may rely on less spatial WM and more verbal WM to process English words. Therefore, they did not encode and remember the positions of the words as well as Chinese participants did.

The plausibility of the interpretation that Chinese readers rely more on spatial WM in word processing is supported by another study using the Korean language (Tavossoli & Han, 2001). In this study, Tavossoli and Han found that even for the same words, the Korean participants tended to show better spatial memory for the positions of these words when they were written in Hancha, a logographic script in the Korean language that uses Chinese characters, than when the words were written in Hangul, an alphabetic script in the Korean language. The researchers suggested that the Korean participants may to a greater degree rely on visual-spatial WM in their processing of the Hancha script compared to their processing of the Hangul script, which made them acquire better spatial memory for the same words.

Evidence from Dyslexia Research

Research on Chinese and English dyslexia further lends support for the assumption that reading in Chinese and English reading may differentially involve visual-spatial and verbal WM in word processing. First, research following this line has been suggested that the primary cognitive deficits underlying Chinese and English dyslexia are different. Whereas the phonological processing deficit is the main cause of English dyslexia (e.g., Olson, Rack, & Forsberg, 1990), orthography-related difficulties seems to be the core causes of Chinese dyslexia (Ho, Chan, Lee, Tsang, & Luan, 2004). Second, the dysfunction of different brain areas appears to be associated with reading difficulties of Chinese and English dyslexic readers, which suggests the different biological origins of dyslexia (Soik, Perfetti, Jin, & Tan, 2004). Whereas impaired Chinese word reading is associated with a functional disruption of the left middle frontal gyrus (LMFG, Siok et al., 2004), English reading impairment is often rooted in dysfunction of left temporoparietal brain regions (Hoeft et al., 2007). As for the functions of these neural areas, previous research has suggested that LMFG is responsible for coordinating and integrating various information about written Chinese characters in verbal and spatial working memory during reading. In other words, this neural area is in charge of mapping Chinese characters' orthographies to their corresponding

syllables and/or semantics during word recognition. In contrast, left temporoparietal brain regions that are distinctively associated with English dyslexia have been suggested to play a role in the phonological processing of words and these areas are mainly responsible for phonemic analysis and conversion of written symbols to phonological units of speech during English word reading (Hoeft et al., 2007). This evidence from dyslexia research further supports the plausibility of our proposal that reading logographic Chinese may rely on more involvement of visual-spatial WM in word processing, whereas reading alphabetic English may involve verbal WM to a greater level.

Evidence from Word Reading Studies with Priming Paradigm

The potentially different involvement of visual-spatial and verbal WM in word reading in Chinese versus in English can also be somewhat supported by word reading studies using priming paradigms. Typically, reading studies using priming paradigm investigates word recognition by comparing the influence of different types of word primes (e.g., homophones or homographs of target words) on the recognition of target words. In several English reading studies with such a paradigm (e.g., Lesch & Pollatsek, 1993; Lukatela & Turvey, 1994), researchers consistently found that two different kinds of word primes - semantic associates of a target word (e.g., *beach* for the target *sand*) and the homophones of the semantic associates (e.g., *beech* for the target *sand*), to *the same or similar extent,* facilitated the recognition of target words. This indicates that phonological information must be actively used to access lexicons or semantic meanings of English words during word recognition so that sharing the same sound with the semantic associates can, at least to a similar extent, facilitate the recognition of targets. In the literature, this facilitation effect is called *phonologically mediated semantic priming effect.* Using exactly same experimental tasks, corresponding Chinese word reading (e.g., Zhou, Shu, Bi, & Shi, 1999; Zhou & Marslen-Wilson, 1999) has consistently reported the missing of phonologically mediated semantic priming effect in the recognition of Chinese words. For example, a study conducted by Zhou et al. (1999) demonstrated that only semantic primes of a Chinese character (e.g., the prime 歌 /ge/ *song* to the target 舞 /wu/ *dance),* but not the homophones and pseudohomophones of the semantic associates (e.g., 鴿 /ge/ *pigeon* to the same target 舞)*,* significantly facilitated the recognition of Chinese target characters. The absence of the *phonologically mediated semantic priming effect* in Chinese word reading indicates that phonology code does not mediate the initial lexical access of Chinese words as it does in English word reading. Several Chinese researchers, therefore, proposed the notion that Chinese word recognition is a visually-dominant process in which the phonological processing only plays a limited and secondary role (e.g., Zhou et al., 1999). Since the phonological processing is the function of verbal WM (Baddeley, 2000), the above findings from priming reading studies further suggest that reading Chinese words may, to a less extent, demand the involvement of verbal WM than reading English.

To conclude, a review of empirical research has shown that current research from several different areas has provided convergent evidence for the plausibility of the proposal that reading logographic Chinese and alphabetic English words differentially makes use of WM due to the significant linguistic differences between the two scripts; whereas reading Chinese words to a greater degree relies on the

use of visual-spatial WM, reading English seems to require a more involvement of verbal WM in word processing.

In the reading research field, the investigation of potential differences in the use of WM in reading across various scripts, such as logographic Chinese and alphabetic English, is still an emerging area of research. However, systematically examining this topic has significant implications to both reading research and reading instruction practice.

As far as reading research is concerned, empirical investigation of the potentially different use of WM in reading across scripts can bring a n*ew perspective to explore and explain individual differences* in reading processes. In the reading research literature, the contribution of WM to individual differences in various reading processes has been an important concern (e.g., Just & Carpenter, 1992). However, almost all of the existing studies in this aspect focus on how individual differences in *WM capacity* influence reading processes. To date, there is still no study examining whether the involvement of the different components of WM (e.g., visual-spatial and verbal WM) may also contribute to individual differences in some reading processes. Research following this line is important not only because it can bring new insight on individual differences in lower-level reading processes, but also because such examinations may lay a foundation for the future investigation of high-level reading processes in reading across scripts. Recently, research has demonstrated that visual-spatial WM and verbal WM are responsible different aspects of some higher-level reading processes (e.g., Friedman & Miyake, 2000; Robinson & Molina, 2001). For example, Friedman and Miyake (2000) found that whereas spatial dimensions of situation models were maintained in visual-spatial WM, causal dimensions of situation models were maintained and elaborated independently in verbal WM. Robinson and Molina (2001) demonstrated that different types of adjunct displays (e.g., outlines and graphic organizers that were inserted in texts to assist students in comprehending texts) were maintained independently in visual-spatial WM and verbal WM respectively. Based on these findings, it is plausible to reason that if reading across scripts, such as Chinese and English, does differentially rely on visual-spatial WM and verbal WM in word processing, this difference at the word reading level between Chinese and English readers might further cause them to have different performance in some high-level reading processes (e.g., the construction of situational models); or the difference may trigger Chinese and English readers to use different strategies during reading activities. In this sense, the finding from the current study may provide a foundation for the proposal and examination of these new research questions in the area.

Another implication that the examinations of the potentially different involvement of WM in reading Chinese versus English may have to reading research is that such investigation will shed light on the role of visual-spatial WM in lower-level reading processes. In the current literature that is dominated by English reading studies, the investigation of the role of visual-spatial WM in reading processes is still a weak area. Conducting comparative studies in a non-alphabetic script, such as logographic Chinese, undoubtedly can bring new insight to this less explored topic.

Practically, empirical examinations of the potentially different use of WM in reading Chinese versus English also have important implications to reading instruction, especially that for Chinese/English bilingual readers, and the intervention of English dyslexia with phonological deficits. Typically, English readers with phonological dyslexia have difficulties reading irregular words and pesudowords because of their inability to decode words through invoking spelling and sound correspondences (Small, Flores, & Noll, 1998). The investigation on the involvement of visual-spatial WM in Chinese word reading might eventually reveal some specific mechanisms of word visual processing by which Chinese readers rehearse the orthography of words without resorting to any phonological processing of words. By helping English dyslexics acquire these Chinese-style methods of visually processing words, educators might greatly improve English dyslexics' ability to read irregular and pseudowords in a new way.

Considering that there is still no study in the current reading research area that directly compare the relative use of visual-spatial WM and verbal WM between Chinese reading and English reading, we proposed a specific study that can provide empirical examination of the issue in the next section.

A Study Proposal

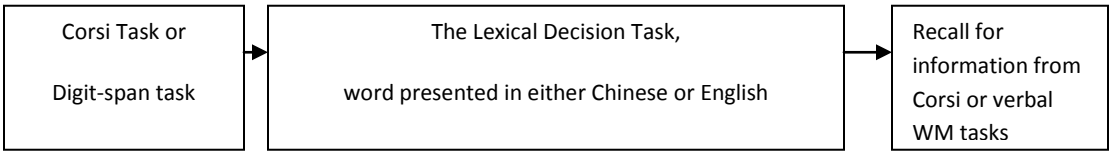
The Goal and the Hypothesis

The goal of this proposed study is to directly compare the relative involvement of visual-spatial WM and verbal WM in Chinese and English word reading with a group of bilingual readers to test the hypothesis: reading logographic Chinese may to a greater degree requires the involvement of visual-spatial WM in word processing, whereas reading alphabetic English may demand more involvement of verbal WM.

The Study Design

The participants of the study will be 50 Chinese/English bilingual graduate students at a public university. A dual-task experimental task, consisting of a word recognition task and a concurrent WM task, is designed to test the hypothesis. The word recognition task used in the experiment is a lexical decision task in which participants need to quickly judge whether a presented word is a real word or pesudoword. The concurrent WM task has two versions, one is a verbal WM task (*a revised digit-span task*) and the other is a visual-spatial WM task (*a Corsi Task*).

Figure 2. The Flowchart of the Dual-task Experimental Task



As the above figure shows, the experiment procedures are as follows. Firstly, participants will be presented either of the two WM tasks (i.e., the Corsi task or the digit-span task) for 7 seconds. At this stage, participants need to process and remember the presented verbal or visual-spatial information.

Then, participants will be presented the second word recognition task, in which a list of words (either Chinese or English) is quickly presented to them and their task is to judge whether they are real words. There will be 10 words in each set with each word presented for 1 second. While participants are completing the word recognition task, they need to simultaneously maintain the verbal and visual-spatial information that they got from the previous WM tasks. After done the word recognition task, participants will be asked to recall the verbal or visual-spatial information in the firstly presented WM tasks.

The verbal WM task is a revised version of the digit span task. In this task, a series of digits will be presented on the screen of a computer. Upon seeing the digit sets, participants need to quickly complete two tasks serially: 1) add number 2 to the very first and last digits of the set to get a new set of digits; 2) maintain and recall the new digit sets in the original order while finishing the word recognition task. For example, if a digit set, 2, 8, 3, 4, 9, 6, 5, appears on the computer screen, the participants need to first add number 2 to the first digit 2 and the last digit 5 in order to get the new set of digits – 4, 8, 3, 4, 9, 6, 7. After the additions, participants need to maintain the new set of digits until they finish the subsequent word recognition and then recall the new digit sets on a worksheet. The Visual-spatial WM Task is a computerized version of Corsi task. In the task, a matrix consisting of 9 white small squares will be presented on a computer screen for 1/2 second. Then, some of the white squares will be quickly filled out black color in a given sequence. The task of participants is to remember and later recall the sequence in which the squares are filled out with black color.

The primary interest is to examine whether participants show a significantly different performance in the WM tasks when Chinese and English word reading tasks are respectively used as the concurrent and secondary task. Since Chinese word recognition is a visually-dominant process in which the phonological processing only plays a secondary role (Zhou et al., 1999), it is predicted that participants' performance in the visual-spatial WM task would be significantly interfered by the concurrent Chinese word reading task compared with the corresponding English reading task. In comparison, an opposite pattern may be seen for the verbal WM task. That is, participants' performance in the verbal WM task would be significantly interfered by the concurrent Chinese word reading task than English word reading task.

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TEACHERS AS RESEARCHERS: STORIES BEYOND THE CLASSROOM

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ABSTRACT

Teachers who listen to and value their students' storied lives are provided with insight to their interactions outside classroom walls. In my role as professor I also relate to Birnbaum's (2007) quote of the Talmud, "Much I have learned from my teachers, more from my colleagues, but most from my students (638)."

In this manuscript, I share the narratives, which three women wrote for the course and discuss how their research came to life, far beyond their classrooms. First, Karen recounts her struggles in working hard to be a good and moral mom to her young boys. Secondly, Cindy describes the story of her mother's passing, and finally, Mary narrates her unexpected link with life's interruptions. Through qualitative methods of inquiry, these stories were told during the spring semesters of 2007 and 2009. With a common thread of spiritually and little editing on my part, their stories remain their own.

Introduction

While teacher research allows educators to share inquiry generated in and about their classrooms (Holdaway, 1979, Routman, 2000, Allen, 2007), I have found the most inspiring are the ones teachers tell beyond educational settings. Such has been true for the past 13 years in Teachers as Researchers, my Education Specialist course. Over these years, I have taught 170 students, 168 having been women. While our course objective is to look at issues of teaching and students' learning, in many cases what begins as teacher research becomes much more, especially as women's relationships and narratives are linked with work away from schools, to family, and even life and death.

As an example, *Women In Literacy and Life's* 2005 issue included an article by my student, Erica Rush Brooks and me, *Teacher to Soldier: One Woman's Journey to the Transition*. In 2003, as one of my Teachers as Researchers students and a member of the National Guard, Erica was called up to be deployed overseas. She came to my office to request that I drop her from the class. Instead, I asked Erica to complete her field notes, literally in the fields of Kuwait, and Iraq. From mom, teacher, to solider, Erica's story was shared.

Teachers who listen to and value their students' storied lives are provided with insight to their interactions outside classroom walls. As I teach this course each year this added view of my students has helped me fine-tune my own teaching. Joubert once said, "To teach is to learn twice

(thinkexist.com)." In my role as professor I also relate to Birnbaum's (2007) quote of the Talmud, "Much I have learned from my teachers, more from my colleagues, but most from my students (638)."

In the following, I share the narratives, which three women wrote for the course and discuss how their research came to life, far beyond their classrooms. First, Karen recounts her struggles in working hard to be a good and moral mom to her young boys. Secondly, Cindy describes the story of her mother's passing, and finally, Mary narrates her unexpected link with life's interruptions. Through qualitative methods of inquiry, these stories were told during the spring semesters of 2007 and 2009. With a common thread of spiritually and little editing on my part, their stories remain their own.

Karen's Story: On Role Modeling for Mommies: One Mommy's Journey

> I am realizing that I play many different roles to my children. I am a teacher, comforter, disciplinarian, friend, encourager, and a spiritual guide. These roles are all extremely important. But I believe that one is more important than all the others and, in fact, is the foundation for the others. In my heart, I believe my call is to be a spiritual guide for my children. Being a spiritual role model is definitely the most important. If I get this role right, the rest should follow. (Field notes, February 4, 2009.)

I'm just a mom." Have you ever caught yourself saying that? There's no "just" about being a mom. It is hard work, as children need far more than food, shelter, and material things: they need careful guidance. Morals and values should be instilled while children are young and with this hard work, as a vital part of my duty as a parent, I contribute to society as a whole. Taylor (2008) offers,

> One of the most challenging tasks confronting parents is that of instilling within their children a proper set of values. This makes parenthood a tremendous responsibility for such values will provide them with motivation and guidance throughout their lives. Parents should not neglect this challenge, or start too early to accomplish it (1).

Additionally, Proverbs 22:6 says, "Train a child in the way he should go, and when he is old he will not turn from it."

As wife, mother, daughter, educator, college student and friend, I am an example of the common day working mom trying to balance a busy lifestyle, while raising my boys, aged five and ten. And although I thought the field notes written for this course were centered on my responsibilities as a reading coach, my professor (in reading my notes) determined I was most concerned with my job as a mom, nurturing my sons to become mature, compassionate, and spiritual adults. My reflections traced daily interactions between the boys, ways I worked toward instilling morals and values, with the role I play in the process. From this research, I hope that I, as well as other parents, will be able to see the connection between making time to teach and model ethics and ideals.

Sibling rivalry. It was through this study I was forced to think how I interact with my children and the role I play in their lives. I have also begun to try to understand what type of beliefs my children have

and to contemplate what kind of people I want them to become. As I listened and watched them interact with one another, I could see there was a lot of love existing between them. However, I did observe jealousy and competition as I call it, brotherly bickering, an idea and problem as old as the human race, beginning with the Biblical story of Cain and Abel (Dobson, 2003).

Mother and I took the boys to gym with us this afternoon. They had a blast! Brad was a little wild and Blain was determined to run a mile again, and he did. They both wanted to jump on the scales every time they did some type of exercise and check their weight. Both boys are competitive and want to turn everything into a race or competition. I couldn't help but think about what the preacher said this morning. I guess you just have to consistently work on teaching your children what good values are and how they need to learn to handle competitive situations. (Field Notes, January 19, 2009.)

Instilling morals and values into our lives. In wanting my boys to learn the virtue of work, I give them responsibilities in doing good works for others. Gothard and Russell (1990) suggest, "We have always believed children learn by doing, by thinking about what they do, and by being integrally involved in the learning process (214)." In putting this thought into action, I did not plan on the experiences creating so many smiles along the way. In the following, my data relates Blain's thoughts on his attempts to help others.

Most of the day we worked on the new ball fields at the elementary school. The school board is providing most of the money for the materials, but our youth sports program is going to provide the labor. I think that is pretty fair. However, we worked several hours laying sod and picking up sticks. During our work today, Blain made sure to let me know that he was trying to be kind and open doors for older people (as I had suggested). He said, "Momma, I have really tried to open doors for older people this week, but there just haven't been many old people at school." (Field Notes, January 31, 2009.)

In doing good deeds for other people, we feel valued for our performance of a task or activity, while feeling worthy when we show compassion and a good heart. This is a positive and healthy feeling, costing people time, but not money. As parents we teach children how to do homework, play ball, and go out to eat. Yet it is equally important to teach children to have compassion for others.

As an example of this concept, Blain and I made cookies one day for Mr. Jones (a senior widow neighbor). I let Blain do almost everything from getting the oven ready to putting the cookies on the plate. He seemed so proud of himself! And the lesson I learned is that baking cookies provided the time to teach my son that although it is much easier to buy something already made, working toward this task created intrinsic rewards for both of us. Often, we just get in a hurry and do these things for our children. There is a lot of learning that goes on when parents take the time to model and explain things to their children. Most of us just get impatient, or just don't want to make the time. Yet this is an essential step in helping bring my children to maturity.

My role as a good model-looking in. The old saying, "you lead by example," is so true. I worry do my attitude and actions really make a difference in the lives of my children?

I have no doubt that children need to see us lead good lives, but they also need to know why we do it. Parents are definitely role models. Without proper guidance, children may simply wonder through life without ever learning any morals and values, or gaining an understanding of what is the right thing to do. In my role as teacher, I see this too many times with my "lost" students. I can't help but think of the Golden Rule, "Do unto others as you would have them do unto you." If everyone would learn to treat others like they want to be treated, I believe things would be better for everyone in the world.

In sum, I will one day think back on this course and the many stories my sons and I told. I can't wait to share these stories with them, or perhaps one day with their children, my grandchildren, stories of our lives, directing us in all areas.

Between a Rock and an Easy Place: Daughters and Teachers, Cindy Remembers

> There was a time when I had to miss my college class in order to drive to Birmingham to be with my mom. I did not leave her bedside. I am getting teary eyed, so I'm ending my writing for today. (Field Notes, January 10, 2007.)
>
> Life is filled with mountains to climb, some easy and others challenging me in ways not Joyfully embraced, as I must face my mother's passing. Yet I continue to be worthy of the journey in my roles as a daughter, teacher, and college student. And it has always been me, listening to and providing for other people, with advice regarding adversaries in *their* lives. I am no longer the provider, but the one that needs to be embraced with encouraging words and support.

When mothers and daughters have a special relationship and things turn for the worst, giving back to my mom, who has given up so much to make my life happier and easier for me, makes me feel happy to be there, when she needs me the most, like I needed her. And while we hear so much about Baby Boomers taking care of elderly parents, little is said about young adults whose careers have just begun to develop, as my own as a classroom teacher, and college student obtaining a higher degree.

These tasks with Mom are not just "daily snacks," but full course meals that keep one full and/or satisfied throughout the day. As you can see, I did not say anything about a "social life." Friends my age are "going out." Hanging out with friends is not even on my calendar of events, and I do not have any regrets. You only get one God given, awesome mother who has been there through all the tears and all the times you needed that motherly advice with issues like, "It's too hard." "I want to give up." "Mom, I like this guy, what do you think about him?" This is why this topic is so special to me.

My goal was to write a paper that both entails information and circumstances dear to my heart and/or to help someone who experiences difficult times during this journey we call life. At the time of this study I was 28 years old, a second grade teacher, and a graduate student. Yet these roles were placed

on hold when my mother was diagnosed with cancer in the summer of 2006 with me still heart sick over the death of my father in June 2004.

Memories of all the good times with my parents and brother as a big happy family still remain in my heart. Now, when I look at my mother and see how her laughter is gone and her energy diminished, I feel lonely and sad. Fortunately, I can reflect back to those memories and the sadness turns into laughter and a smile begins to shine like I'm in a "Kodak" moment. For example, I remember Christmas' with bags filled with fruit, nuts and candy with a sheet of paper with our name on it attached to the bag. It doesn't seem like much, but each year I looked forward to Christmas and looking for that special note.

And I won't ever forget when I left for college. This was the first time I had been away from my parents. I don't know who cried more, Mom or me. I came home every weekend and when it is was time for me to go, we both cried. My dad use to say, "We go through the same thing every Sunday."

In the literature concerning end of life issues, I found comfort in "Gone From My Sight," a booklet provided by my professor (having gone through the same experiences with her mom this same year). The author, Karnes (1986) states,

> Each person approaches death in their own way, bringing to this last experience their own uniqueness. What is listed here is simply a guideline, a road map. Like any map there are many roads arriving at the same destination, many ways to enter the same city. Death comes in its own time; in its own way. Death is as unique as the individual who is experiencing it (1).

I had no idea of death's preplanned journey yet take comfort in researching and realizing the stages of death, research for a college course I never considered investigating. I also discovered the wonderful and abundant support from my co-workers while understanding life's detours.

My teaching friends helped me emotionally with words of encouragement, a helping hand, and/or with shoulders to cry on, even offering their own sick days when I had none left and needed to stay home to care for my mother. My family stepped in too. My aunt, from Arkansas, came to help sharing with me "I knew that you would be tired from teaching so I have taken good care of my sister and done everything I thought you would try to do when you got home."

Perhaps the most difficult part of this journey is understanding how those dying begin to withdraw from our world.

> She didn't eat much today. She just stared in space. She doesn't watch T.V anymore. I just don't understand that! She loved watching T.V. I am saddened when I go into the room and see her gazing into space. One good thing about it she still knows who I am. Thank God! (Field Notes, February 10, 2007.)

I can honestly say if my mother left me today, I do not have any regrets. In my heart I truly believe I have done everything a dedicated daughter would do as Momma takes that last breath as my friend, my teacher, my inspiration, and even psychic, who already knew something was wrong, even before I told her.

> I missed those talks. I miss her calling me every five minutes. As I reflect back to my college days, my mom called me, it seemed like every second just to say what are you doing and I love you. "I don't get a chance to breathe a word, she (my mom) just snatches the phone," Daddy remembered. (Field Notes, March 2, 2007.)

When that passing day comes for my mom, I will look up at the stars and know in my heart that my parents are looking out of heaven's windows and saying, "My baby did not go astray, she stayed true to us, herself, and most importantly to our Almighty Savior."

> I will just comb my mom's hair and she starts to cry, I say Mom what's wrong and she says you are such a good daughter. That makes me feel so good! I am so happy that my mother knows that I am there for her. As I write I get so emotional because it hurts, but I'm not going to hurt for long. I'm ending my writing today with hold on, be strong. (Field Notes, February 20, 2007.)

Life can be so challenging when you have so many dreams to accomplish, never foreseeing such challenging situations. Some are easy, while others are unbearable with times you have to make decisions and make them quick. I had to make the decision to be my mother's full-time caregiver and take off from teaching and firmly believe I made the right choice. Wong (1991) suggests, "A profession is defined not by the business a person is in, but by the way that person does his or her business (293)." I know in being my mother's caretaker I made all the right decisions.

Punt, Pass, or Kick: Examining Life's Interruptions, Mary's Story

As we face accountability demands and a return to more structured practices (teaching to fidelity), flexibility in teaching and students' learning is no longer an option. Being a kindergarten teacher, I see this trend as even our curriculum becomes more academic in nature. Yet some researchers still have it right: "Teachers should encourage flexibility and help students accept that life is often less than perfect (Greenberg, 2006, 26)."

In working with five year olds, I became a master at being flexible, juggling daily, if not hourly classroom interruptions. Yet I never predicted my own 'life interruption' while collecting data for Teachers as Researchers. Having just gone through my mother's battle with cancer, I would now, too, be confronted with the same diagnosis. And not only would I be dealing with cancer, but at the same time I would continue on as a wife, mom to my nine-year-old son, teacher, and college student. The professional literature and medical websites I researched brought me back to my skill in being flexible, once practiced on occasion, now a necessity.

I have come to not only expect interruptions but also embrace them as learning experiences. Some present themselves in negative contexts while others have given me strength and motivation to carry on. Following are examples of each documented through my field notes.

> *Class-let's stop for a moment…*
>
> The state department came around today and had everybody in frenzy. One lady came in my room and asked to see all kinds of paper work. Mind you this was during our supposedly uninterrupted reading block. (Field Notes, January 12, 2007.)

I feel like a ball player punting, passing, and kicking to stay afloat within the many demands that are imposed on teachers today. It seems like when you have your students on track following a routine, someone comes and punts the ball for us to kick all of our organization to the end zone. I was always organized and committed to staying on task, yet when I started teaching young children, I quickly learned from my students that you can't plan every detail of the daily schedule.

Teaching kindergarten teaches you to be flexible and open to new ideas. Writing about them made me realize just how much teachers deal with interruptions, some negative in nature.

> I had to stop math instruction today because one of my parents wanted to have a conference about an incident that occurred with her son and another student. I told her I would be more than willing to meet with her at another time. I told her I couldn't discuss the incident right then because I was teaching and I couldn't leave my students unattended. Oh she got really irate and went to the student in question and tried to confront the student. Well to make a long story short she had to be escorted from the school premises. I had to resume teaching calm, cool and collected like nothing had just interrupted our class. (Field Notes, January 11, 2007.)

The interruptions that occur throughout the course of a day start to add up and in turn cheat students of their valuable learning experiences. When grown-ups cause the interruption (a characteristic I thought of only in relation to children) I see this as unrealistic because they (adults) can wait until a more appropriate time arises. As adults we sometimes forget that we are the role models that our children look up to and imitate. And our own interruptions greatly influence our students. As an example, when I was sick and couldn't come to work for several days, I returned to find my students complaining of being sick because they didn't like the sub. Even small children have difficulties adjusting to interruptions.

At the same time, I experienced interruptions that proved to be valuable to me as a teacher and wife/mom.

> My class is really enjoying our new science series. This new series incorporates a lot of hands-on activities. This week we are planting seeds and making observations about the growth of the plant. Every morning this week they entered the classroom and ran

> straight to the windowsill to see if their plant has sprouted yet. (Field Notes, January 24, 2007.)

I love times when my students have the opportunity to explore things in their environment. When students are a part of their learning it's more meaningful and this is a most rewarding and positive interruption. I embrace these kinds of learning moments initiated by my students.

And for cancer, one wouldn't normally consider this disease as a positive interruption. In the back of my mind I believed myself to be invincible not thinking about getting sick and dying until I was old. I wasn't prepared for this life interruption, but when you think about it, who is? I have always had a strong faith in God and had a positive outlook on life. Through family, friends and prayers, I was given the will and strength to face my *lifelong* interruption. Yes I say lifelong interruption because there is always the possibility that the cancer can resurface and the fear will always be there.

My life interruption with cancer helped me, too, become closer with my family. Now we take time a least one night a week for family night. We play games, eat at the dinner table, and just talk. This was always overlooked, because of school, sports, Boy Scouts, piano and work. We now find time to just sit back and enjoy each other. One thing I was obsessed about during my illness and recovery was how this was going to interrupt my son's life. It was difficult for him at first, but he was a real trooper and I gained a lot of my strength from him. We spend so much time trying to teach children that we forget they teach us something in the process.

After the interruption with my illness I have been trying to get back to a normal life, and I have made adjustment for things (in my life) that I can control. All the interruptions I experienced, negative and positive have taught me that trying to do things perfectly is a barrier to trying or experiencing new things. I have dealt with my life's interruptions and unexpected challenges while finding inner resilience that I might have never known existed within me. I am blessed and grateful to be here to experience interruptions. I now know to never take life for granted because tomorrow isn't promised. That's why it's especially important for us to learn to adapt and manage both ideas essential to our health, happiness and sense of well-being. *There's nothing to fear, but life itself.* (Adapted from Franklin D. Roosevelt).

Professor's Reflections

College coursework can become as structured as the current elementary curriculum we oppose (teaching to fidelity) as we ask our students to complete syllabus assignments without stepping beyond the "script." Yet my students' stories are personal and reach far beyond course objectives. Valuing their work I intervene and direct their collection of data centering on family, life, and death while seeing this as a most important component of teacher research. In your own teaching, how can you see and value your students beyond scripted lessons?

As a postscript, Karen is finishing her paper for the course this semester. In 2007, Cindy's mother passed away one month before she graduated with her Ed. S. degree while Mary remains cancer free.

Teachers as Researchers has given me opportunities to see and appreciate not only my students' storied lives, but how these narratives structure my role as teacher. According to Denzin (1994),

> In telling a story, the author attempts to weave a text that re-creates for the reader the real world that was studied. Subjects, including their actions, experiences, words, intentions, and meanings are then anchored inside this world as the author presents experiences near, experiences distant, local, and scientific theories of it. Readers take hold of this text and read their way into it perhaps making their own of the stories they will tell about themselves (507).

These women have and will graduate from my course, but remain in my life as some of my best storytellers and friends.

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SCHOOL LEADER PREPARATION BASED ON SOCIAL ENTREPRENEURSHIP: FACTORS INFLUENCING PROGRAM PARTICIPATION

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ABSTRACT

This paper presents a study focusing on a school leadership preparation program based on the business principles of social entrepreneurship. Social entrepreneurial school leadership is a model of leadership based on transformation through initiative and risk-taking, particularly advocated for school start-ups, through either conversion or transition. Within social entrepreneurship preparation, instruction in school design, infrastructure, operations management, financial planning, and marketing are added to the traditional educational leadership curriculum staples such as supervision and organizational theory. Preparation programs using a social entrepreneurship model 'enculture' aspiring leaders to a sense of autonomy in their decisions while continuing to promote working collaboratively within teams (Wilson, 2006).

Using an organizational socialization theoretical lens, this study examined how socializing factors influenced participants' choice to pursue this particular alternate certification program. Researchers analyzed documents associated with the alternative certification program and conducted semi-structured interviews with two directors of the program and four aspiring principals enrolled in the program. Analyses of aspiring principal interviews were coded. Factors emerged from the codes that were compared with dimensions of a socialization framework. Findings indicate that aspiring principals were influenced to choose an alternative certification program primarily because of the organizational/contextual aspects of the program. A key finding from this study is the intersection between internal processes related to seeing themselves as change agents and the perceived

innovations of the alternative preparation program. This intersection had a major impact in how these aspiring principals came to pursue this alternate principal preparation program. Implications include the integration of business curriculum principles into school leadership preparation, and the use of a social entrepreneurial leadership framework to recruit aspiring principals who views themselves as leaders of change.

Keywords: social entrepreneurship, principal preparation, school leadership

SCHOOL PRINCIPALS AS PROFESSIONAL LEADERS

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ABSTRACT

The purpose of this paper is to show how school principals can help teachers prepare students to prosper in a global knowledge of education. As more demands are placed on schools, principals must be strong instructional leaders, who find innovative ways to provide professional development for teachers. Although principals appeared to recognize their pivotal role in the professional development process, the majority of them reported financial restrictions and time constraints as major barriers to their roles as instructional leaders. Many authors have called for a reform of professional development practices as a precursor to educational reform (Fullan, 2002; Glickman, 2002; Guskey, 1995, 2002; Sparks, 2002; Sparks & Hirsh, 1997). Guskey summarized that "every modern proposal to reform, restructure, or transform schools emphasizes professional development as a primary vehicle in efforts to bring about needed change" (1995). Unfortunately, as schools approach change in a fragmented fashion, staff development has often been an afterthought (Sparks & Hirsh, 1997). Because there is a greater recognition today that quality professional development is a necessary ingredient for teachers to build the necessary capacity to help students to achieve at high levels (Glickman et al. 2010).

Keywords: school principals, professional development, instructional leadership.

Introduction and Overview

Raising educational standards is at the core of many developed countries' public policy agenda. Different countries have adopted different approaches and strategies to achieve this aim. In the United States, schools have been subjected to standardized tests as required by the No Child Left Behind

(2001). Data-driven decision making focused on the analysis and use of student achievement data with teachers as the primary response to accountability demands (Bernhardt, 1998; Holcomb, 1999; Johnson, 2002; Love, 2002).

School principals as instructional leaders today have enormous responsibilities as they strive to lead effectively in the context of multifaceted educational challenges. The principal's instructional leadership is crucial for quality education. Many scholars are of the opinion that the meaning of instructional leadership is to help teachers to teach better. However, teachers can only teach better if they are given the necessary support, educational aids, training, motivation and rewards (Glickman et. al. 2010).

Teacher shortages, teacher turnover, low performing teachers, standards-based reform, accountability, and an increasingly diverse population are among the many challenges principals currently face. Principals are being asked to adapt from managing instructional leadership, scheduling, budgeting, and other responsibilities to being primary adult developers and architects of collaborative learning communities. They must take on diverse roles, and support themselves and teachers with differing needs, developmental orientations, levels of experience, and preferences to retain and support teachers under conditions of standards-based reform and increased accountability (King & Lawler, 2003). (Drago-Severson, 2007). Yet, many principals are not supported to meet these challenges and more are leaving their posts because of the stress and complicated nature of their work (Klempen & Richetti, 2001; Murphy, 2006; Sparks, 2004). Currently, there is a pressing need to support principals in addressing these challenges so that they can cultivate schools to improve teacher and student performance. One pathway to supporting principals is to develop how they might better support their teachers. This could be done by nurturing principals as they enhance their capacities to implement effective professional development programs for their teachers (Glickman et. al. 2010).

Scholars suggest that effective professional development for teachers should be: (1) rooted in and derived from practice, (2) ongoing rather than one-shot experiences, (3) on-site and school based, (4) focused on student achievement, (5) integrated with school reform processes, (6) centered around teacher collaboration, and (7) sensitive to teachers' learning needs (Hawley & Valli, 1999).

Although principals appeared to recognize their pivotal role in the professional development process, the majority reported financial restrictions and time constraints as major barriers to their roles as instructional leaders. Those who design and recommend professional development need guidelines to follow to ensure that the activities for their teachers will promote improved instruction and learning (King & Lawler, 2003).

Lawler and King (2000) suggest six adult learning principles that can guide the design, implementation, and assessment of professional development programs for teachers of adult; “create a climate of respect, encourage active participation, build on experience, employ collaborative inquiry, learn for action, and empower the participants" (pp. 21-22). In fact, Lawler (2003) maintains that not only is it

important for teachers to reflect on their practice and critique their assumptions about learning, teaching, and goals, but it is also essential for those who design and implement these programs to engage in critical questioning throughout program implementation to assess effectiveness and enhance adult growth. Models of professional development for adult educators offer new and promising insights for structuring, and assessing professional development programs for K-12 teachers (King & Lawler, 2003).

Based on a study by Chapman and Harris (2004) professional development was found to be one of the most important factors in securing school improvement in schools. Schools where students perform at high levels, principals invested heavily in the development of their teachers. Of critical importance was the selection of developmental activities that teachers were engaged in, their quality, duration and relevance to classroom practice. Furthermore, the instructional leader needs to have new opportunities and new approaches to conduct professional development, such as mentoring, coaching and peer review. Where teaching practices are poor, the principal could invest in forms of professional development and collaboration that elevate teachers' knowledge base and skills (Colantonio, 2005).

The latest National Staff Development Council Standards for Staff Development (NSDC, 2001) listed standards for the context, process and content of professional development. The Association for Supervision and Curriculum Development (ASCD) has noted that effective professional development is

1. directly focused on helping to achieve student learning goals and supporting student learning needs.
2. a collaborative endeavor -- teachers and administrators work together in planning and implementation.
3. school-based and job-embedded.
4. a long-term commitment.
5. differentiated.
6. tied to the district goals.

The staff development delivery method often employed in the past has inhibited meaningful improvement and is no longer acceptable today. For professional development to be meaningful to teachers, it must operate at two levels. First, teachers should be able to have a variety of learning opportunities to support their personal and professional career goals. Second, teachers as part of the district organization should together define, learn, and implement skills, knowledge, and programs that achieve commons goals of the district. (Glickman, Gordon, & Ross-Gordon, 2010). Research on successful professional development programs has shown an emphasis on involvement, long-term planning, problem-solving, administrative support, small-group activities, peer feedback, coaching, and leader participation in activities (Farmer, Hauk, and Neumann, 2005). Glicman. et al stated that teachers move through three stages of professional development: orientation, integration, and refinement.

According Glickman et al, teachers in the orientation stage, their benefits, responsibilities, and involvement in staff development are addressed. Teachers in the integration stage are assisted as they apply previous learning in their classrooms and schools. In the refinement stage, teachers move from basic competence to expertness through continuous experimentation and reflection.

Professional development has been inextricably linked to the successful implementation of curricular and instructional innovations and an overall improvement in the quality of the educational field (Sparks & Hirsh, 1997). If the principal's goal is to improve the quality of the educational environment – one that encourage creative thinking and problem solving, cooperative learning and higher levels of thinking – then the principal must create the same type of atmosphere for those individuals, namely the teachers who are directly responsible for student success (Colantonio, 2005).

During history, professional development has primarily focused on the development of pedagogical skills. However, in recent years the field has expanded to include a variety of other purposes, such as personal development, career development, moral development, school improvement, and the improvement of the teaching profession (Glickman et al. 2010).

In their role as professional development leaders, principals not only need to make time and space for reflection and collaboration, but through implementation of these professional development practices they can make reflection, and dialog centerpieces of school improvement (Drago-Severson, 2007). Although principals appeared to recognize their pivotal role in the professional development process, the majority reported that financial restrictions and time constraints are major barriers to their roles as instructional leaders. Some researchers suggested ideas how to overcome these barriers. It is important for all those involved in the professional learning of teachers to recognize the importance of controlling and removing the barriers to providing quality professional development. In order for professional development to be effective, all the stakeholders must understand that the direct improvement of teaching and learning in every classroom comes via a constellation of individuals and groups who undertake a myriad of activities and initiatives....[that] provide continual reflection and changing of classroom practices guided by the educational aspirations of the school (Glickman et al. 2010).

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MAKING CONNECTIONS: VALUES, CHALLENGES AND SUCCESSES IN THE IMPLEMENTATION OF PORTFOLIOS IN TEACHER EDUCATION AT A COMMUNITY COLLEGE IN NEW YORK CITY

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ABSTRACT

This paper triangulates a social-constructivist perspective on reflective pedagogy (Yancey, 2009), integrative learning (Eynon, 2009), and technology integration into learning and teaching (Wenzlaff, 1998). It discusses some values, challenges and successes fostered by the implementation of ePortfolios in an Early Childhood teacher education program at a community college in New York City. The aim of this paper is to connect the dots among a set of values, challenges and opportunities that concomitantly emerge from using this versatile tool in teacher education at BMCC, while also sharing insights that could help to inform and encourage best practices across community colleges and other higher education institutions.

Key words: ePortfolio, teacher education, integrative learning,, reflective pedagogy, technology integration

Introduction

In an attempt to facilitate a seamless portfolio development process, some teacher education programs opt for the development of electronic portfolio systems that are structured by professional standards. This approach enables students to collect and select artifacts for their portfolios and engage in self-reflection in order to demonstrate how well they are meeting baseline competencies. While some eportfolio platforms, such as the one utilized in the Early Childhood Education (ECE) program at Borough of Manhattan Community College (BMCC), may be rigid by design, standard-based portfolios are nonetheless integrative learning tools, enabling students to develop competencies that are transferrable from a community college to a four-year institution and beyond. Barbara Cambridge (2009), in the introductory chapter of *Electronic Portfolio 2.0,* states, "Eportfolios accommodate students' many roles and many sites of learning," (p. xiii). This particular viewpoint, by Cambridge, captures the philosophy of eportfolio implementation at BMCC.

General Context For Understanding The Eportfolio Implementation Process At BMCC

There is an evolutionary history in the way an institution sets out to meet its mission, and there are also certain events, decisions and connections in the course of that history which cannot be ignored.

Borough of Manhattan Community College (BMCC) is located in Lower Manhattan, which is also known as the world financial center. This college is the only higher education institution in the country that suffered loss of human lives and property during the 9/11 terror attacks. It serves a diverse group of learners, and nearly two-thirds of the 23,000 students are African American and immigrants from some 141 countries. These are students who are traditionally underrepresented in higher education in this country, and the vast majority of these learners need developmental skills and English-As-a-Second-Language support in order to stay in college and graduate. Like other community colleges in the United States, BMCC functions as a transition college offering associate degrees and instituting articulation agreements with a number of four-year institutions in both the public and the private domains. In spring 2006, BMCC's Early Childhood Education (ECE) program began experimenting with the electronic portfolio in its curriculum as a result of conversations with colleagues at four-year institutions. Electronic portfolios are only used in the Early Childhood Education program, and the faculty decided that they would use this tool for facilitating student self-reflection. The aim of this paper is to connect the dots among a set of values, challenges and opportunities that concomitantly emerge from using this versatile tool in teacher education at BMCC, while also sharing insights that could help to inform and encourage best practices across community colleges and other higher education institutions.

Theoretical framework

A review of the literature on eportfolios suggests that this tool can support short-term, medial range and long haul learning goals in the development of future teachers. Mary Huber, a senior director with The Carnegie Foundation, stated in a release report, "An emphasis on integrative learning can help undergraduates find ways to put the pieces together and develop habits of mind that will prepare them to make informed judgments in the conduct of personal, professional, and civic life" (2007, p. 1). Huber's perspective on integrative learning is quite relevant to the themes and rhemes that are explored in this paper.

In the past two decades, portfolios have become an area of interest in scholaraly research (Brubacher, Case & Reagan, 1994; Wolf, 1996; Krause, 1996; Yancey, 1997; Yancey & Weiser, 1997; Lyons, 1998; Barrett & Wilkerson, 2004; Batson, 2005). Digital portfolios, in particular, have become trendy in both pre- and in-service teacher education programs across the United States (Lyons, 1998; Teitel, Ricci & Coogan., 1998; Wolf & Dietz, 1998), and the vast majority of teacher preparation programs have chosen to use some types of electronic portfolios for learning and teaching (Meyer & Latham, 2008; Yancey, 2009). Kathleen Yancey (2009, p. 13) describes electronic portfolio as "a database-driven repository for exhibits from coursework activities throughout a teacher candidate's undergraduate program, which is itself keyed to a set of standards." In teacher preparation programs, portfolios are often used for promoting reflective pedagogy, integrative learning, and technology integration into learning and teaching practices

Teacher education programs have generally structured portfolios around professional standards in order to demonstrate how students are engaging in meaningful learning experiences, baseline

achievements, and self-reflection on their way to becoming teachers (Paulson, Paulson, & Meyer, 1991; Zamon & Sprague, 2009, p. 176; Yancey, 2009, p. 13). In the las decade, there has been a shift from print to electronic portfolio (Yancey, 2009). Yancey (2009) observes, "Print and electronic portfolios historically have featured *reflection* as their centerpieces" (p. 5). She explains that reflection typically involves both the processes and the various kinds of texts—ranging from concept maps to written texts to streaming video—that learners construct and integrate into their electronic portfolios. The electronic portfolio, in Yancey's view, has not only shifted the nature of reflection, but it has also broadened and increased reflective practice. Yancey underscores three ways in which the electronic porfolio and reflective pedagogy complement each other as learning and teaching tools: (1) through reflection, students make knowledge by articulating connections among portfolio exhibits, learning, and self; (2) reflective activities introduce students to new kinds of self-assessment, that they carry into life outside of and beyond educational settings; and (3) through engaging in reflective activities, students develop the stance and practices of a reflective practitioner who can synthesize multiple sources of evidence and make contigent and ethical sense of them (2009, p. 5). This constructivist approach, which is described by Yancey, procures a strong theoretical framework for using the electronic portfolio to achieve multiple goals in teacher education programs.

Initiating portfolios early on in teacher candidates' professional trajectory is both a value and a challenge that may help to cultivate the habits of mind (Chen, 2009, p. 31), reflective practices (Reodriguez & Sjostrom, 1991; Fox, White, Kidd & Richie, 2008; Yancey, 2009; Cambridge, 2009; Rickards & Guilbault, 2009), integrative strategy (Eynon, 2009, p. 66), and technology integration into learning and teaching (Wenzlaff, 1998; Wenzlaff & Cummings, 1996). Achieving these program and professional objectives can be quite challenging, given that student teachers generally do not possess the theoretical knowledge nor the experiential base to tap as they are creating portfolios (Krause**,** 1996; Freidus, 1998; Foote & Vermette, 2001). Added to those complexities is that faculty members need to receive training before they could implement portfolios in their teaching (Harvel, 2008).

Research Methodology

I used the notion of inquiry as developing in reiterative waves (Yancey & Weiser, 1997; Hughes, 2009) in order to make sense and reflect on the pedagogy that is taking root around the implementation of student eportfolios in teacher education at BMCC. Yancey and Weiser (1997) view research as knowledge construction that is grounded in reflective analysis, and that this type of inquiry constantly relies on practice as a source for knowing.

As a reflective practitioner, I drew from the work that I have done with Early Childhood Education majors and the support that I lent to my colleagues who have also been involved in implementing eportfolios at BMCC. I revisited a vast array of correspondences from my students and other professors seeking technical support and requesting feedback from me on their portfolios to inviting me to make in-class presentations to group of colleagues, and scheduling one-on-one specific training sessions for

adjunct instructors about facilitating eportfolio implementation in the Early Childhood Education program. I took notes from those correspondences, reviewed eportfolio committee minutes, and drew from classroom observations and conversations with students and faculty in order to answer the following research questions:

1. How does the Early Childhood Education program institute the electronic portfolio in the education of future teachers?
2. What are the principles guiding the eportfolio development process?
3. What are the challenges and opportunities that emerge through eportfolio implementation in teacher education at BMCC?

Major Findings

Teacher candidates at BMCC use their electronic portfolios to make connections and to become inquiry agents who tap multiple funds of knowledge inside and outside of the Early Childhood Education (ECE) program. The BMCC electronic portfolio is implemented in 10 courses taken within the Early Childhood Education (ECE) program. There are no free standing technology courses for students to take for creating their electronic portfolios. By the same token, there are no computer laboratories and technical support earmarked exclusively for ECE students and faculty to carry out activities related to the creation of ePortfolios. ECE instructors reserve computer labs and set aside time out of their course schedules to introduce students to the electronic portfolio.

In 2006, there were 500 eportfolios created in the ECE program. Currently, there are over 1,300 ECE majors who have initiated electronic portfolios in ECE courses ranging from introductory, curriculum and capstone courses. Early Childhood Education majors at BMCC collect artifacts and reflect on one or two professional standards in every course, beginning with the introductory course and ending with the capstone course. The program seamlessly incorporates the electronic portfolio into its course syllabi, and instructors incrementally use this tool to guide student reflections on professional standards throughout the ECE curriculum. Students reflect on five professional standards or principles established by the National Association for the Education of Young children (NAEYC).

At the beginning of the electronic portfolio development process, students create their homepages, which contain introductory statements and photographs describing who they are as learners. Next, they compose statements of varied lengths to articulate their own philosophies of education, and some choose to write about education philosophies, great thinkers, reform movements or people in their own lives, who inspire them to become teachers. As students progress from their introductory courses to the curriculum and field experience coursework, they collect and store work samples to document how they are achieving program objectives in those courses. This collection of evidence includes a broad array of artifacts ranging from activity plans, PowerPoint presentations, papers, worksheets and photographs to student journal entries, field experience logs and observation reports from field

supervisors. While some students scan and upload revised or graded work samples into their portfolios, others store unrevised and non-graded pieces of work into their electronic portfolios.

The guiding principles that inform students about the selection and compilation of work samples into the electronic portfolio are the NAEYC professional standard that those artifacts address. Perhaps, the most critical aspect of the portfolio development process is the series of reflections that students do on the following NAEYC principles (2003; http:www.naeyc.org):

- Promoting child development and learning (Standard 1);
- Building family and community relationships (Standard 2)
- Observing, documenting, and assessing to support young children and families (Standard 3)
- Teaching and learning (Standard 4)
- Connecting with children and families (Standard 4a)
- Using developmentally effective approaches (Standard 4b)
- Understanding content knowledge in early education (Standard 4c)
- Building meaningful curriculum (Standard 4d)
- Becoming a professional (Standard 5).

Another significant aspect of the electronic portfolio development process is the kind of learning community that it helps to foster inside and outside of the program. The BMCC eportfolio system is an interactive structure that enables students to send links to and request feedback from their instructors, classmates, family members and friends on the quality and content of their portfolios. In addition, the BMCC electronic portfolio also allows for students to map out their professional development plans and to include updated copies of their résumés in preparation for transfer to four-year institutions and beyond. These activities carry a high premium in teacher education at BMCC, because the overarching goal of the ECE program is to develop students who will become reflective, early childhood practitioners.

Core values and student portfolios at BMCC

Although student portfolios can be used as an assessment tools, the teacher education faculty has not used them for that purpose in any systematic way. In other words, BMCC students do not receive any grades for creating their portfolios. The electronic portfolios are not assessed or used in any shape or form for program completion. The students retain full control of access to their portfolios and they decide whom they want to send links to and request feedback on their portfolios. The amount of time and work student spend on their portfolios is not recorded, but the portfolios are deemed to be important items as students move forward and document achievements in their learning. Albert Einstein is said to have a poster in his dormitory door at Princeton University that reads: "Not everything that counts is countable, and not everything that is countable [necessarily] counts." This postulate has much relevance the values of the epistemology that is being constructed around student electronic portfolios at BMCC.

As per the philosophical underpinning of this paper, the above piece of wisdom accredited to Albert Einstein, when coupled with Cambridge's perspective on the ubiquitous nature of the electronic portfolio, alluded to earlier in the theoretical section of this paper, constitutes a strong rationale for supporting the teacher education faculty decision not to grade or use student portfolios as exit strategies in the Early Childhood Education program. One major assumption of this narrative is that there are no good or bad portfolios except for the quality of student reflections and the artifacts assembled to demonstrate learning outcomes. The electronic portfolio is one of the many tools that students in the ECE program are expected to transition with upon graduation from BMCC. That is a far different orientation from developing student portfolios as exit strategies from the program.

Another major assumption of the ECE program seems to be that the electronic portfolio can serve as a tool for initiating and sustaining the kind of reflective practice necessary for developing future teachers as well as for mediating ongoing conversations back and forth with colleagues at four-year colleges, field experience sites, and other stakeholders, needing to align resources and best practices in the development of ECE majors at BMCC. There is a constant unfolding of challenges and opportunities in this kind of dialectic toward connecting diverse communities of learners and decision-makers through of the implementation of the electronic portfolio at this community college.

The Electronic Portfolio as A Tool For Integrative Learning And Parallel Practice

As a consequence of using the electronic portfolio, both integrative learning and parallel practice, which seem to be the cornerstones of teacher education at BMCC, are being visibly exposed. The author of this paper, who also facilitate eportfolio creation at BMCC, has observed that an increasing number of students and instructors have engaged in a series of spiralling conversations, both internally and externally, about the ways portfolios are making learning and teaching more transparent in the Early Childhood program. On the one hand, the students are making connections across courses in the ECE curriculum, and they appear to be learning the way they will hopefully teach. The portfolios that students have created invariably reflect the premises of parallel practice, specifically through student reflections on NAEYC principles. On the other hand, the instructors seem relatively more conscious about the necessity for demonstrating how they are helping students to achieve course learning outcomes. The instructors are developing assignments and the students are writing reflections and collecting artifacts that document how well they achieving NAEYC standards in their courses. By and wide, the electronic portfolio serves as a catalyst for gauging the many layers of reflections and professional competencies that instructors and students are systematically developoing as they are connecting the pieces together. There are, however, challenges that evolve in tandem with the development of the electronic portfolio at Borough of Manhattan Community College.

Some challenges associated with the electronic portfolio development at BMCC

Faculty development, as a criterion for transformative learning (Cranton, 1996; Harvel 2008), is a critical area in the creation of eportfolios at BMCC. While all the fulltime professors received training on how to

facilitate the implementation of the electronic portfolio with students, some adjunct faculty did not. The program developed a strategy whereby members of the ePortfolio Committee serve as point-persons to provide one-on-one trainings to part-time instructors. This arrangement is carried out semester after semester based on the number of new hires and adjuncts who need this kind of technical support.

Another challenge relates to the coherence and integration of the eportfolio in course syllabi without impinging academic freedom. The structure currently in use is standard-driven, and there are specific sets of NAEYC principles assigned to every course in the ECE curriculum. Some of the instructors in the program do not like the idea of incorporating those standards in their course syllabi, raising concerns about their academic freedom. There also those who feel that the grades, comments and feedback they wrote on student work should not be reflected on the artifacts that students compile and exhibit in their portfolios.

Moreover, the question as to who owns the eportfolios is key in getting faculty involved and on-board in the implementation process. While the faculty facilitate the development of the portfolios, it is the students who retain full access and control of the electronic folios. That is, the eportfolios are password protected and can only be seen if the students send links to allow their instructors to view these databases. The program procures students free storage space on a server to keep their portfolios for three or more years, but only program administrators—not instructors—can access student passwords. Furthermore, the students can copy their portfolios on a CD-ROM or a portable drive, but those folios remain the college's property. The students cannot delete their eportfolios on the program's server.

Opportunities

Educational challenges, however, are oftentimes accompanied by opportunities for new learning, the stretch of creativity, and reflection. The eportfolio implementation process has enabled BMCC's Early Childhood to re-adjustment its goals and to make learning and teaching more transparent. Instructors seem to develop relatively more coherent assignments targetting specific learning outcomes, and the students use their portoflios as tools to document what and how they are learning. In addition, there is a good deal of formal and informal conversations among students about eportfolios as well as an unprecedented cross-fertilization of ideas among colleagues within and outside of BMCC around the eportfolio development process. This researcher and two of his colleagues were awarded $5000 from a FIPSE (Fund for Improvement of Postsecondary Education U.S. Department of Education) project with an invitation to join a seminar at LaGuardia Community College, where they shared best practices with other professors from both public and private colleges and universities that are implementing eportfolios throughout the Mid-Atlantic and northeastern seaboard states. That experience was enriching for those faculty members who returned with relatively more tools, insights, and wisdom to rethink pedagogy and carry out a study on eportfolio implementation at BMCC.

Implications

The BMCC motto, "Start here, go anywhere," implies that this college is conscious of its transfer facilitation role. Suffice it to say that every community college has its own set of values, ethos, goals and strategic vision to uphold, preserve, achieve and refine as it thrives to accomplish its institutional mission. What also matters is that community colleges can learn from one another despite their different philosophies, traditions, cultures and modus operandi. While community colleges may be operating in different places at different times, they are not planetarily so different that they should not continue to explore ways to connect with one another and share best practices. From the social-constructivist approach articulated above, this paper argues that the implemention of the electronic portfolio creates both a webbing and a spiralling effect in teacher education that transcend efforts at Borough of Manhattan Community College. Whereas the spiralling effect is primarily manifest through the refinement of pedagogy and the re-adjustment of goals and values of faculty in the Early Childhood Education program, the webbing effect is felt throughout the challenges and transfer issues that the faculty and students face in the construction of electronic portfolios for future endeavors. It is equally important to note that both types of effects somehow overlap and create a (tertiary) ripple effect on each other. In that sense, both the spiralling and the weblike effects are dynamic in and of themselves, and they also operate in ways that are both cyclical and linear. In clear terms, there are new challenges and triumphs that emerge when a program decides to institute eportfolios. For this reason, there is a need to conduct research on how this tool is impacting different areas of the program. The Early Childhood Education program at BMCC is not exempt from this recommendation.

Summary

The BMCC electronic portfolio is arguably a standard-based structure that is used for both integrative learning and reflective practices. This tool is instituted in the Early Childhood Education program and its primary purpose is the promotion of student reflection. Curiously, instructors in the program do not utilize student portfolios for summative assessment and grading. Treating the student eportfolio as a final product, rather than a work-in-progress, could potentially defeat the purpose of lifelong learning envisaged by the ECE professors. Likewise, they do not judge the student reflective texts on the NAEYC professional standards, given that students' reflections are occurring in a spiralling manner and that new artifacts are continually being collected and selected for the portfolios from one course to the next. Equally noteworthy is the faculty's philosophy that students and their professors are invariably making connections in a weblike manner as they construct knowledge through interactions with diverse groups of professionals, colleagues at four-year institutions, and other stakeholders. Some of those types of learning somehow made their way fully or partially in the forms of course assignments, artifacts and reflections into the student portfolios. Additionally, there is a good deal of measurable and non-measurable kinds of professional competencies that are being constructed and refined through those different levels of interactions. New challenges and opportunities constantly emerge in the creation of portfolios to demonstrate how well program goals are being achieved.

It is arguably extremely difficult, if not impossible, to devise systematic assessment measures and grading systems to adequately capture and account for all those kinds of knowledge constructions either discretely or holistically. The Early Childhood Education program does not require students to develop portfolios as an exit strategy. But the program does integrate the electronic portfolio in its curriculum and uses it to facilitate course learning outcomes and professional competencies around NAEYC standards. From this perspective, grading and using portfolios for graduation might suggest a certain kind of finality about student learning. Doing so could send a counterproductive message to students about lifelong learning. The portfolios that students have created should not desist after graduation from the program, but they should rather be used to sustain efforts and ensure success in the students' journey onto becoming certified teachers. It makes sense for students to migrate with their portfolios from this community college and continue to use this tool in the senior colleges. For this happen, there needs to be ongoing conversations between BMCC's Early Childhood professors and their counterparts at the four-year institutions with which they have articulation agreements.

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ADVANTAGES OF USING THE LEED® GREEN BUILDING RATING SYSTEM TO ENHANCE UNIVERSITY OPERATIONS

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ABSTRACT

Universities benefit society through teaching, research, and service. They face mounting pressure to uphold public trust, account for outcomes, and cut costs. Adopting environmentally sustainable practices is one way to achieve such goals simultaneously. Today, universities across the US are adopting environmental sustainability as a pervasive, unifying, motivating force. They are placing environmental issues front and center –integrating them into the curriculum and using them as guiding principles in purchasing and in facilities planning, operations, and maintenance. In the past decade, universities have earned certification of more than 470 buildings through the US Green Building Council's (USGBC's) Leadership in Energy and Environmental Design (LEED) program.

The Council's LEED® Green Building Rating program provides a recognized system for assessing aspects of a building's design related to human and environmental health. A building can earn one of four LEED ratings (Certified, Silver, Gold, or Platinum). LEED assesses a building's projected performance and gauges the building owner's contribution to the environmental movement.

University officials are embracing the system for numerous reasons. Green buildings often cost less to operate. Orienting buildings with regard to climate and sun exposure, for instance, reduces heating, cooling, and lighting costs. Daylight, natural ventilation, and reduction of airborne toxins have been shown to improve human health, boost productivity and morale, and conserve natural resources. Green design also responds to ethical imperatives. LEED users help build capacity of the green building industry. They lessen demand for non-renewable resources. They can also protect waterways and restore wildlife habitats.

This paper is geared toward university administrators. It discusses how postsecondary institutions are using LEED to address environmental accountability and to control costs. It reports original, quantitative research about what types of universities have used the system successfully, what LEED categories they most frequently use, and what levels of certification they typically earn.

Keywords: University Operations, Quality Management, Operations Research, Environmental and Ethical Issues

HOW GREEN MARKETING AFFECTS CORPORATE POLICY

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ABSTRACT

The purpose of this study is to examine how green marketing can be developed and what incentives there are for companies to do so. To fulfill the objectives of this study, three research questions were formed and a qualitative case study was conducted of three companies from different industries. Interviews will allow the author to gain insight as to how companies develop their green marketing strategies and for what reasons. The results indicate that most companies are not segmenting their target markets based on the consumers' environmental attitude. Findings also indicate that green market strategies differ for each company and must be derived from a company's individual circumstances including its objectives, resources and competitive advantages. Furthermore, the findings show that most companies can implement green changes in their marketing mix but that these should only be actively promoted when a product's green attributes constitutes a key selling point. Finally, the findings indicate that financial benefits, and the possibility of gaining a competitive advantage, are the foremost incentives for implementing green measures.

HOW WATER ACCESS AFFECTS HOUSING PRICE IN A DEVELOPING COUNTRY: A HEDONIC ANALYSIS

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ABSTRACT

Using a hedonic framework, I study the relationship between housing prices and different kinds of water access. More specifically, I analyze how water access affects housing markets, and therefore, housing prices. The model is implemented using household data from Southwestern Sri Lanka, comprising 1723 households in 17 sub-regions around the city of Colombo. Households in the study area obtain water from three sources: (a) public water sources (well or tap); (b) private wells; or (c) a public water service provided by the local government through a water network, where households pay a fee in exchange for a certain level of water service (tap water access). I avoid multicollinearity issue by estimating the effects of having a tap water connection in a house and the effects of availability of water infrastructure separately. The results show that a private tap water connection is capitalized into higher house price and may impede efforts in poverty reduction vis-à-vis improved water infrastructure. In addition, private well is considered a worthy alternative to private tap, whenever the latter is not available.

Keywords: water access, housing price, housing market, hedonic analysis, developing country

Introduction

Water is a basic necessity for all human beings; we use water for drinking, cooking, bathing, washing (dishes, clothes), and for many other purposes. Water that is used for drinking or cooking is preferably of a higher quality than the quality of the water used for hygiene and other purposes. In addition, different households may have different preferences in the quality of water demanded; e.g., one household might require a very high quality of water for drinking, while another household might be fine with drinking a lower quality of water.

In many countries, water is provided by government through a piped water network, where households have to pay a fee in exchange for a certain level of water service. However, in some regions, especially in developing countries, it is too costly to build these networks or to ensure that every household have access to the network. Households may also choose not to tap into the system and instead depend on other water sources such as public wells, public taps (shared access to water network) and private wells. However, water from public wells typically has a lower quality and it might not be potable. In addition, there may be significant transaction costs associated with carrying water to the house, as well as a congestion effect as more people use this water source. If a network does exist, access sometimes cannot be guaranteed to be available at all time or the quantity of water available to a household may be limited.

Building water network infrastructure in predominantly poor areas could benefit the poor in two ways. First, by improving general health (via improved water quality), it may lead to increased productivity and, more generally, improve the quality of life. Second, a water network reduces the transactions costs of accessing water (if the alternative is hauling water from a public well). These are two common justifications for public investment in water supply infrastructure (WHO/UNICEF 2000). However, availability of water access through the network can lead to higher housing prices, to the extent that the benefits are capitalized into property values in the region. This paper investigates the social consequences of this prospect through a case study of three districts in Sri Lanka using a hedonic analysis, in which local provision of amenities, especially water access, is included. The hedonic model provides a simple, yet informative framework for analyzing the value of housing attributes embedded in house price, in this case especially neighborhood amenities. The empirical results allow assessment of the limitations of public policy. One implication may be that using targeted deployment of water network infrastructure for poverty reduction goals may have limited success.

The rest of the paper is structured as follows. The next section reviews studies on water valuation. The data are described and summary statistics are presented in Section 2. Section 3 discusses the theoretical model used in the analysis, while Section 4 contains the empirical framework, the estimation technique, and the results. Section 5 concludes.

Background

Valuation of water access becomes increasingly important as world population continues to grow while the total amount of available water, at best, remains the same. Given scarce resources and limited budgets, governments of developing countries have to analyze the costs and benefits of providing water infrastructure to cover water needs of every citizen.

In 2000, the United Nations announced the Millennium Development Goals, which consist of eight major goals encompassing poverty reduction, gender equality, improvement in health and education, and environment sustainability (UNDP 2006). The U.N. set 2015 as the deadline to achieve these goals. In terms of water access, the goal is to halve the proportion of people without reasonable access to safe drinking water by 2015, defined as availability of at least 20 liters per capita per day from the following water sources within one kilometer (0.62 mile) from a household: household connection, public tap, protected wells and protected spring or rainwater collection (UNDP 2006).

Most developed countries have 100% of their population with reasonable access to safe drinking water. For example, according to U.S. Geological Survey, an estimated 86% of the U.S. population obtained water through tap water networks where households pay a fee for a certain level of water service, while the remaining 14% relied on private wells (Kenny, et al. 2009). This is not the case in many developing countries, where it is sometimes too costly to build a network or to ensure that every household has

access to the network, and where the benefits cannot be clearly quantified. Instead, many households depend on unimproved water sources such as public wells and rivers. For example, the 2006 UNDP report asserts that only 22% of the total population in Ethiopia has access to improved water sources, with only 4% has private tap water connection. Water from public wells has a lower quality and it might not be potable; there is a congestion effect as more people use this water source and a transaction cost associated with water collection effort. On the other hand, if a water network does exist, access sometimes cannot be guaranteed to be available at all times or the quantity of water available to a household may be limited (ADB 2006).

Postel (1984) argues that households rarely pay the true cost of water. Governments typically finance water infrastructure using taxpayers' money—some of whom don't get to benefit from it—or with loans and/or aid. Even for households who use water from a private well, they don't pay for costs associated with congestion, pollution, or any other externalities. At the very least, tap water networks allow governments to somewhat offset the cost of supplying water with user fees. They also provide a way to control over water usage, promote water recycling and reuse, and prevent households from consuming contaminated water. Last but not least, charging households and firms for water means that it's possible to discourage them from using too much water.

Water valuation is commonly used for three kinds of water usages: water as an intermediate good (e.g., irrigation); water as a private good (e.g., drinking); and water as a public good, either as an amenity or with regards to recreational purposes (Young 1996). Since price of water is usually fixed or heavily regulated, valuing water as a private good using price of water directly can't quite recover the true demand for water. As an alternative, willingness to pay for water might be used to estimate the demand for water as a private good.

In the past, the majority of studies on water valuation as a private good have used contingent valuation or conjoint analysis methods to measure household or individual's willingness to pay for various alternatives of water service, some of which don't exist yet. These methods are known as stated preference methods. These methods allow researchers to investigate willingness to pay for different attributes of a good. The results could provide useful information on demand for the good or attributes, and could be highly relevant for policymakers when considering a new public good or service (Yang, et al, 2006). However, there are limitations in interpreting the results because a household or individual might actually behave differently under a likely scenario than what they stated they would do. Whittington et al. (2002) used a contingent valuation survey to estimate household's willingness to pay for improved tap water services (through planned privatization) in Kathmandu, Nepal. Using a conditional logit model, they found that households are willing to pay an average of $14.31 per month for improved water services, much higher than what they actually paid ($1.74 per month) for the existing service.1

1 The improved service consists of 24 hours/day availability, potable water right out of the faucet, and accurate

Revealed preference methods look at household or individual responses to actual different attributes of a good and use the information to analyze demand for the good and measure marginal willingness to pay for a change in an attribute. Such methods include hedonic and sorting equilibrium models. Since households reveal their preferences by choosing different quantity and/or quality of the good's existing attributes, these methods can be helpful in measuring welfare effects of varying certain attributes of a good, especially public goods or private goods that have spillovers. North and Griffin (1993) used the hedonic model to estimate household's willingness to pay for private water sources in the Bicol region of the Philippines. They divided households into three income groups based on imputed income: low income, middle income, and high income and performed the estimation separately for each household group. They found that household's willingness to pay for a tap water connection was 50% of monthly imputed rent in all income groups, while middle-income households were willing to pay 18% of the imputed rent to have a private well. However, this study also includes water for agricultural purposes, which complicates estimation because there is a significant difference between water demand for agricultural purposes and water demand for domestic purposes.

Yusuf and Koundouri (2005) used a hedonic analysis to study household's willingness to pay for various water sources in Indonesia. They did the estimation separately for urban and rural regions to avoid bias in sample selection. They found that urban households are willing to pay 25% of monthly imputed rent for a tap water connection, while rural households are willing to pay 14%.

Both studies above use imputed monthly rent as the dependent variable. Thus, the estimated coefficient for a water source—for example, tap water—could be construed as willingness to pay for having it available in a particular house. However, since the imputed rent is not in natural logarithm, the estimated willingness to pay doesn't allow for different income levels. North and Griffin avoid this problem somewhat by running the estimation separately for each income group. This paper uses the natural logarithm of imputed rent to indicate diminishing marginal return for increasing a house or neighborhood attribute. In addition, including distance between a house and a water source in the estimation can lead to multicollinearity due to correlation between this characteristic and available water access in the house. This paper estimates the effects of private tap water connection and water infrastructure on housing price separately to avoid this problem.

Data

Sri Lanka is an island country located in the Indian Ocean, south of India. Its total area is 65,610 square kilometers, about the size of West Virginia. The administrative capital is Sri Jayawardenapura Kotte, while the largest city is Colombo. In 2008, its population is an estimated 20.2 million people. Urban areas in Sri Lanka, which are located mostly in the western and southwestern parts along the coastline, comprise only five per cent of the total area of the country but an estimated 23% of the population. This obviously puts stress on amenities and services provided by the governing administrative units,

especially water supply. According to the latest Census of Population and Housing in 2001, only 26.9% of total population used piped water for drinking purposes. About 55% of total population used water from other improved water sources (protected wells and tube wells). In 2000, to achieve the MDG goal in improvement of water access, the government set a target of increasing the percentage of population with access to safe drinking water—defined as tap water and water from private wells (protected or tube wells)—to 86% of the population (DCS 2009). In addition, the long term goal is to increase the percentage of the population access to piped water to 40% by 2015.

To help evaluate the scope for the water supply expansion, specifically with respect to a piped water network expansion in three districts in the Western and Southern Provinces, a household survey was carried out by the World Bank (WB) and the Research Triangle Institute (RTI) with cooperation from the local government and University of Peradeniya in 2003.

The survey was conducted in three districts in southwestern region of Sri Lanka: Gampaha District, which is located north of Colombo; and Kalutara and Galle Districts, which are located in the coastal area south of Colombo. The sample comprises households from 595 GNs located in 17 DSs.2 The WB-RTI survey comprises questions about water supply, household behavior with respect to water usage, and sanitation in addition to questions on demographics and socioeconomic conditions. The number of sample of households was designed to represent the population of each GN; in other words, the more heavily populated a GN is, the more households were selected from it. The final version of the dataset consists of 1,723 households comprising a total of 8,228 household members in 548 GNs, used throughout the estimations. The following sub-sections describe household demographics and housing attributes.

Household Characteristics

Three main water sources are identified: private tap, defined as piped water with the main connection located within the premises; private well, defined as a protected well or tube well located within the premises; and public water sources.3 Households are then divided along the lines of these water sources into four groups: those who use public water sources; those who rely on private tap exclusively; those who use only a private well within the premises; and those who have both private tap and a private well. Table 1 shows the breakdown of households by water access. About 11% of survey households use public water sources, while 38% use private tap (exclusively or together with a private well), and 63% use a private well (exclusively or together with private tap). The water access pattern in Gampaha is distinctly different from that in Kalutara and Galle. Households in Gampaha are more likely to use a private well than private tap than those in the other two districts, while households in Kalutara and

2 Sri Lanka consists of nine provinces. Each province consists of several Divisional Secretaries (DS). Each DS consists of several Grama Niladharis (GN), the smallest administrative unit.
3 Public water sources can be a well or a tap that is located outside the premises and shared with other households.

Galle are more likely to use private tap than a private well. To understand why these patterns exist, we look at household characteristics of each water access user group.

Tables 2-4 show summary statistics of household characteristics grouped by water access in each district. In terms of age and education, households in each group share similar characteristics across districts. In particular, public water users tend to be younger and less educated. Households who use both private tap and a private well are older and more educated than those who use only one private water source.

Monthly household income is calculated as the sum of total wages of working household members, other income, remittance from family members who work overseas, and the total value of any assistance a household receives. The average monthly household income, defined as wages plus other income, is Rs. 15,923, or $1,979/year.4 Samurdhi, the biggest public welfare program in Sri Lanka, consists of three programs: consumption grants; savings, credit, and entrepreneurial loans; and rehabilitation and development of community infrastructure. The consumption grants program, the biggest component of Samurdhi (80%), provides food stamps to households with total monthly income of Rs. 1,000 or less. Eligible households can only use the food stamps in government-owned stores and are expected to "voluntarily" spend some time working on community development projects besides contributing 20% of the value of the stamps toward savings that cannot be accessed for the first five years. On average, 18% of survey households received some kinds of Samurdhi payments.5 Public water users are more likely to receive Samurdhi payments than private water users.

On average, households in Kalutara reported lower monthly income compared to those in Gampaha and Galle. Monthly household expenditure includes imputed monthly rent. Since about 95% of sample households own their houses and therefore do not pay rent, on average, total expenditure exceeds household income. Among the four household groups, public water source users have the lowest total expenditure.

Housing rent is based on self-reported total house value for homeowners or monthly rental for renters.6 Across the entire sample, the average imputed monthly house rent, which is the proxy for housing value, is Rs. 6,803, with Gampaha having the highest imputed rent, and Kalutara the lowest. On average, imputed rent as expenditure share is the lowest for public water users and the highest for households who use both private water sources. This phenomenon confirms the common observation that the

4 Rs = Sri Lanka rupees. Based on historical spot exchange rates as reported by the Federal Reserve System, the average exchange rate in 2003 was US$1 = Rs. 96.54.
5 To determine eligibility, Samurdhi program administrators use income and other household characteristics such as income sources, living conditions, and number of durable assets owned. Low-income households with many family members, lack of access to electricity or latrine, fewer assets, and lack of property are more likely to be eligible for the program (Glinskaya 2000).
6 Missing house values were imputed by the RTI using extrapolation.

income elasticity of housing is very close to one. Households with higher income spend more on housing compared to those with lower income.

Different water sources also reflect differences in water quality. The WB-RTI survey recorded these differences as perceived by households, and they are summarized in Table 5. Households were asked to consider the quality of the water source they were using in five categories: taste, smell, color or clearness, safety, and reliability. The following discussion pertains to perceived water quality in the rainy season. In terms of taste, color, and safety, water from private tap is considered superior to well water and public water. Private well water is perceived superior in reliability and comparable to private tap water in terms of smell. Public water is considered inferior to private water in all five characteristics. In dry season, less than 20% judged the water quality of any of the water sources to be any different from that in rainy season.

Among household groups in each district, average monthly water consumption of public water users is the lowest while households who use both private tap and private well have the highest average water consumption. These numbers were converted to liters per capita per day (lcd), which is the common measure used in water studies and also by the WHO. In this case, water consumption is defined as the amount of water consumed for drinking, personal hygiene, and other domestic use (such as cooking). While Gleick (1996) suggests a minimum requirement of water consumption of 50 lcd, more recent studies suggest an optimal level of 100-200 lcd (Howard and Bartram 2003, Chenoweth 2008). According to the United Nations, the average personal water use in 2002 ranged from the highest of 575 lcd in the U.S. to the lowest of 4 lcd in Mozambique (UNDP 2006).

The average water consumption of the survey households is 29 cubic meters per month per household which converts to 234 lcd. However, tables 2-4 show that there is variability across districts and different water sources. Households who use public water sources consumed an average of 94-136 lcd, while private water users consumed an average of 172-318 lcd. While there is little difference in water consumption between private tap users and private well users, there seems to be a significant difference otherwise.

Housing Attributes

Tables 6-8 summarized housing characteristics in each district, grouped by water access. The majority of housing is reported as owned (as opposed to rented). The majority of the houses are single family, single story units, but about 11% are multi family, single story units. In terms of number of rooms (excluding bathrooms and kitchen), houses with access to public water sources have fewer rooms than houses with access to private water sources. Cement seems to be the most common material for house floor in all districts, but houses with access to public water sources are less likely to have cement walls than those with access to other water sources. Tiles are the most common material for house roof, with asbestos a distant second. Houses using only public water sources are the least likely to have electricity, phone line,

and a water-sealed toilet, while houses with access to private tap and a private well are the most likely to have those amenities.

Tables 6-8 also summarize distances from a house to the main roads, schools7, the coastline, a landfill, and a post office. In Gampaha and Galle, houses are on average closer to the main roads than houses in Kalutara. In terms of proximity to schools and post offices, there doesn't seem to be a distinct difference across water sources. In terms of distance to the coastline, houses with a private well are on average farther from the coastline than houses with access to other water sources. In Kalutara and Galle, houses with a private well are also the farthest from a landfill compared to houses with access to other water sources.

The WB-RTI survey also performed GPS reading of the houses and the neighborhood, which allows GIS mapping to locate each house and identify amenities and disamenities. Figure 1 shows the geographical locations of tap water networks and surveyed houses in each district. In each district, houses with no access to private tap are located far from the coastline and therefore far from a tap water network. In particular, houses with a private well are more likely to be located far from the tap water networks. In fact, houses using public water sources are more likely to be closer to a tap water network than houses with a private well.

Location seems to be important to a house's access to private tap, and this is determined by two things: 1) availability of a tap water network in a GN, and 2) distance between the house and the tap water network. On average, houses in Gampaha are farther from a tap water network than those in the other two districts. The average house in Gampaha is about 2.6 kilometers (or 1.6 miles) from a tap water network, while the average house in Kalutara and Galle is located 265 meters (0.16 mile) and 551 meters (0.34 mile) from such network, respectively. In addition, tap water network is not as prevalent in Gampaha as in Kalutara and Galle. Only 30% of the GNs in Gampaha have a tap water network, compared to 82% in Kalutara and 63% in Galle. However, in all the three districts houses with a private tap connection—whether or not it also has a private well—are closer to a tap water network than houses with access to other water sources.

In summary, houses with a private tap connection are most likely to be located in a GN with a tap water network and in close proximity to the network. Houses with a private well are the farthest from a tap water network and the coastline. Houses using public water sources don't necessarily lack neighborhood amenities such as availability of a tap water network or proximity to a school and the main roads.

Model

7 Schools in the survey include pre-schools, primary schools, secondary schools, and colleges.

Hedonic models are very useful for measuring the values of differing qualities or attributes of a good that can't be priced exogenously. The idea behind the hedonic approach is that price of a heterogeneous good is a function of demand for separate attributes of the good, and that the implicit price of an attribute can be estimated directly. Court (1939) pioneered the use of this approach to study how changes in a good's attribute could lead to changes in the good's price. He argued for a hedonic price index which includes improvements in price indexes to account for changes to a good's attributes over time. Griliches (1961) employed this idea in an early empirical application using passenger car data.

The hedonic approach has also been utilized to study household location choice by estimating the implicit price of each attribute of a locally available public good. There are three main assumptions in this approach. First, a hedonic analysis assumes the good is heterogeneous. The second assumption is that supply is assumed to consist of a continuum of the good with different quantity of attributes and households choose to consume a unique combination of these attributes that maximize their utility, given their budget constraints. Lastly, the market is assumed to be perfectly competitive and in an equilibrium.8 Following Rosen (1974), households maximize utility from n housing attributes $z_1, z_2, \dots, z_n$ and numeraire consumption bundle x, subject to budget constraint, where y denotes household income and $p(z)$ denotes housing price as a function of housing attributes:

$$\max_{x,z} U(x, z_1, z_2, \dots, z_n) \quad subject\ to\ y = x + p(z) \tag{1}$$

The indirect utility function can be written as:

$$U(y - \theta, z_1, z_2, \dots, z_n) \tag{2}$$

The bid function $\theta(z; u, y)$ is what a household is willing to pay for combinations of housing attributes at a given utility and income levels, and it is increasing in z_i at a decreasing rate. Household utility is maximized when $\theta(z^*; u^*, y) = p(z^*)$. Households with similar bid function will purchase housing with similar attributes, and this leads to an observed spatial distribution of households.

On the supply side, firms maximize profits when their offer function, $\phi(z^*; \pi^*, \beta)$, where π denotes profits and β represents production costs, equals $p(z^*)$. In equilibrium, each household maximizes utility and each producer maximizes profits. The market clears, quantity supplied equals quantity demanded such that:

$$p(z^*) = \theta(z^*; u^*, y) \quad p(z^*) = \phi(z^*; \pi^*, \beta) \tag{3}$$

Using the FOCs, marginal price of each housing attribute can be computed as follows:

$$\frac{\partial p(z_i)}{\partial z_i} = \frac{\partial U / \partial z_i}{\partial U / \partial x} = \frac{\partial \theta}{\partial z_i}, i = 1, \dots, n \tag{4}$$

8 This might not be a reasonable assumption in a developing region; however, without having more information about the housing markets in each district, this assumption is necessary (Megbolugbe 1989, Yusuf and Resosudarmo 2009).

In the empirical implementation, the estimated hedonic price function—$p(z)$—cannot identify demand and/or supply and assumes the market is in equilibrium.

Empirical Implementation

To gauge the effect of different water sources on housing price in the three sample districts, I used a traditional hedonic estimation technique to recover how various attributes of a good affect the good's price.

Variables that affect housing price are (a) housing characteristics such as number of rooms, housing material, housing type, private tap connection, and availability of a private well within the premises; and (b) neighborhood amenities such as the main roads, tap water networks, and schools. This relationship can be represented by the following log linear equation:

$$\log p = \alpha_0 + \alpha_1 Z_1 + \alpha_2^t Z_2^t + \alpha_2^d \log Z_2^d + \varepsilon \qquad (5)$$

where p denotes price of a housing unit, Z_1 denotes observed housing attributes, Z_2 denotes observed amenities, and ε is unobserved housing attributes, which is assumed to be independently and identically distributed.

Observed amenities are distinguished between two variables: 1) whether the housing unit is in a neighborhood with a tap water network, denoted by Z_2^t; and 2) distances from the house to the following amenities/disamenities: the main roads, tap water network, a school, a post office, and a garbage dump or landfill, denoted by Z_2^d. Natural logarithm of distances to the amenities is used in the estimation.

This framework allows for diminishing marginal utility of a house attribute, which is a reasonable assumption. Price elasticity of each housing attribute can be calculated directly from the results, and marginal willingness to pay for an increase in a housing attribute can be estimated as shown in (4). Since distances in natural logarithm are used in this estimation, the coefficients can be interpreted as elasticities. Using this simple model, we can analyze welfare effects of adding tap water networks in a neighborhood or increasing proximity to any of the above amenities.

Results

The estimation was done separately for each district using three models. Model 1 includes a dummy variable on whether a house has a tap water connection and interaction between private tap and private well. Model 2 includes a dummy variable on whether the GN a house is located in has a tap water network. Model 3 includes distance to the nearest tap water network (not necessarily in the same GN the house is located in). All models investigate the effect of distances from a house to the main roads, schools, post office, and garbage dumps and include DS dummy variables to control for unobserved DS fixed effects.

Table 9 shows Model 1 estimation results. Both tap water connection and private well have the highest value in Kalutara. A tap water connection within a house's premises increases house value by 43.5% in Kalutara, 19.4% in Gampaha, and only 6.5% in Galle. A private well increases house value by 29% in Kalutara, compared to 20% in Gampaha. Note that private well is slightly more valuable than a private tap water connection in Gampaha. In Galle, the coefficient of a private well is negative and not significant. The interaction effect of both private water sources is positive only in Galle.

Distance to the main roads has a negative sign in each district, which indicates that proximity to the main roads is considered an amenity. Distance to a school has a negative sign in Gampaha and Kalutara, but positive in Galle. Distance to a garbage dump has a negative sign in all the three districts, while distance to a post office has a negative sign in Gampaha and positive in the other two districts. However, none of these coefficients is statistically significant.

Clearly, there is variability in the estimated value of each private water source in each district with Kalutara having the highest and Galle the lowest. In particular, private tap connection is more valuable than a private well in Kalutara, but they are about as equally valuable in Gampaha.

In Galle, private tap has an estimated small value while a private well is not valuable. The implication is that both private well and private tap are common amenities in Galle, so access to only one of them doesn't increase house value. However, access to both private well and private tap is a desirable amenity and hence increases house value.

In Gampaha and Kalutara, fewer than half of the sample houses have a private tap connection. This might contribute to the higher value of a private tap connection in these two districts compared to that in Galle. The results also indicate that private well is a valuable alternative to private tap in Gampaha and Kalutara.

Table 10 estimated Model 2. The results show that tap water network availability in a GN is a valuable amenity in each district, especially in Gampaha. Availability of a tap water network in a GN increases the value of a house by 25% in Gampaha and it is statistically significant. The results reflect the general availability of tap water networks in each district: it is valued higher in Gampaha than in the other two districts because it is not as commonly found in a GN in this district.

Table 11 shows the results of Model 3 estimation for each district. Distance to a tap water network has a negative sign for Gampaha and Galle and a positive sign for Kalutara. The implication is that proximity to a tap water network is a valuable amenity in Gampaha and Galle, but not in Kalutara. Even though tap water networks themselves are a valuable amenity in Kalutara as indicated by Model 2 results, 90% of the sample houses in this district are conveniently close to a tap water network and therefore proximity to the network is not quite as valuable as is the case in the other two districts. The effect of distance is

largest in Gampaha, possibly due to the fact that most houses in this district are located far from a tap water network compared to houses in Kalutara and Galle.

Conclusions

The hedonic analysis was done using housing attributes by district, controlling fixed effects on DS level. The estimation results by district show that in Gampaha, private well is slightly more valuable than a private tap connection. In Kalutara and Galle, private tap water connection is more valuable than a private well. Having both private water sources leads to an increase in house value in each district. However, the numbers suggest that private well and private tap are substitutes in Gampaha and Kalutara, but they are complements in Galle.

We can now compute the welfare effect of changing the quantity of each of amenities of interest. Table 12 shows imputed willingness to pay for private tap connection, private well, and tap water network availability in a GN, as well as marginal willingness to pay for proximity to a tap water network, computed by district.

Availability of a tap water network in the GN a house is in increases house value in each district. The increase is especially high in Gampaha, while the increase in Kalutara and Galle is about the same. The implication is that adding a tap water network in a GN leads to higher house price. However, as more GNs add a network, the resulting increase in house value becomes smaller.

Tap water network availability in a GN implies proximity to the network. Since houses in Gampaha are less likely to be near a tap water network, the distance effect is stronger in this district. Indeed, households in Gampaha are the most sensitive to changes in this variable compared to those in the other two districts.

In conclusion, a hedonic analysis provides a basic understanding of the relationship between water-related house attributes and house price and hence helps us in estimating household's willingness to pay for water infrastructure. The clear implication of the empirical results is that a tap water connection and/or a private well are capitalized into higher imputed rent. This raises the possibility that building or improving water infrastructure in lower-income neighborhoods may lead to higher house price which may effectively crowd out low-income households. The extent to which this crowding out occurs in my sample is a fruitful topic currently under investigation.

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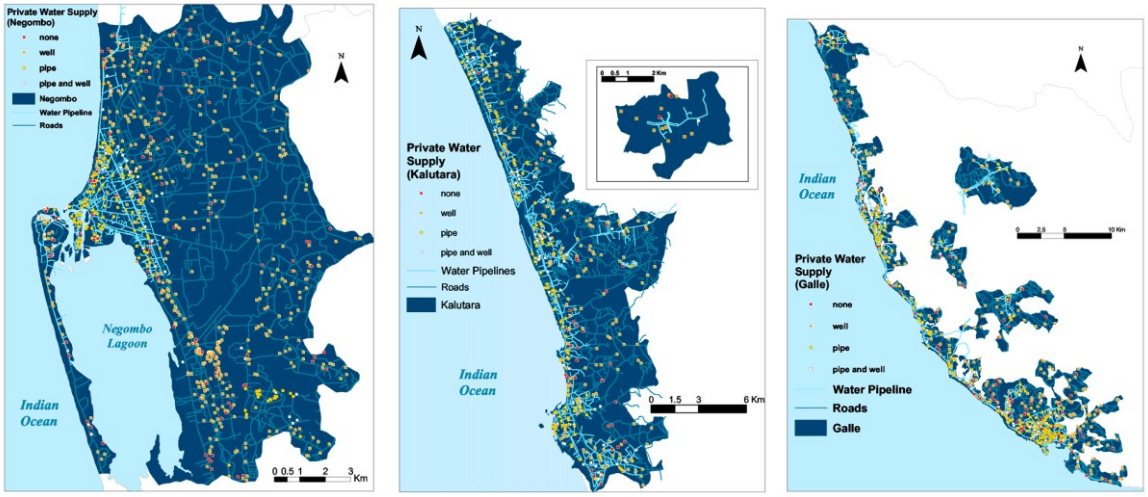
Figure 1. Water Infrastructure in Gampaha, Kalutara, and Galle Districts



The two DSs surveyed in Gampaha District are also known as Greater Negombo. Source: Pattanayak et al., 2005

Table 1. Household Breakdown by Water Access

Water Access	Districts			All districts
	Gampaha	Kalutara	Galle	
Public sources (public well or public tap)	92	33	64	189
	(12%)	(8%)	(11%)	(11%)
Private tap only	142	109	195	446
	(19%)	(28%)	(35%)	(26%)
Private well only	487	184	215	886
	(63%)	(47%)	(38%)	(51%)
Private tap and well	47	68	87	202
	(6%)	(17%)	(16%)	(12%)
TOTAL	768	394	561	1,723
District Percentages*	45%	23%	33%	100%

*Percentages add up to more than 100% due to rounding.
Source: World Bank - RTI Household Survey, 2003

Table 2. Summary of Households Characteristics by Water Access in Gampaha District

Descriptions	Public sources (N = 92)		Private tap only (N = 142)		Private well only (N = 487)		Private well & tap (N = 47)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Size of household	4.25	1.44	4.71	1.53	4.56	1.62	4.36	1.26
Number of male members	2.04	1.06	2.15	1.13	2.14	1.10	2.00	0.98
Number of female members	2.21	1.13	2.56	1.04	2.42	1.27	2.36	0.99
Number of members 0-14 years old	1.15	1.13	0.96	1.07	0.99	1.00	0.70	0.83
Number of members 15-59 years old	2.77	1.27	3.23	1.35	3.14	1.51	3.04	1.49
Number of members 60 years old or older	0.33	0.58	0.52	0.68	0.43	0.67	0.62	0.74
Household head is male (proportion)	0.80	0.40	0.82	0.39	0.86	0.35	0.91	0.28
Number of members with no education	0.37	0.64	0.27	0.51	0.34	0.61	0.17	0.43
Number of members with 1-9 years of education	1.95	1.50	1.84	1.73	1.58	1.36	1.36	1.26
Number of members with 10-13 years of education	1.82	1.34	2.39	1.48	2.45	1.59	2.60	1.26
Number of members with college education	0.03	0.23	0.07	0.33	0.08	0.32	0.13	0.45
Number of workers per household	1.55	0.78	1.82	0.96	1.87	1.24	1.96	1.00
Monthly household income	13,598	7,953	15,740	9,699	16,933	11,799	17,454	14,043
Household receives Samurdhi payments (proportion)	0.28	0.45	0.19	0.39	0.16	0.37	0.06	0.25
Monthly household total expenditure[1]	14,583	7,942	21,046	15,774	19,592	11,122	20,795	10,449
Imputed monthly housing rent	4,299	4,377	7,487	6,098	7,374	6,020	8,280	6,158
Imputed monthly rent as share of household expenditure	0.27	0.17	0.33	0.17	0.34	0.18	0.37	0.19
Monthly water consumption (in cubic meters)[2]	11.98	7.74	28.55	21.23	36.53	69.84	38.16	22.82
Water consumption per capita per day (in liters)[2,3]	94.20	71.25	229.51	234.54	317.79	862.45	318.30	214.44
Monthly water bill (only for private tap users)	--	--	273.92	627.40	--	--	158.67	184.69
Household owns a water tank (for storage)[4]	0.40	0.49	0.35	0.48	0.53	0.50	0.45	0.50

Education was recorded only for household members who are older than 11 years old. Household income, expenditure, rent, and water bill are in Sri Lankan rupees.

[1]Total expenditure is larger than incomes because it includes imputed rent. 93% of households reported owning their home.

[2]Not all households responded; 43 households who use public water sources and 2 households who used private tap didn't respond.

[3]The district average is 285.57 lcd.

[4]There are three missing observations: one each in public water users, private tap users, and private well users.

Source: World Bank - RTI Household Survey, 2003

Table 3. Summary of Households Characteristics by Water Access in Kalutara District

Descriptions	Public sources (N = 33)		Private tap only (N = 109)		Private well only (N = 184)		Private well & tap (N = 68)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Size of household	5.33	1.69	5.17	2.32	4.92	1.91	5.16	2.20
Number of male members	2.61	1.32	2.62	1.45	2.45	1.23	2.28	1.29
Number of female members	2.73	1.01	2.54	1.45	2.47	1.23	2.88	1.51
Number of members 0-14 years old	1.61	1.20	1.34	1.35	1.02	1.11	0.88	0.95
Number of members 15-59 years old	3.27	1.51	3.28	1.72	3.40	1.66	3.46	1.80
Number of members 60 years old or older	0.45	0.71	0.54	0.74	0.50	0.72	0.82	0.83
Household head is male (proportion)	0.88	0.33	0.83	0.37	0.90	0.30	0.84	0.37
Number of members with no education	0.70	1.02	0.55	0.84	0.36	0.59	0.35	0.57
Number of members with 1-9 years of education	2.45	1.54	1.77	1.71	1.88	1.62	1.49	1.55
Number of members with 10-13 years of education	2.09	1.40	2.70	1.75	2.52	1.61	3.06	1.80
Number of members with college education	--	--	0.06	0.23	0.13	0.48	0.18	0.46
Number of workers per household	1.70	1.05	1.71	0.86	1.78	0.91	1.96	1.07
Monthly household income	8,558	5,068	15,116	9,798	13,845	10,208	20,583	14,201
Household receives Samurdhi payments (proportion)	0.55	0.51	0.15	0.36	0.17	0.38	0.09	0.29
Monthly household total expenditure[1]	9,308	4,695	18,898	10,261	16,400	9,267	21,959	10,597
Imputed monthly housing rent	2,444	2,514	6,884	5,324	6,037	5,106	8,749	6,391
Imputed monthly rent as share of household expenditure	0.23	0.16	0.34	0.15	0.33	0.16	0.36	0.15
Monthly water consumption (in cubic meters)[2]	16.17	6.53	24.65	11.87	24.95	16.78	37.80	22.11
Water consumption per capita per day (in liters)[2,3]	103.39	39.68	185.53	127.56	187.87	151.05	296.27	316.67
Monthly water bill (only for private tap users)	--	--	159.74	248.27	--	--	149.10	195.21
Household owns a water tank (for storage)	0.09	0.29	0.40	0.49	0.49	0.50	0.43	0.50

Education was recorded only for household members who are older than 11 years old. Household income, expenditure, rent, and water bill are in Sri Lankan rupees.

[1]Total expenditure is larger than incomes because it includes imputed rent. 98% of households reported owning their home.

[2]Not all households responded; there are two missing observations from the public sources users.

[3]The district average is 199.34 lcd.

Source: World Bank - RTI Household Survey, 2003

Table 4. Summary of Households Characteristics by Water Access in Galle District

Descriptions	Public sources (N = 64)		Private tap only (N = 195)		Private well only (N = 215)		Private well & tap (N = 87)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Size of household	5.05	2.07	5.03	1.91	4.78	1.68	4.78	1.50
Number of male members	2.50	1.48	2.54	1.34	2.33	1.16	2.32	1.14
Number of female members	2.55	1.22	2.49	1.24	2.45	1.14	2.46	1.10
Number of members 0-14 years old	1.33	1.14	1.24	1.21	0.92	1.06	0.83	1.10
Number of members 15-59 years old	3.30	1.53	3.25	1.59	3.14	1.68	3.14	1.40
Number of members 60 years old or older	0.42	0.69	0.54	0.73	0.72	0.81	0.82	0.81
Household head is male (proportion)	0.88	0.33	0.85	0.36	0.84	0.37	0.80	0.40
Number of members with no education	0.55	0.92	0.36	0.63	0.33	0.59	0.30	0.65
Number of members with 1-9 years of education	2.20	1.63	1.64	1.52	1.57	1.28	1.29	1.20
Number of members with 10-13 years of education	2.19	1.45	2.82	1.45	2.65	1.59	2.83	1.47
Number of members with college education	--	--	0.17	0.50	0.19	0.55	0.31	0.78
Number of workers per household	1.73	0.98	1.81	0.97	1.78	0.93	1.99	0.96
Monthly household income	10,455	5,685	18,575	34,841	14,100	13,148	19,334	16,046
Household receives Samurdhi payments (proportion)	0.41	0.50	0.16	0.37	0.16	0.37	0.10	0.31
Monthly household total expenditure[1]	11,876	7,244	20,062	11,866	15,726	8,573	21,009	10,951
Imputed monthly housing rent	3,778	4,464	7,340	5,936	6,068	5,287	8,840	6,197
Imputed monthly rent as share of household expenditure	0.27	0.16	0.33	0.17	0.34	0.18	0.39	0.15
Monthly water consumption (in cubic meters)[2]	18.66	29.09	27.19	14.78	22.78	26.41	33.08	14.41
Water consumption per capita per day (in liters)[2,3]	135.81	229.85	204.03	168.74	172.29	183.98	250.32	135.39
Monthly water bill (only for private tap users)	--	--	241.90	395.25	--	--	133.18	197.67
Household owns a water tank (for storage)	0.08	0.27	0.44	0.50	0.44	0.50	0.43	0.50

Education was recorded only for household members who are older than 11 years old. Household income, expenditure, rent, and water bill are in Sri Lankan rupees.

[1]Total expenditure is larger than incomes because it includes imputed rent. 97% of households reported owning their home.

[2]Not all households responded; there are three missing observations: one from public sources users and two from private tap users.

[3]The district average is 191.32 lcd.

Source: World Bank - RTI Household Survey, 2003

Table 5. Summary Statistics on Perceived Water Quality

Season	Characteristics	Quality	Private tap	Private well	Public water
			(N = 648)	(N = 1,088)	(N = 189)
Rainy	Taste	Good or excellent	95.4%	79.0%	43.9%
		Bad or poor	4.3%	19.4%	10.6%
		Don't know or no response	0.3%	1.6%	45.5%
	Smell	Little or no smell	99.4%	96.7%	56.1%
		Some to serious smell	0.3%	2.1%	1.6%
		Don't know or no response	0.3%	1.2%	42.3%
	Color	Clear or very clear	94.0%	85.6%	54.5%
		Dirty or worse	5.6%	13.4%	5.8%
		Don't know or no response	0.5%	1.0%	39.7%
	Safety	Little or no risk	98.5%	88.5%	50.3%
		Some to serious risk	1.1%	10.1%	8.5%
		Don't know or no response	0.5%	1.4%	50.3%
	Reliability	Regular or very regular	64.2%	96.1%	46.0%
		Irregular or unreliable	35.7%	2.8%	11.6%
		Don't know or no response	0.2%	1.1%	42.3%
	Characteristics	**Comparison to rainy season**	**Private tap**	**Private well**	**Public water**
Dry	Taste	Better	6.6%	10.9%	3.7%
		Worse	7.6%	8.3%	3.2%
		No difference	85.8%	80.8%	93.1%
	Smell	Better	14.0%	17.7%	6.9%
		Worse	0.2%	1.3%	--
		No difference	85.8%	81.1%	93.1%
	Color	Better	11.4%	12.1%	4.2%
		Worse	2.6%	6.8%	2.1%
		No difference	86.0%	81.1%	93.7%
	Safety	Better	13.0%	14.9%	5.8%
		Worse	1.2%	4.2%	0.5%
		No difference	85.8%	80.9%	93.7%
	Reliability	Better	7.3%	10.1%	3.7%
		Worse	6.9%	9.0%	3.2%
		No difference	85.8%	80.9%	93.1%

Percentages can be less or more than 100% due to rounding.
Source: World Bank - RTI Household Survey, 2003

Table 6. Summary of Housing Attributes in Gampaha District

Descriptions	Public sources (N = 92)		Private tap only (N = 142)		Private well only (N = 487)		Private well & tap (N = 47)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Home ownership reported (proportion)	0.83	0.38	0.91	0.29	0.94	0.23	1.00	0.00
Number of rooms[1]	3.05	1.59	3.44	1.39	4.12	2.30	3.89	1.43
Single family, single story unit (proportion)	0.91	0.28	0.74	0.44	0.89	0.32	0.81	0.40
Single family, multi story unit (proportion)	0.01	0.10	0.13	0.34	0.02	0.14	0.06	0.25
Multi family, single story unit (proportion)	0.08	0.27	0.12	0.33	0.09	0.29	0.13	0.34
Multi family, multi story unit (proportion)	-	-	0.01	0.08	-	-	-	-
Cement floor (proportion)	0.91	0.28	0.94	0.24	0.92	0.27	0.94	0.25
Tiled or brick tiled floor (proportion)	0.07	0.25	0.06	0.23	0.07	0.26	0.06	0.25
Cement walls (proportion)	0.87	0.34	0.99	0.12	0.93	0.26	0.98	0.15
Red/raw brick or mud walls (proportion)	0.01	0.10	-	-	0.02	0.16	-	-
Wood walls (proportion)	0.08	0.27	0.01	0.08	0.03	0.18	-	-
Concrete roofing (proportion)	0.10	0.30	0.13	0.34	0.07	0.26	0.21	0.41
Asbestos roofing (proportion)	0.12	0.33	0.15	0.36	0.06	0.24	0.04	0.20
Metal sheet roofing (proportion)	0.08	0.27	0.01	0.12	0.04	0.20	-	-
Tiled roofing (proportion)	0.64	0.48	0.68	0.47	0.80	0.40	0.74	0.44
Electric connection (proportion)	0.77	0.42	0.96	0.18	0.94	0.24	0.98	0.15
Phone line (proportion)	0.30	0.46	0.48	0.50	0.39	0.49	0.47	0.50
Water-sealed toilet or septic-tank (proportion)	0.78	0.41	0.86	0.35	0.96	0.20	0.91	0.28
House is in GN with tap water network (proportion)	0.33	0.47	0.82	0.39	0.19	0.39	0.68	0.47
Public well/tap is available in GN (proportion)	0.64	0.48	0.12	0.33	0.47	0.50	0.43	0.50
Distance to the main roads (in meters)	70	69	52	51	62	60	45	34
Distance to a tap water network (in meters)	2,649	2,485	1,055	2,259	3,191	2,361	1,428	2,492
Distance to a school (in meters)	548	317	450	265	579	319	475	310
Distance to the coastline (in meters)	1,969	2,022	1,107	1,265	2,675	2,074	1,329	1,352
Distance to a post office (in meters)	890	497	717	404	952	482	847	522
Distance to a garbage dump or landfill (in meters)	1,013	1,157	425	267	962	883	841	1,074

[1]Excluding bathrooms and kitchens.

Source: World Bank - RTI Household Survey, 2003

Table 7. Summary of Housing Attributes in Kalutara District

Descriptions	Public sources (N = 33)		Private tap only (N = 109)		Private well only (N = 184)		Private well & tap (N = 68)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Home ownership reported (proportion)	0.94	0.24	0.95	0.21	0.99	0.10	0.99	0.12
Number of rooms[1]	2.58	1.28	3.89	1.42	3.85	1.59	4.51	1.81
Single family, single story unit (proportion)	0.85	0.36	0.82	0.39	0.88	0.33	0.81	0.40
Single family, multi story unit (proportion)	-	-	0.04	0.19	0.01	0.07	0.03	0.17
Multi family, single story unit (proportion)	0.12	0.33	0.13	0.34	0.11	0.31	0.13	0.34
Multi family, multi story unit (proportion)	0.03	0.17	0.02	0.13	0.01	0.07	0.03	0.17
Cement floor (proportion)	0.94	0.24	0.92	0.28	0.94	0.24	0.90	0.31
Tiled or brick tiled floor (proportion)	0.03	0.17	0.06	0.25	0.05	0.22	0.09	0.29
Cement walls (proportion)	0.79	0.42	0.99	0.10	0.95	0.22	1.00	0.00
Red/raw brick or mud walls (proportion)	0.09	0.29	-	-	0.02	0.15	-	-
Wood walls (proportion)	0.09	0.29	-	-	0.02	0.15	-	-
Concrete roofing (proportion)	-	-	0.07	0.26	0.06	0.24	0.04	0.21
Asbestos roofing (proportion)	0.09	0.29	0.24	0.43	0.12	0.33	0.15	0.36
Metal sheet roofing (proportion)	0.15	0.36	0.02	0.13	0.03	0.18	0.01	0.12
Tiled roofing (proportion)	0.76	0.44	0.67	0.47	0.78	0.41	0.79	0.41
Electric connection (proportion)	0.76	0.44	0.99	0.10	0.96	0.20	1.00	0.00
Phone line (proportion)	0.06	0.24	0.34	0.48	0.30	0.46	0.60	0.49
Water-sealed toilet or septic-tank (proportion)	0.91	0.29	0.96	0.19	0.96	0.19	0.99	0.12
House is in GN with tap water network (proportion)	0.76	0.44	0.99	0.10	0.75	0.43	0.99	0.12
Public well/tap is available in GN (proportion)	0.64	0.49	0.35	0.48	0.41	0.49	0.22	0.42
Distance to the main roads (in meters)	482	1,699	49	39	470	1,655	268	1,290
Distance to a tap water network (in meters)	363	460	73	129	430	593	74	117
Distance to a school (in meters)	589	320	792	543	715	480	807	630
Distance to the coastline (in meters)	2,415	3,410	885	943	3,030	3,351	1,639	2,735
Distance to a post office (in meters)	1,018	466	1,077	816	1,210	785	1,099	757
Distance to a garbage dump or landfill (in meters)	1,015	851	779	664	1,321	1,091	751	745

[1]Excluding bathrooms and kitchens.

Source: World Bank - RTI Household Survey, 2003

Table 8. Summary of Housing Attributes in Galle District

Descriptions	Public sources (N = 64)		Private tap only (N = 195)		Private well only (N = 215)		Private well & tap (N = 87)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Home ownership reported (proportion)	0.98	0.13	0.95	0.22	1.00	0.07	0.97	0.18
Number of rooms[1]	2.91	1.12	4.02	1.84	4.03	1.68	4.31	1.67
Single family, single story unit (proportion)	0.86	0.35	0.85	0.36	0.88	0.32	0.84	0.37
Single family, multi story unit (proportion)	0.03	0.18	0.06	0.23	0.01	0.10	0.03	0.18
Multi family, single story unit (proportion)	0.11	0.31	0.10	0.30	0.11	0.31	0.11	0.32
Multi family, multi story unit (proportion)	-	-	-	-	-	-	0.01	0.11
Cement floor (proportion)	0.88	0.33	0.92	0.28	0.92	0.28	0.92	0.27
Tiled or brick tiled floor (proportion)	-	-	0.07	0.26	0.05	0.21	0.07	0.25
Cement walls (proportion)	0.83	0.38	0.96	0.20	0.94	0.24	0.98	0.15
Red/raw brick or mud walls (proportion)	0.11	0.31	0.01	0.10	0.03	0.17	0.02	0.15
Wood walls (proportion)	0.02	0.13	0.02	0.14	0.02	0.14	-	-
Concrete roofing (proportion)	0.02	0.13	0.07	0.25	0.02	0.15	0.03	0.18
Asbestos roofing (proportion)	0.08	0.27	0.17	0.38	0.06	0.24	0.11	0.32
Metal sheet roofing (proportion)	0.08	0.27	0.02	0.14	0.03	0.18	0.02	0.15
Tiled roofing (proportion)	0.81	0.39	0.73	0.45	0.87	0.34	0.83	0.38
Electric connection (proportion)	0.83	0.38	0.98	0.14	0.93	0.26	0.99	0.11
Phone line (proportion)	0.08	0.27	0.43	0.50	0.30	0.46	0.52	0.50
Water-sealed toilet or septic-tank (proportion)	0.83	0.38	0.92	0.28	0.92	0.27	0.98	0.15
House is in GN with tap water network (proportion)	0.55	0.50	0.90	0.30	0.47	0.50	0.89	0.32
Public well/tap is available in GN (proportion)	0.66	0.48	0.61	0.49	0.67	0.47	0.60	0.49
Distance to the main roads (in meters)	80	85	65	69	83	75	66	82
Distance to a tap water network (in meters)	723	952	106	236	1,089	1,177	92	150
Distance to a school (in meters)	1,054	680	740	561	1,038	761	830	564
Distance to the coastline (in meters)	2,268	2,572	1,587	2,452	3,904	3,811	1,629	2,622
Distance to a post office (in meters)	984	640	806	461	1,193	670	982	627
Distance to a garbage dump or landfill (in meters)	1,684	1,762	1,050	1,804	2,689	2,730	1,253	2,069

[1]Excluding bathrooms and kitchens.

Source: World Bank - RTI Household Survey, 2003

Table 9. Hedonic Estimation Results – Model 1 by District

Variables	Gampaha		Kalutara		Galle	
	Coef.	T-stats.	Coef.	T-stats.	Coef.	T-stats.
Intercept	6.5339 ***	13.74	7.0984 ***	10.18	5.3782 ***	9.67
Home ownership reported	0.5450 ***	4.26	0.4474	1.64	0.5838 ***	2.81
House has three rooms	0.5109 ***	5.21	0.2678 **	2.08	0.4109 ***	4.01
House has four rooms	0.6378 ***	5.92	0.4836 ***	3.56	0.5447 ***	5.16
House has five rooms	0.6332 ***	5.63	0.8344 ***	5.88	0.7903 ***	6.51
House has six rooms	0.6497 ***	4.17	0.8476 ***	4.71	0.9151 ***	6.40
House has seven rooms	0.8313 ***	4.49	0.7353 ***	2.96	0.9261 ***	5.54
House has eight or more rooms	0.8332 ***	4.28	1.0325 ***	3.73	0.9718 ***	4.66
Single family, multi story unit	0.0600	0.35	-0.0889	-0.29	0.1103	0.57
Multi family, single story unit	0.2457 **	2.24	-0.0262	-0.21	0.2261 **	2.12
Multi family, multi story unit	0.5502	0.85	0.7237 **	2.06	0.7611	1.01
Tiled or brick tiled floor	0.3098 **	2.33	0.0874	0.49	0.4025 ***	2.71
Mud/earth floor	-0.1079	-0.34	0.0168	0.05	-0.1638	-0.80
Red/raw brick or mud walls	-0.6452 **	-2.53	-0.8551 ***	-2.74	-0.7439 ***	-3.58
Wood walls	-0.7885 ***	-3.66	-0.6214 *	-1.70	-0.8695 ***	-3.18
Asbestos roofing	0.1293	0.87	-0.2023	-1.04	0.0907	0.52
Metal sheet roofing	-0.4367 **	-2.22	-0.5830 *	-1.92	-0.5487 **	-2.33
Tiled roofing	0.2024 *	1.93	-0.0880	-0.51	0.0570	0.38
Electricity connection	0.7414 ***	5.08	0.5228 **	2.09	0.6122 ***	3.74
Telephone connection	0.4146 ***	5.68	0.5714 ***	6.14	0.4308 ***	5.57
Water-sealed toilet or septic-tank	-0.0652	-0.52	0.2444	1.11	0.1344	1.03
Private tap water connection	0.1940	1.49	0.4350 **	2.53	0.0648	0.54
Private well within the premises	0.2016 *	1.90	0.2928 *	1.85	-0.0203	-0.18
Private tap * private well	-0.1285	-0.71	-0.3592 *	-1.80	0.1405	0.35
Log of distance to main roads	-0.0177	-0.64	-0.0257	-0.76	-0.0183	0.51
Log of distance to a school	-0.0165	-0.33	-0.0943	-1.52	0.0339	0.44
Log of distance to a garbage dump	-0.0093	-0.23	-0.0287	-0.54	-0.0070	0.86
Log of distance to a post office	-0.0060	-0.12	0.0218	0.34	0.1055	0.05
R-squared	**0.4111**		**0.4894**		**0.5311**	
Adjusted R-squared	**0.3888**		**0.4457**		**0.4989**	
Number of observations	**768**		**394**		**561**	

The default house is a single family, single story unit, with cement floors, cement walls, concrete roof, and two rooms besides a kitchen and bathroom(s).

DS fixed effects are not reported.

*, **, and *** denote statistical significance at 10%, 5%, and 1%, respectively.

Table 10. Hedonic Estimation Results – Model 2 by District

Variables	Gampaha		Kalutara		Galle	
	Coef.	T-stats.	Coef.	T-stats.	Coef.	T-stats.
Intercept	6.4813 ***	13.69	7.1516 ***	9.87	5.2823 ***	9.40
Home ownership reported	0.5638 ***	4.43	0.4117	1.50	0.5624 ***	2.72
House has three rooms	0.5231 ***	5.35	0.3031 **	2.34	0.4021 ***	3.92
House has four rooms	0.6432 ***	5.99	0.5144 ***	3.78	0.5528 ***	5.24
House has five rooms	0.6349 ***	5.66	0.8668 ***	6.08	0.7828 ***	6.44
House has six rooms	0.6704 ***	4.31	0.9049 ***	5.03	0.9014 ***	6.28
House has seven rooms	0.8366 ***	4.54	0.7746 ***	3.10	0.8988 ***	5.38
House has eight or more rooms	0.8511 ***	4.37	1.0737 ***	3.87	0.9983 ***	4.80
Single family, multi story unit	0.1140	0.67	-0.0455	-0.15	0.1240	0.64
Multi family, single story unit	0.2536 **	2.32	-0.0328	-0.26	0.2216 **	2.08
Multi family, multi story unit	0.6434	1.00	0.6917 **	1.96	0.8236	1.09
Tiled or brick tiled floor	0.3193 **	2.41	0.0972	0.54	0.4076 ***	2.74
Mud/earth floor	-0.1295	-0.41	0.0291	0.08	-0.1614	-0.78
Red/raw brick or mud walls	-0.6531 **	-2.56	-0.8323 **	-2.57	-0.7119 ***	-3.43
Wood walls	-0.7723 ***	-3.60	-0.6643	-1.82	-0.8942 ***	-3.27
Asbestos roofing	0.1373	0.93	-0.1896	-0.97	0.0968	0.56
Metal sheet roofing	-0.4261 **	-2.17	-0.6247 **	-2.05	-0.5482 **	-2.33
Tiled roofing	0.2066 **	1.98	-0.1117	-0.65	0.0536	0.36
Electricity connection	0.7521 ***	5.19	0.6488 ***	2.62	0.6450 ***	3.98
Telephone connection	0.4131 ***	5.67	0.5885 ***	6.43	0.4393 ***	5.72
Water-sealed toilet or septic-tank	-0.0684	-0.55	0.2355	1.06	0.1634	1.25
Private well within the premises	0.1357 *	1.70	-0.0016	-0.02	0.0240	0.34
House is in a GN with tap water network	0.2484 **	2.10	0.1846	1.42	0.1247	1.45
Log of distance to main roads	-0.0211	-0.76	-0.0258	-0.76	-0.0187	-0.68
Log of distance to a school	-0.0120	-0.24	-0.0885	-1.43	0.0320	0.73
Log of distance to a garbage dump	-0.0046	-0.11	-0.0095	-0.17	-0.0026	-0.06
Log of distance to a post office	-0.0251	-0.51	0.0038	0.06	0.1014 *	1.93
R-squared	**0.4128**		**0.4830**		**0.5298**	
Adjusted R-squared	**0.3914**		**0.4403**		**0.4985**	
Number of observations	**768**		**394**		**561**	

The default house is a single family, single story unit, with cement floors, cement walls, concrete roof, and two rooms besides a kitchen and bathroom(s).
DS fixed effects are not reported.
*, **, and *** denote statistical significance at 10%, 5%, and 1%, respectively.

Table 11. Hedonic Estimation Results – Model 3 by District

Variables	Gampaha		Kalutara		Galle	
	Coef.	T-stats.	Coef.	T-stats.	Coef.	T-stats.
Intercept	6.9701 ***	15.01	7.5009 ***	10.93	5.4939 ***	10.10
Home ownership reported	0.5609 ***	4.44	0.3950	1.44	0.5893 ***	2.84
House has three rooms	0.5159 ***	5.31	0.2840 **	2.19	0.4124 ***	4.03
House has four rooms	0.6561 ***	6.14	0.5035 ***	3.69	0.5530 ***	5.25
House has five rooms	0.6367 ***	5.71	0.8555 ***	5.99	0.7936 ***	6.55
House has six rooms	0.6685 ***	4.32	0.8994 ***	4.99	0.9118 ***	6.39
House has seven rooms	0.8365 ***	4.56	0.7662 ***	3.06	0.9034 ***	5.42
House has eight or more rooms	0.8260 ***	4.28	1.0459 ***	3.76	0.9949 ***	4.79
Single family, multi story unit	0.1203	0.71	-0.0498	-0.16	0.0924	0.48
Multi family, single story unit	0.2464 **	2.27	-0.0301	-0.24	0.2307 **	2.16
Multi family, multi story unit	0.6200	0.97	0.6503 *	1.84	0.8775	1.17
Tiled or brick tiled floor	0.3090 **	2.35	0.1191	0.66	0.4029 ***	2.71
Mud/earth floor	-0.1663	-0.53	0.0388	0.10	-0.1381	-0.67
Red/raw brick or mud walls	-0.6853 ***	-2.70	-0.9667 ***	-3.04	-0.7426 ***	-3.59
Wood walls	-0.7809 ***	-3.66	-0.6760 *	-1.84	-0.9241 ***	-3.37
Asbestos roofing	0.1625	1.11	-0.2100	-1.08	0.0823	0.47
Metal sheet roofing	-0.4280 **	-2.19	-0.6359 **	-2.08	-0.5467 **	-2.33
Tiled roofing	0.2202 **	2.12	-0.1296	-0.75	0.0401	0.27
Electricity connection	0.7423 ***	5.15	0.6484 ***	2.60	0.6354 ***	3.92
Telephone connection	0.4203 ***	5.81	0.6021 ***	6.58	0.4328 ***	5.63
Water-sealed toilet or septic-tank	-0.1142	-0.91	0.2329	1.05	0.1538	1.18
Private well within the premises	0.1802 **	2.23	-0.0252	-0.28	0.0344	0.48
Log of distance to water network	-0.0914 ***	-3.58	0.0053	0.18	-0.0456 *	-1.80
Log of distance to main roads	-0.0013	-0.05	-0.0277	-0.75	-0.0018	-0.06
Log of distance to a school	-0.0126	-0.25	-0.0796	-1.29	0.0260	0.59
Log of distance to a garbage dump	0.0100	0.25	-0.0393	-0.71	0.0115	0.26
Log of distance to a post office	-0.0324	-0.66	0.0048	0.07	0.0985 *	1.87
R-squared	**0.4194**		**0.4802**		**0.5309**	
Adjusted R-squared	**0.3982**		**0.4372**		**0.4996**	
Number of observations	**768**		**394**		**561**	

The default house is a single family, single story unit, with cement floors, cement walls, concrete roof, and two rooms besides a kitchen and bathroom(s).
DS fixed effects are not reported.
*, **, and *** denote statistical significance at 10%, 5%, and 1%, respectively.

Table 12. Marginal Willingness to Pay by District

		District		
		Gampaha	Kalutara	Galle
Average imputed monthly rent[1]		4,443	2,135	3,051
Estimation	Variables (Change)	Marginal WTP (Rs.)		
Model 1	Private tap connection (1)	862	929	198
Model 1	Private well (1)	896	625	(62)
Model 1	Private tap connection (1) & private well (1)	1,187	787	564
Model 2	GN has tap water network (1)	1,104	394	381
Model 3	Distance to tap water network (-10%)	41	(1)	14

[1]Average imputed rent of a house with no private well or private tap, is located beyond 1 kilometer from a tap water network in a GN without a network.

DO FILIPINO AND AMERICAN CONSUMERS VIEW GENETICALLY MODIFIED FOOD DIFFERENTLY?

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ABSTRACT

Foods derived from genetically modified (GM) crops have been a part of the food chain in the United States and the Philippines for more than a decade while incurring little of the controversy exhibited in European countries. GM crops include fruits, vegetables and grains and are the result of a process by which foreign genes are spliced into a related or non-related species resulting in a genetically modified organism. This pilot study examines whether Filipino and American consumers hold different attitudes toward GM food from crops. Surveys of the literature regarding the technology behind GM foods as well as consumer attitudes toward GM foods in developing economies are presented together with an analysis of the political economy and cultural characteristics of the Philippines. The results of this initial study strongly suggest that Filipinos perceive food derived from GM crops to be more useful, more morally acceptable, less personally risky, more economically necessary, and should be more politically encouraged than their American counterparts. This study concludes with a discussion of the ways by which marketers may reduce consumer resistance to food derived from GM food.

Introduction

Genetically modified (GM) food is food produced from any plant or animal that has been genetically altered during its production using the modern techniques of gene technology. The first wave of GM food possessed enhanced input properties and is producer and environmentally friendly. For example, genes for herbicide resistance have been transplanted from bacterial cells into tobacco plants, demonstrating that these transgenic plants better tolerate the herbicides used for weed control. The second wave of GM foods has enhanced output properties and is designed to be more consumer-friendly. Some examples are fruits and vegetables with higher antioxidant contents to reduce the risk of heart disease, diabetes and cancer as well as rice with higher levels of iron. Other examples of second wave GM foods include milk and other animal products with healthier fat content and lower levels of

allergens and horticultural produce with enhanced flavor, texture, and shelf-life. On the horizon are bananas that produce human vaccines against infectious diseases such as hepatitis B, fish that mature more quickly, cows that are resistant to bovine spongiform encephalopathy (mad cow disease), fruit and nut trees that yield years earlier, and plants that produce new plastics with unique properties .

GM foods from crops provide another market choice alongside conventional foods and organic products. A recent study into public attitudes toward GM foods has confirmed that attitudes change significantly depending on the type of food being considered (Nielsen, 2006). In this current study, attitude and belief dimensions of university students in two different societies are examined from the context of second-generation, value-enhanced GM foods from crops. Specifically, this study attempts to assess the conjecture that Filipino and American consumers harbor different attitudes towards the willingness to purchase GM food.

Literature Review

Genetically Modified Foods from Crops

A GM crop is the actual plant that is created through genetic engineering or that contains products that were created using genetic engineering. GM crops can have genes either from closely related species or from distant species, even bacteria and viruses, and hence are called “transgenic” crops. The most common GM foods in the world are presently: a) soy and its derivatives including soy flour and soy oil in processed foods, bakery, meat products, infant food and pet food; b) corn in corn flakes, corn oil, corn syrup, high fructose corn syrup, corn starch, corn meal and other corn-based foods; and c) canola (rapeseed), which is used as oil for cooking, baking and in margarines and "lean" butter substitutes. In addition, the following GM vegetables, crops and plants have been approved for commercial use in the United States by the end of 2005: alfalfa, tomato, potato, rice, cantaloupe, sugar beet, radicchio, flax (linseed), papaya, squash, oilseed rape, and wheat (Brookes & Bartoot, 2005). This study has also reported that the leading sources of global transgenic crops are the United States (53%), Argentina (17%), Brazil (11%), Canada (6%), India (4%), China (3%), Paraguay (2%) and South Africa (1%). The first GM tomato marketed under the name FLAVRSAVR™ was bred to stay firm after harvest and so may remain on the vine longer to ripen to full flavor. The glycinin gene from soybean and the Vit A gene from sunflower have been inserted into rice to increase the protein content of the grains (Momma, Hashimoto, Yoon, Ozawa, Fukuda, Takaiwa, Utsumi & Murata, 2000). Monsanto's GM maize GA21 was engineered for resistance to their herbicide Roundup and was also combined with DNA from rice, sunflower and the bacteria *Agrobacterium* to increase its nutritional value. Another GM maize from the Dekalb Company is DBT418, which contains novel genes that make it resistant to insect pests and tolerant of the herbicide glufosinate. It also carries four genes for resistance to the antibiotic ampicillin. Although GA21 and DBT418 have not been approved in the United States (USDA, 1999), both GM varieties were detected in a small number of foods including tortilla chips, taco shells, corn flakes and polenta by the Friends of the Earth Organization. This led to an unprecedented recall of millions of packets and the removal of US approval for GM maize in 2000.

Consumer Attitudes toward GM Foods

Speaking at the 2006 Agricultural Biotechnology International Conference in Melbourne, Craig Cormick, Manager of Public Awareness for Biotechnology Australia, said "consumer attitudes relating to GM foods are complex and studies that simply ask if people would or wouldn't eat GM foods don't do justice to the complexities of public attitudes." Some literature suggests that cultural determinants play an important role in the consumer's approval of a specific technology, and those beliefs about its benefits and risks are rooted in more general knowledge and attitudes toward nature and technology and are therefore difficult to change. Because these views are also culturally constrained, it is possible that international differences in opinion toward GM food are embedded in these cultural attitudes.

Many studies have focused on consumer attitudes in the United States (Ganiere, Wen, Chern & Hahn, 2006). Baker and Burnham (2001) investigated American consumers' acceptance of GM corn flakes and found that 30% of consumers surveyed based their purchasing decisions on GM content. According to new research conducted by the U.S. Department of Agriculture's Economic Research Service (2004), consumers in the United States are not as willing to buy foods manufactured from GM grains, oilseeds and other crops. In addition, gender, income, and other demographic characteristics appear to have only a slight impact on consumers' willingness to purchase biotech foods. Surveys by the Pew Initiative on Food and Biotechnology (2005) show American consumers are surprised and even outraged when they learn how pervasive GM foods are. On a scale of 1 to 10 with 10 indicating "very well informed on biotechnology", fifty-three percent rated their awareness at 3 points or below, indicating that they were relatively not well informed regarding biotechnology issues. Nearly an identical number of consumers - (54%) - reported they had heard "not much" or "nothing" about biotech foods in grocery stores.

Conventional wisdom has suggested that attitudes among Americans and Europeans toward GM foods are very different with Americans supporting and Europeans opposing the introduction of GM foods (Pew Initiative on Food and Biotechnology, 2003). However, two recent government-funded surveys indicate the two groups share some similar attitudes. The Eurobarometer (2001), a comprehensive poll of European citizens carried out by the European Commission, shows a large majority of Europeans, 70.9%, say they do not want GM foods. In the United States, the Food Policy Institute at Rutgers University found that 73% of Americans, like Europeans, seem skeptical about GM foods (Hallman, Adelaja, Schilling, & Lang, 2002). Le Marre, Wine, Burkink, Grunhagen, & Wells (2007) studied American versus French perspectives toward GM foods. Respondents from both countries perceive a direct benefit from second generation GM foods with at least a less negative attitude toward them. In another study using university students, Chern and Rickertsen (2001) reported that Americans are more willing to consume GM foods than Norwegians, Japanese and Taiwanese. Lusk, Roosen, and Fox (2003) estimated consumer willingness to purchase beef in France, Germany, the United Kingdom, and the United States using a variety of quality variables, including whether the

cattle were fed with GM corn. Their results suggest that, compared with US consumers, European consumers placed a much higher value on beef from cattle that had not been fed GM corn.

Several studies have compared consumer attitudes toward GM foods among developing countries. The University of Washington's IMPACT Center released the preliminary results of a consumer survey done in Mexico, Chile, and India focusing on attitudes toward GM crops (Curtis, McCluskey, & Wahl, 2004). The survey was conducted at grocery stores and in markets, and included both poor and more affluent demographics. In Chile and Mexico, 70% of respondents said they were willing to purchase GM food if it had more vitamins or other nutrients, or used fewer pesticides. In India, approximately 88% of consumers stated that they would buy GM foods. Although the majority of surveyed consumers in China reported that they had little or no knowledge of biotechnology, their attitudes toward (GM) foods were generally positive, especially for GM foods with product-enhancing attributes (Li, Curtis, McCluskey, & Wahi, 2002). These results imply that, unlike Europe and Japan, there is a potential market for GM foods in China and other developing economies. Korean consumers, who have proven to be strongly resistant to GM products, do show signs of changing attitudes toward GM foods when the promise of its benefits is communicated (Hallman, Jang, Hebden, & Shin, 2005).

Studies that have focused on the consumer acceptance of GM food in less developed countries indicate that technology has a role to play in addressing food insecurity in these nations (Nielsen, Robinson, & Thierfelder, 2001). Consumer surveys in supermarkets, kiosks, and maize mills in Kenya reported that 68% of respondents would purchase GM maize meal at the same price as their favorite brands, although many were concerned with the potential environmental and health risks as well as ethical and equity issues (Kimenju, De Groote, Karugia, Mbogoh & Poland, 2005). Curtis, McCluskey, and Wahl (2004) studied GM food acceptance among developing nations including the Columbia and China. These studies concluded that the generally positive perception towards GM foods in developing nations stems from more urgent needs in terms of food availability and nutritional content. Additionally, perceived levels of risk may be smaller due to somewhat greater trust in government, positive perceptions of science, and positive media influences.

Economic Differences

With a current estimated population of 97.9 million, the Philippines is the twelfth largest country in the world. The 7107 islands that make up the Philippines approximate the land mass of Arizona. The vast majority of the population live on the islands of Luzon, Cebu, Mindinao, Leyte, and Negros. The history of the Philippines is largely characterized by their nearly 400 years of as a Spanish colony and their relationship with the United States. The Philippines were ceded to the United States in 1898 upon the conclusion of the Spanish-American War and became a self-governing commonwealth in 1935. Upon the conclusion of the Second World War, the Philippines became an independent Republic. It is unique in Asia in its religious composition: the predominate religion is Roman Catholic. For both imports and exports, the largest trading partner of the Philippines is the United States. Although the official language of the Philippines is Tagalog, English is widely spoken, especially among

the college educated. The educational system is largely modeled on the American system and the literacy rate was recently estimated at 92.7%. Its University system is highly competitive on a global basis. The Philippines is characterized as a developing economy and the most recent estimates of its per capita income is $3300 on a purchasing power parity basis. By way of comparison, per capita income in the United States is $46,400. The GINI Index attempts to measure the distribution of income within a country and both the United States and the Philippines would be considered countries in which income and wealth is relatively concentrated. The GINI Index for the Philippines is 45.8 and for the United States it is 45.0 (CIA World Factbook, 2009).

Hofstede's Dimensions of National Character

Geert Hofstede's framework of the cultural dimensions of national character has been a mainstay of research in international marketing since its inception. As developed in his seminal work in the field: Culture's Consequences, Comparing Values, Behaviors, Institutions, and Organizations Across Nations (Hofstede, 2001), the five dimensions of national character include Power Distance Index (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance Index (UA), and Long-Term Orientation (LTO). Hofstede's framework allows research in international marketing to compare and contrast country markets based upon their underlying cultural dimensions. Comparisons between the United States and the Philippines are as follows:

Table 1: Hofstede's Dimensions of National Character

	Philippines	United States
Power Distance	95	38
Individualism	35	88
Masculinity	70	68
Uncertainty Avoidance	40	41
Long-Term Orientation	25	32

With regard to the introduction and assimilation of new products and new technologies such as GM foods, the two dimensions of Hofstede's framework that might be of most interest for the study at hand are the Uncertainty Avoidance Index (UA) and the Power Distance Index (PDI). The Uncertainty Avoidance Index attempts to measure the degree of uncertainty and ambiguity that a society feels comfortable with and has often been employed as a proxy for the diffusion of innovation within a culture. Those cultures which are uncertainty avoiding attempt to minimize the possibility of such situations by strict laws and rules as well as safety and security measures while cultures that are uncertainty accepting cultures are more tolerant of opinions different from what they are used to and typically have as few rules as possible. Both the United States and the Philippines have UA scores which would seem to indicate an openness to the possibility of GM foods. Previous research (Curtis, McCluskey, & Wahl, 2004) has noted the possibility of somewhat greater trust in government, positive perceptions of science, and positive media influences as playing a role in more positive perceptions of GM food. Such constructs may well be captured in Hofstede's Power Distance Index.

Formally defined, the Power Distance Index (PDI) holds that the extent to which the less powerful members of organizations and institutions accept and expect that power is distributed unequally. The PDI ratings for the Philippines – 95- and the United States – 38 – are vastly different.

OBJECTIVES AND HYPOTHESES OF THE STUDY

The central focus of this study is whether Filipino consumers view GM foods more positively than their American counterparts. Paralleling the research of Le Marre et al., (2007) on American and French attitudes toward GM foods, this study incorporates the constructs of usefulness, moral acceptability, personal risk, economic necessity, and social imperative to examine attitudes toward GM crops and GM livestock. Consequently, the primary research objective can be expressed in the form of the following five hypotheses:

H1: Filipinos will have a more favorable attitude regarding the usefulness of GM food than Americans.

H2: Filipinos will have a more favorable attitude regarding the moral acceptability of GM food than Americans.

H3: Filipinos will have more positive perceptions of the personal riskiness of GM food than Americans.

H4: Filipinos will have a more favorable attitude regarding the economic necessity of GM food than Americans

H5: Filipino perceptions that social and scientific policy toward GM foods should be more encouraged will be more positive than Americans.

Methodology

The research setting of our study focused on upper-level undergraduate students from the United States and the Philippines majoring in Biology. Students enrolled in Microbiology, Biotechnology and Genetics courses were offered a modest extra-credit incentive to participate in the study and participation was virtually 100%. This research setting was chosen because potential respondents would have been exposed to significant course material regarding genetic theory and bio-engineering issues. Consequently, this choice of potential respondents allows the study to focus on portions of the general population who are relatively well-prepared to discuss the role of GM food in society. Of the 172 respondents, 94 were from the United States and 78 were from the Philippines. Our survey utilized a password-protected website in order to increase efficient data collection and control multiple submission issues. The survey questionnaire was largely based upon measures utilized in a cross-cultural analysis of French and American attitudes towards first and second-generation GM food published by Le

Marre et al. (2007). These Likert measures were modified to reflect the purpose of our study comparing Filipino and American attitudes toward foods from GM crops (*ex: Food derived from GM crops is useful*). Respondents utilized a 5 point scale where 1 = strongly agree, 2 = mostly agree, 3 = neither agree nor disagree, 4 = mostly disagree, and 5 = strongly disagree. The Filipino version of the survey was in English as all students were fluent in English. The data was analyzed using SPSS 14.0 for Windows.

RESULT

Descriptive statistics from the study are presented in Table 2 and include the mean, sample size, standard deviation, and standard error of the mean.

Table 2: Group Statistics Regarding GM Foods

Variables	Mean	N	Std. Dev.	Std. Error Mean
American Belief in Usefulness	2.14	94	0.833	0.089
Filipino Belief in Usefulness	1.43	78	0.499	0.061
American Belief in Moral	2.56	94	0.882	0.094
Filipino Belief in Moral Acceptability	1.69	78	0.656	0.080
American Belief in Riskiness	2.68	94	0.977	0.104
Filipino Belief in Riskiness	3.45	78	1.063	0.130
American Belief in Necessity	2.62	94	0.951	0.101
Filipino Belief in Necessity	1.87	78	0.919	0.112
American Belief in Encouragement	2.63	94	0.938	0.100
Filipino Belief in Encouragement	1.72	78	0.714	0.087

Further analysis of the data was performed utilizing paired t-tests to measure the differences between Filipino and American attitudes toward food derived from GM crops. These results are presented in Table 3. Statistically significant differences were reported across all five variables: Usefulness, Moral Acceptability, Risk, Necessity, and Encouragement. As can be seen, all 5 sub-hypotheses were confirmed at the 95% confidence level. For H1, Filipinos were found to perceive food from GM crops to be more useful than Americans ($t = -6.124$, $p = 0.000$). For H2, food derived from GM crops was found to be more morally acceptable for Filipinos than Americans ($t = -6.771$, $p = 0.000$). For H3, Filipinos perceived food derived from GM crops to pose less risk than did Americans ($t = 4.654$, $p = 0.000$). For H4, food derived from GM crops was found to be more necessary by Filipinos over Americans ($t = -4.996$, $p = 0.000$). For H5, Filipinos believed food derived from GM crops should be

more socially and scientifically encouraged than did their American counterparts (t = -6.602, p = 0.000). Based upon the findings from our set of five hypotheses, we can accept our central hypothesis that Filipino undergraduate biology students possess a more positive attitude than American undergraduate biology students toward food derived from GM crops.

Table 3: Paired Samples t-tests of American Attitudes toward Foods vs. Filipino Attitudes toward GM Foods

Variables	Mean Difference	t-value	Significance
Usefulness	-0.704	-6.124	0.000
Moral Acceptability	-0.870	-6.771	0.000
Riskiness	0.766	4.654	0.000
Necessity	-0.759	-4.996	0.000
Encouragement	-0.909	-6.602	0.000

Limitations of the Study

The limitations to this study mirror those of survey-based studies in general. The first of these limitations is that the data is based upon the self-reported responses of survey participants. While the reporting of attitudes toward GM food is not as controversial as some topics, there remains an element of social bias that cannot be discounted. Nevertheless, the research methodology and the instructions in the survey offered the promise of confidentiality as well as anonymity to respondents thus helping to minimize the social bias problem. A second area of limitations to our study lies in the choice of our sample frame. The conclusions offered in this study are limited to undergraduate Biology majors who have been exposed to a significant amount of training in microbiology, genetic theory and biotechnology issues and may not apply to the general population. As was discussed earlier, this population was specifically targeted in order to minimize the problem encountered in earlier studies of surveying respondents who had little or no educational background in genetics or biotechnology. A third limitation of this pilot study revolves around sample size. Further research in the area would incorporate larger sample sizes and increase statistical power.

Conclusions

The diffusion of GM food technology has been underway for the better part of two decades. Each new generation of technological advance in this area has faced some degree of resistance to its adoption. The first generation of GM crops was designed to enhance their productivity and resistance to plant disease, pests, and adverse climate and temperature conditions. The second generation of GM crops offered enhancements to the nutritional value and taste of the products. Both faced initial, and in many cases, some degree of continued resistance among consumers. This study confirms and extends the research stream which demonstrates that developing economies have more positive attitudes

toward GM foods. In this study, consumers in the Philippines have been shown to have more positive attitudes to these foods based upon the grounds of moral acceptability, risk to human health, and the usefulness and necessity of the innovation. Studies of the adoption of innovation have repeatedly pointed to the relative advantage of the innovation as the most critical aspect of its adoption by consumers (Kotler, 2007). This study suggests that purveyors of GM food must effectively communicate the relative benefits of this innovation to consumers in order for the innovation to be widely adopted.

Recommendations for Future Research

The diffusion of innovations is an area of research whose boundaries are constantly expanding. This is particularly the case regarding GM foods in cross-cultural studies in general and from developing countries in particular. Directions for further research in this area include studies on the attitudes of the general public rather than the sample of biology majors utilized in this study. Other potential research in this area might be directed at cross-cultural consumer attitudes toward food derived from GM livestock. The definition of GM livestock includes livestock which have been fed with GM feed, livestock which have been injected with GM additives, and livestock which have been genetically modified themselves. Future research projects might attempt to determine if public attitudes towards these three categories of GM livestock differ. In addition, further international marketing research utilizing the Philippines as a research setting is highly recommended given the substantial population, strategic location, and historical ties with the United States.

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SPECIAL EDUCATION IN BIAFRA AND THE UNITED STATES OF AMERICA: A COMPARATIVE ANALYSIS

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ABSTRACT

Both Biafra and the United States have according to Eskay (2002), made some gains in recognizing the special education issues that confront diverse learners in these different countries. However, in Biafra, there are still some areas of improvements, especially in (a) the roles played by federal, state and local governments, (b) issues of funding, (c) criteria for admission into special education, (d) assessment issues in special education, (e) issues of early intervention, (j) special education categories, (g) procedural safeguards, (h) Parental involvement, and (i) teacher/staff training and certification

Introduction

Nigeria is located on the West Coast of Africa, bordering the Gulf of Guinea, between Benin and Cameroon. With an estimated population of 146 million, it is a heterogeneous society with more than 250 ethnic and language groups (World Fact Book, 2008). Its most populous and politically influential ethnic and language groups include the Igbos, Hausas, and Yorubas. Nigeria got its independence from Britain in 1960. Following nearly 16 years of military rule, a new constitution was adopted in 1999, and a peaceful transition to civilian government was completed. However, the government continues to face the daunting task of reforming a petroleum-based economy, with revenues that continue to be squandered through corruption and mismanagement. In addition, even as Nigeria continues to institutionalize democracy, it continues to experience longstanding ethnic and religious tensions. Although both the 2003 and 2007 presidential elections were marred by significant irregularities and violence, Nigeria appears to experience its longest period of civilian rule since independence. The general elections of April 2007 marked the first civilian-to-civilian transfer of power in the country's history.

In theory, Nigeria is a democratic government, yet the military characteristics still dominate most part of the country. This means that not enough positive changes have been made in the fields of general and special education. Many Nigerians have not benefited from special education programs, as outlined by Section 8 of the National Policy on Education (1977 and revisited in 1981), mostly because of inadequate funding (Mba, 1995; Obiakor, 1998), cultural beliefs (Afolabi, 1990; Eskay, 2001; Marten, 1990; Obiakor, 1998; Onwuegbu, 1976), negative perceptions(Afolabi, 1990; Obiakor, 1998), teacher qualification (Abosi, 1992; Ekeleme, 1974), and the non existence of legal mandates (Obiakor, 1997). Other scholars (e.g., Abosi, 1992; Marten, 1990; Onwuchekwa, 1981) have noted that continuous negative perceptions of learners with disabilities have made accountability difficult to achieve, especially

when federal, state, and local responsibilities are mishandled. Nwaogu (1984) and Ogbue (1975) further found that the deeply ingrained cultural beliefs about people with disabilities and their alleged mistreatment by some administrators cannot be overlooked. Because of negative societal perceptions, teacher training and certification in special education are not maintained and these, in turn, affect funding of special education. These cultural beliefs have continued to influence the formulation and implementation of special education policies.

Onwuegbu (1977) noted that ignorance, superstition, and taboos have caused the lack of care of learners with disabilities in Nigeria. Gaulcrick (1980) further found that cultural behaviors resulting from superstition and negative perception of these learners have led to poor identification, evaluation, placement, and instruction. Obiakor (1998) also found that because of the negative perceptions, screening, evaluation, placement, and instruction have been affected. Further, the absence of legal mandates indicate that parents lack their legal rights to due process, and as a result, they cannot initiate litigation against any form of discrimination against their children in terms of admission, initial screening, comprehensive evaluation, subsequent placement, individualized instruction, and service delivery. Despite the decision of the federal government to give quality education to all Nigerian children through the 1977 National Policy on Education (NPE), some administrators still perceive people with disabilities negatively (Eskay, 2001). Even in the areas of teacher training and certification, deeply ingrained cultural beliefs creates strategic problems. The question that comes to mind is, How can special education programs forge ahead with problematic cultural views and strategic plans. Many advocates, including some contemporary scholars (e.g., Abosi, 1992; Eskay, 2001; Marten, 1990; Obiakor, 1997 have decried the continuous cultural misrepresentations that impede general and special education programs at all levels. Clearly, there is a critical need to shift paradigm and powers to maximize the fullest potential of people with disabilities. This is the focus of this chapter.

Conflicting Actions

As it appears, special education has made some progress in Nigeria. However, the more things change, the more they remain the same. Abang (1998) argued that while special education programs have embraced some slight recognition in some parts of the country, it has failed in other parts of the country. Eskay (2001) noted that cultural beliefs, division among ethnically diverse Nigerians, and divisive politics still account for the unequal representation and treatment of learners with disabilities. Based on recent findings, Muuya (2002) indicated that many people do not see any significance in educating people with disabilities, and thus there exists division among policy makers. Because of political and cultural issues mitigating against special education programming, there seems to be a continuous stagnancy of special education programming since the enactment of Section 8 of the National Policy on Education more than three decades ago. Below are important areas that demonstrate the state of special education programming in Nigeria compared to the United States of America.

Federal, State and Local Roles

The federal governments of Nigeria and the United States have been involved in the education of exceptional individuals. Their policies have been aimed at improving the problems confronting diverse learners in school programs through laws and regulations. According to Ogbue (1975), there is national policy on special education and the responsibility for special education is the discretion of the individual states. Even where the education laws of the states make mention of special education, there is no definite mandate for educating handicapped children. Ogbue's (1975,) 981) findings revealed the state of special education in Nigeria

Funding of special education

Funding for special education in Nigeria limits the progress of special education. Funding seems to be either insufficient or not provided for the education and service delivery of learners with disabilities. There are constant filibustering and policy maneuvering among education policy makers that end up defeating any funding appropriated for special education. Even the money donated by non-governmental organizations and philanthropists for the education of these learners are not used for that purpose. Obiakor (1998) compared Nigeria to other countries and found that funding of special education has been slow and difficult to procure because Nigeria lacks the legal mandate to enforce special education policies. As a result, services for people with disabilities are not delivered appropriately. Smith (2007) concluded, funding of special education has “always” been a problem in countries that have negative perceptions of learners with disabilities.

Qualified General and Special education Practitioners

There are still not enough qualified special educators to meet the educational needs and care of persons with disabilities in the society. Many unqualified special education teachers are left to teach these individuals. As a result, there is poor implementation of the National Educational Policy. Akon (1991) examined the status of in-service education for teachers in Nigeria and found that it represents in-service teacher education is an effective means of (a) augmenting inadequacies of pre-service training and (b) updating teachers' knowledge, skills and interests in their chosen field. In Eskay’s (2001) research, he found that because of societal perception, few qualified special education teachers give up their teaching responsibility to unqualified special education teachers. Sadly, these unqualified teachers do not last long due to their lack of knowledge and methodology coupled with high enrollment in classrooms. Many students (both the disabled and nondisabled) are put together in the same classroom and poorly prepared teachers find it difficult to identify their individual needs.

Response to Legal Mandates.

No program can be successful in a lawless environment. As it stands, there is no legal mandate from the government to carry out the objectives enumerated in Section 8 of the National Policy on Education with regard to people with exceptionalities. This absence of legal mandate, lead to civil right violation and lack of adequate programming. In addition, it creates. No doubt, the availability of funds would have helped in (a) providing adequate in-service training for teachers, and (b) erecting classroom

buildings to accommodate these learners. As Ajuwon (2008) pointed out**,** the absence of legal mandates to enforce special education programs perpetuate negative societal perceptions of these learners.

It is human knowledge that the lack of legal mandates affects:

- The knowledge of who should be served, why someone should be served, how a person should be served, and where a person should be served.
- Procedural safeguards and due process rights
- Non-discriminatory identification and assessment.
- Confidentiality of information
- Individualized educational programming
- Parental rights and responsibilities
- Appropriate categorization, placement, and instruction.

Accountability: Beyond Tradition

Accountability is an imperative that is necessary to build programs. It can be diagnostic, formative, and summative. Because of this lack of accountability in Nigeria, special education programs and service delivery systems have embraced sluggish progress. The government may have good intentions in the education of its citizens through the 1999 Universal Basic Education (UBE 1999); however persistent ingrained negative perceptions about people with disabilities have tremendously affected special education programs. Why should we care? The reason is simple: Every citizen is valuable in advancing our humanity.

- *Accountability in funding special education*. Moneys that are meant for the special education programs must be accounted for----they should not be allowed to end up falling into the wrong hands and be subsequently diverted for personal gains (Obiakor, 2004).
- *Accountability in Service Availability.* There are few services available for people with disabilities. Services like transportation, medical, counseling, living accommodation, and many others are not easy to procure; and those who succeed, end up not getting all the necessary services (Obiakor & Bragg, 1998). There must be accountability in these areas.
- *Accountability in Teacher Preparation.* Most teachers who work with people with disabilities are not qualified to teach. Some of those who are qualified to teach, end up going into other fields. There must be accountability on how teachers and service providers are prepared(Akon, 1991; Obiakor, 2004).
- *Accountability in Identification, Screening and appropriate Placement*. Though students with disabilities are housed in one class, they are not included with those without disabilities in state

academic assessment that are used for accountability purposes. Instead, they are left behind. The idea of leaving these people behind, raises the question of how their progress is measured in order to determine their annual goals (Smith, 2007). Bakere (1992) and Obiakor (1998) noted that assessment standards, and accountability provisions should be designed to capture and represent growth in high priority skills among people with disabilities. Mukuria and Obiakor (2004) argued that the overall goal should be to design and implement assessment systems that are culturally valid and reliable.

- *Accountability in Parental Involvement and Due Process*. A closer examination of parental involvement and due process reveals the urgency for a fundamental policy shift to facilitate successful collaboration between policy makers, special education teachers and parents of students with special needs. Many Nigerian parents' voices continue to be silenced and excluded from their children's education (Mukuria & Obiakor, 2004). Clearly, schools and parents should collaborate and work together to accommodate all children regardless of their physical, intellectual, social, emotional, and linguistic or other circumstances.

Future Perspectives

Through the years, special education in Nigeria has made some progress; however, there are no legal mandates that are put in place to enforce it. The only special education mandate comes from Section 8 of the National Policy on Education. As a result, accountability for special education is affected; services for people with disabilities are not reachable, parental rights to due process are denied; and these learners are left to suffer for a cause they do not know. To look at the future, Nigeria must join other progressive nations advocate for the rights of learners with disabilities and help them join the mainstream society (see Mukuria & Obiakor, 2004; Obiakor, 2004). From our perspective, Nigeria must build on the foundational knowledge that it has established. Proactive efforts must be made to:

- *Shift Paradigm* –How we think about people with disabilities must change.
- *Enforce the National Policy on Special Education*—Currently, there are no laws that enforce the National Policy on Special Education. Unlike other countries that have special education laws that guide their special education activities, Nigeria still struggles on this issue. Even the Section 8 of the National Policy does not provide room for due process. The lack of legal enforcement in special education makes it difficult for people with disabilities and their parents to fight for their due process rights.
- *Institute Advocacy Groups*—An institution of advocacy groups will be extremely helpful. Individuals must lobby for the rights of persons with disabilities.
- *Recognize and Accommodate Various Forms of Exceptionalities*---At present, a couple of exceptionalities are recognized in Nigeria.

- *Give Quality and Equal Educational Opportunities to all Learners*---All learners deserve quality and equitable treatment and education. The federal, state, and local governments must be involved in these processes.

Conclusion

Special education, which began as an excellent path for providing equal education to all Nigerian citizens have found itself struggling with how best to make it better for learners who are disenfranchised. It is not surprising that for decades such struggle has not produced any measurable progress in the education and service delivery for these learners.

To join other progressive countries in recognizing, protecting, and maintaining the rights of learners with exceptionalities, it is imperative that Nigeria begins to shift its paradigm in the twenty-first century by putting away the old tradition of negative perceptions on these learners. Clearly, it is critical that Nigeria looks at the future as it includes these learners into the mainstream society and help them to maximize their fullest potentials.

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EMPIRICAL INVESTIGATION OF TEACHING AND LEARNING SOCIAL SKILLS WITH GIFTED STUDENTS

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ABSTRACT

The aim of this study was to measure the effectiveness of social skills training of gifted children, and to examine the gender differences in that effectiveness. The sample consisted of 19 elementary school-aged children, from first, second and third grade. All participants were in a classroom for gifted students at an elementary school. Students participated in a pre-intervention measurement of their social competence. A social skills training program, Skill-Streaming the Elementary School Child, was then implemented in the classroom. A post-intervention measurement was gathered. The underlying hypothesis was that training will have a significant positive effect on students. In addition, it is believed that boys will demonstrate lower pre-intervention self-ratings and a higher increase in social competence than girls. The implications of the results are discussed.

Keywords: Scholarship of Teaching and Learning, Gifted Students, Social Skills Training

Introduction

Accountability for the outcomes of students is the current focus of federal, state, and local education agencies. No Child Left Behind (NCLB) is a national legislation emphasizing the importance of improving the outcomes of all children in school through research-based methods (U.S. Department of Education, n.d.). Legislative policy, such as NCLB, standards-based reform measures, and school improvement initiatives, all call for the enhancement of educational opportunities for all students (Webb, 2005). Research indicates that the development of appropriate social skills in children is important to their academic success. Direct instruction on these skills benefits children who might have had minimal opportunity to acquire these skills independently.

Statement and Significance of Problem

Appropriate development of social skills is related to children's academic success and general resilience.

According to Walker (2005), by about age 4, typically developing children are able to make inferences about the beliefs and desires of other people, to use this information, and to interpret their behavior. These inferences are fundamental to successful interactions with peers. Students who experience rejection in their early years may not have enough opportunity to develop age-appropriate social skills. Students with maladaptive social behaviors are "likely to be met with negative outcomes, such as teacher rejection, school failure, and social rejection" (Lane et al, 2004). These children are considered at-risk and would benefit from social skills training in the classroom.

Research on the development of social skills in young children indicates gender differences in the development of these skills. Overall, girls seem to be more competent in "generating effective solutions to social problems" (Walker, 2005). Girls, when compared to same-age boys, have been observed to have a greater preference for playground activities involving social skills, such as talking with peers (Boulton, 2005).

The focus on gifted children is due to research indicating that these children "may be at-risk for social and behavioral difficulties" (Sankar-DeLeeuw, 2004). Gifted children, while academically advanced, often lack age-appropriate social skills. Their intellectual and emotional abilities appear to develop unevenly (Clark & Dixon, 1997). Nonverbal communication is an important aspect of social interaction. Gifted children demonstrate higher verbal communication skills then the "more interpersonal, nonverbal type of communication" (Clark & Dixon, 1997).

Additional research on the development of social skills in gifted children is critical. Interventions with young gifted children have received little emphasis (Sankar-DeLeeuw, 2004). Generally, research studies on gifted students "have focused on intellectual and academic characteristics rather than the overall development of these individuals within a social and academic setting" (Sankar-DeLeeuw, 2004). The need for social skills training in gifted classrooms may be overlooked due to these children's above average intellectual abilities. Furthermore, children victimized by peers are "likely to be highly observant of classroom rules and may rarely come to the attention of teachers and school staff" (Leadbeater et al, 2003). Classroom teachers view social skills which promote harmony in the classroom as essential; these classroom skills include following directions and self-control (Lane et al, 2004). Classroom skills differ from skills necessary to socially function with same-age peers, such as the ability to make inferences about others' feelings and thoughts. Broad development of social skills in all children can lead to decreased social rejection and increased positive social interaction.

Purpose and Hypothesis

The primary aim of this study was to examine the effectiveness of social skills training on gifted children. This was prompted by research indicating that gifted children demonstrate skill deficits in social competence. The hypothesis was that gifted students who participate in direct instruction on social skills will show significant improvements in social competence.

The secondary aim of the present study was to test for gender differences. It is important to further understand the development of social skills in gifted children due to a paucity of research in this area. The hypothesis was that lower pre-intervention social competence self-ratings would be obtained for boys than for girls. It was also predicted that a greater increase in skills after the intervention will occur in boys.

It was anticipated that results of the study would either produce or confirm valuable information regarding the effectiveness of social skills training for gifted children. Furthermore, knowledge relative to instructional strategies and interventions designed to improve children's social skills are provided. This knowledge is important in designing interventions aimed at improving children's educational outcomes.

Definition of Terms

Giftedness

Gifted children demonstrate above average intelligence and ability in many areas. Parents of young children indicate four common characteristics of giftedness: expressive language, memory, abstract thinking, and development ahead of peers (Sankar-DeLeeuw, 2004). Gifted individuals often demonstrate signs of perfectionism and place unrealistic pressures on themselves.

This research study was conducted in elementary schools in a southeastern state in America. In this school district, students are admitted into the gifted program through a team-based decision which takes into consideration assessment results, classroom performance, parental input, and school-staff recommendations. A student must attain a score (IQ) of 1.5 standard deviations above the mean score on a cognitive measure in order to be considered for the gifted program. Generally, this IQ is 130 or above.

Social Skills

The definition of social skills is multi-faceted. Social skills are generally viewed as the ability to competently interact with others. Social skills are specific pro-social behaviors "that a student demonstrates in order to perform appropriately on a given social task" (Gresham, 2002, as cited in Lane et al, 2005). Howes (1988) defines social competence as behavior that reflects (a) ability to socially function with peers, (b) ability to achieve personal goals, and (c) sensitivity to peer communication (as cited in Walker, 2005).

The authors of Skill-Streaming the Elementary School Child, the training program used in this study, identified five general types of pro-social behaviors: (a) Classroom Survival Skills, (b) Friendship-Making Skills, (c) Skills for Dealing with Feelings, (d) Skill Alternatives to Aggression, and (e) Skills for Dealing with Stress (McGinnis et al, 1984). These five main groups of skills are each comprised of numerous specific skills. For example, specific skills include knowing your feelings and responding to teasing.

Resilience

According to Alvord and Grados (2005), resilience in children is made up of protective factors that modify, ameliorate, or alter their response to environmental factors that predisposes them to maladaptive outcomes. Examples of these factors are a child's intelligence, success at making friends, and ability to regulate behavior. Pro-social skills are related to children's ability to adapt to life stressors (Alvord & Grados, 2005).

Promoting Resilience

Improving outcomes for students includes developing their ability to become successful adults. As defined earlier, resilience is the ability to adapt to difficult life situations. Many children encounter difficult experiences which, without an appropriate response, can lead to adult maladjustment. Aligned with NCLB, the goal of developing this resilience in childhood can lead to better outcomes for children in schools.

Responses to difficult situations are indicative of a child's resilience. This behavioral response is based on six steps: (a) encoding relevant internal and external cues, (b) interpreting those cues, (c) selecting a goal, (d) accessing possible responses, (e) choosing an appropriate response, and (f) enacting that response (Mayeux & Cillessen, 2003). Children who do not demonstrate this response are "at-risk for on-going peer relationship difficulties and consequent long-term social adjustment problems" (Walker, 2005). According to Alvord and Grados (2005), a child's success at making friends is an example of an internal strength that promotes resilience.

The Development of Social Skills

Social skills are learned in childhood through external experiences. As a child matures, these skills should become automatic. Understanding how social skills develop is important in designing interventions designed to increase social skills in children. Interventions should be targeted towards optimal ages for development.

According to Sankar-DeLeeuw (2004), optimal development of gifted children can be enhanced with identification and intervention at an early age. There appears to be a critical period for this optimal development. Research indicates a shift in socio-cognitive skills between ages 5 and 8 (Frey & Doyle, 2001; Mayeux & Cillessen, 2003). This developmental transformation includes chances in personality, responsibility, independence, and social roles (Frey & Doyle, 2001). These early years prove formative in a child's development of social skills. The interpretation and learned responses to social situations in these early years may shape children's "style of interaction with, and their behavioral reputation among, the peers they will be in school with for several years" (Mayeux & Cillessen, 2003).

Appropriate development of social skills in the early years enhances a child's experiences for future years. The transition between elementary school and middle school is difficult, and children with well-established social skills are able to make this transition with greater resilience. After elementary school,

general self-esteem declines progressively over a long period of time (Cantin & Boivin, 2004). A child's perceived scholastic competence also declines progressively during this transition (Cantin & Boivin, 2004). Older children, with adequate exposure to social situations in early childhood, "encode and interpret information in social situations more accurately, generate unique responses to those situations more frequently, and are better aware of which responses are appropriate and effective" (Mayeux & Cillessen, 2003).

Social Skills Training Models

Research-based interventions are the focus of current national educational legislation. In order to provide children with effective instruction, instructional methods must be based on significant research establishing its effectiveness. Thus, the intervention implemented in this research study was aligned with current research on social skills training models. Social skills training models should include six empirically validated steps: (a) identifying students for participation, (b) identifying specific skill deficits in designing interventions, (c) organizing intervention groups, (d) preparing intervention leaders, (e) implementing interventions, and (f) monitoring student progress (Miller et al, 2005, as cited in Lane et al, 2005).

Identifying Students for Participation

Identifying students in need of direct training on social skills allows for the provision of these services to students who truly are at-risk for social and behavioral difficulties. Teacher nominations, screenings, and documented deficits in Individual Education Plans (IEP) are all methods used in previous research studies (Lane et al, 2005). Employing an efficient identification method reduces false positives, children who are identified as at-risk erroneously, and false negatives, children who are not referred but are truly at-risk.

Identifying Specific Skill Deficits and Designing Interventions

Skill deficit refers "to a specific behavior that is not a part of the student's behavioral repertoire" (Lane et al, 2005). There are many methods of identifying skill deficits. The identification of specific skill deficits aids in the design of appropriate interventions. Natural observation, formal observations, teacher or parent reports, behavioral rating scales, and socio-metric measures are all methods of assessing social skills (Lane et al, 2005). Behavior or social skills rating scales are the most helpful in determining what skills need to be taught (Mehaffey & Sandberg, 1992). Information from the rating scales is complied to identify skill strengths and weaknesses. Through information from these scales, skills deficits are identified and targeted in designed interventions.

According to Mehaffey and Sandberg (1992), "the goal of social skills training groups is to improve children's social interaction skills, to promote more positive peer relationships, and to give children a vehicle for social acceptance by others." Social skills interventions should contain lessons on the necessary skills to be acquired. According to social learning theory and applied behavior analysis, these

psycho-educational lessons should include opportunity for modeling, role-playing, performance feedback, and transfer of training (Skinner, 1953 & Bandura, 1977, as cited in Lane, 2005; McGinnis et al, 1984). A group format allows for the participation of a larger number of students and for the opportunity of learning through social experience.

Organizing Intervention Groups

"Heterogeneous groups are very effective and allow for the inclusion of students who will serve as positive role models" (Mehaffey & Sandberg, 1992). The group-approach "encourages the formation of associations and friendships while providing a setting for the practice of learned skills" (Mehaffey & Sandberg, 1992). Implementing intervention groups in the classroom allows the students to learn these skills in a natural context, aiding in transfer of learning. The classroom provides a familiar, safe, and rule-oriented environment. Nevertheless, a student's classroom characteristics do, in some cases, affect children's reports of their own experiences of victimization from peers (Leadbeater et al, 2003). Therefore, self-reports of students social skills should be interpreted within the context of that student's classroom.

Preparing Intervention Leaders

Intervention leaders should be trained in "the intervention and management procedures" necessary for efficient implementation of social skills training groups with elementary school-age children (Lane et al, 2005). Within the education system, there are many individuals qualified to become intervention leaders. Previous investigations cite teachers, school counselors, and school psychologists as intervention leaders (Lane et al, 2005; Lohrmann & Talerico, 2004; Mehaffey & Sandberg, 1992). An intervention leader could acquire the skills necessary for implementation through university training, field experience, or direct training on the social skills training program used.

Implementing Interventions

Social skills training with children should be implemented in a safe environment which provides opportunity to develop the skills in the most natural context available. As previously discussed, a child's school classroom provides this environment. At-risk children show significant improvement in social skills when a combination of self-monitoring, teacher-peer mediated support, and positive reinforcement is provided (Christiansen et al, 2004).

Initially, a short number of rules are established to aid in a smooth implementation of the training sessions (McGinnis et al, 1984). The length of each session should vary according to a child's grade. Session lengths in previous research on social skills training vary from 20-45 minutes (Lane et al, 2005; Schaefer, 1982, as cited in Mehaffey & Sandberg, 1992; Webb et al, 2005). Forms should be made "available for the student to complete if they are unsuccessful at solving a problem with a peer or a teacher independently before a class meeting" (Frey, 2001). This allows students to suggest skills they

would like to learn. To assist in the generalization of skills, homework assignments require students to practice learned skills outside of the classroom (Clark & Dixon, 1997).

Monitoring Student Progress

NCLB emphasizes the importance of enabling "student progress to be monitored and evaluated in such a manner that accurate conclusions can be drawn about intervention outcomes" (Lane et al, 2005). Student progress must be monitored through "formal evaluations" (Frey, 2001). There are many formal methods of evaluating student progress during social skills training. It can be evaluated at baseline, during intervention, and post-intervention, using teacher ratings, self-reports, and direct observation procedures (Lane et al, 2005). The rating scales used to gather pre-intervention information can be used post-intervention to compare ratings and confirm growth.

Participants

Nineteen first, second, and third grade students (52% girls, 48% boys) were included in the study. During the 2005-2006 academic year, participants attended the gifted program at a public elementary school in a southeastern state in America. The participants in this research study were selected through teacher nomination and convenience sampling.

Instruments

The program "Skill Streaming the Elementary School Child" was developed to instruct teachers of elementary-age children to teach pro-social alternatives through a method called Structured Learning (McGinnis et al, 1984). Structured Learning involves teaching social skills through the methods of social learning theory and applied behavior analysis identified earlier. All five main types of social skills identified by its author were taught to participants in this study with two selected specific skills under each of these main types. The materials for this program provide all the information necessary to implement social skills training, such as a detailed explanation of Structured Learning procedures, behavioral steps for children, and homework worksheets for teaching the skills. To identify a child's strengths and weaknesses, forms such as the Student Skill Checklist (SSC) are provided.

The SSC is a self-rating form which requires reflection on each of the social skills taught in the program. It is written at a third-grade level and is suggested for children at this level (McGinnis et al, 1984). Helping children complete this checklist at the beginning of the sessions can aid in the establishment of rapport between the trainer and the children. The checklist contains a number of statements under each of the five types of social skill scales. It was used to identify student's perceptions of their own social skills before and after the intervention in order to measure student growth.

Procedures

Parent permission forms were sent home to all students nominated by the gifted program's teacher. 100% of the forms were returned with guardian signatures, allowing for the inclusions of all of the

students in the classroom in the study. After these forms were returned, the investigator and the program were introduced to the participants. A regular time for ten weekly twenty-minute sessions was determined.

Following this introduction, the investigator met with the students once more before the training began. During this meeting, materials such as folders, a behavioral contract, and nametags were distributed. Four rules were established between the students and the investigator: (a) Wait your turn to talk, (b) Listen to others, (c) Respect the rights of others, and (d) Remember to leave toys and other things at your desk. The behavioral contract was signed; it required students to follow the rules, bring materials, and participate each week in order to receive a reward. The investigator ensured that each participant understood and completed the SCC prior to participation in the training sessions. A shoebox was left in the classroom for anonymous suggestions on topics students would like to discuss.

Each week, the social skills training sessions were conducted according to program manual. Sessions were conducted by the investigator who was knowledgeable about the process. Weekly lessons included modeling, role-playing, feedback, and homework assignments on the specific behavioral steps for the skill being taught. The skills were selected according to student and teacher suggestions.

At the completion of the intervention, student completed the SCC once more. A review of all of the skills covered encouraged students to reflect on their learning. The investigator then debriefed the students as to the intentions of the study. An article describing what parents can do to promote social skills (Harrington, 2004) was sent home along with a letter of gratitude for allowing the students' participation in the study and a description of class results.

Design

SPSS was used for statistical analysis of results. Means were computed for each student on each of the five social skills scales. The intervention effect was analyzed to determine if social skills training was effective. An analysis of variance (ANOVA) was most appropriate to test the two initial hypotheses. Pre-intervention and post-intervention scores were compared using within-subjects ANOVA. To determine gender differences, between-subjects ANOVA was used.

Results

A 2x2 ANOVA mixed design was conducted to test intervention effectiveness and to determine the extent of gender differences. Overall, a main effect for the intervention was found, indicating significant improvements in participants' self-ratings of social competence after social skills training ($F = 9.071$, $p = .003$). Participants showed a 0.167 improvement in self-ratings after the intervention. In addition, male students demonstrated higher initial self-ratings than female students. However, a significant interaction was discovered between gender and the intervention ($F = 3.897$, $p = .052$) showing greater improvement for females (Mean = .2776). Table 1 provides a descriptive summary of gender mean differences on pre- and post-measures.

Table 1. Descriptive Statistics of Self-Rating Means According to Gender Type

				95% Confidence Interval	
Gender		Mean	Std. Error	Lower Bound	Upper Bound
Female	Pre-	3.895	.086	3.724	4.067
	Post-	4.173	.086	4.001	4.345
Male	Pre-	3.983	.091	3.801	4.164
	Post-	4.040	.091	3.859	4.222

A paired samples *t* test was conducted in order to compare the improvement of male versus female students. According to this analysis, male students did not demonstrate significant improvement after the intervention (Mean = .0577, p = .467). The female mean improvement was found to be significant (p = .001). Figure 1 shows the mean improvement in social competence for males versus females.

No significant interactions were found between the overall intervention and type of skill. A follow-up analysis using a 5x2 mixed design ANOVA was conducted in order to determine whether or not an interaction exists between gender and social skills type (Classroom Skills, Friendship Skills, Feelings Skills, Aggression Skills, and Stress Skills). No significant difference in regards to skill type was found.

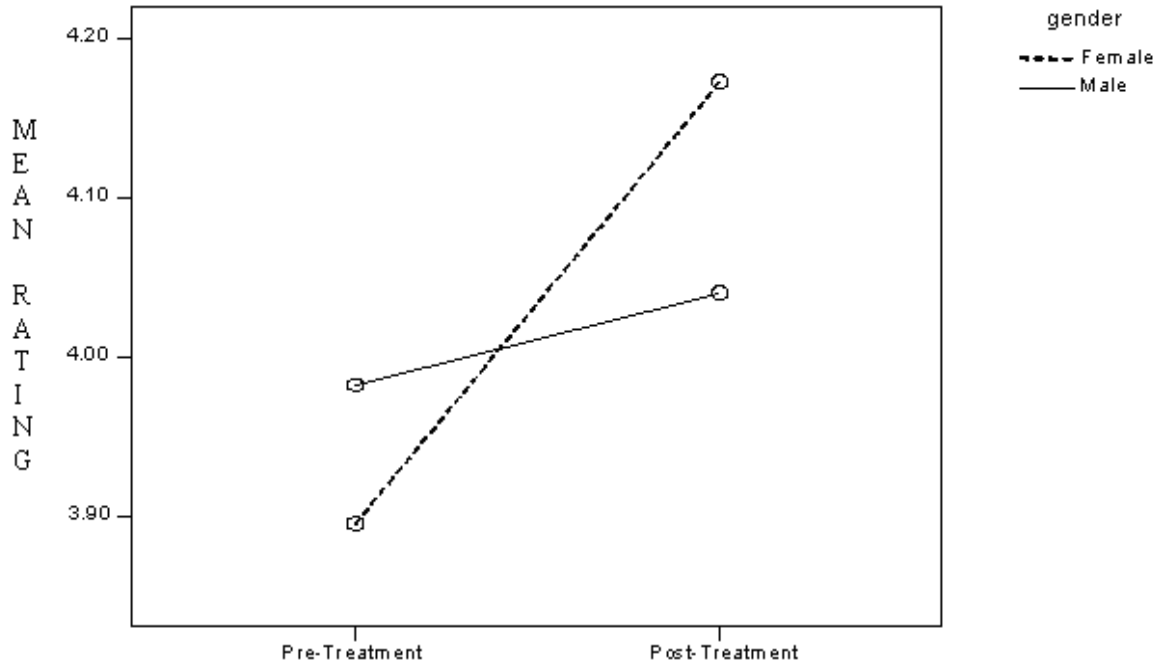

Figure 1. Mean Improvement According to Gender

Discussion

The present study investigated the effect of social skills training on first, second, and third grade gifted students. Self-perception of social competence is central to a child's psychological well-being (Boulton, 2005). The researchers anticipated producing or confirming valuable information regarding the effect of social skills training on elementary school-age gifted children. The proposed hypothesis was that there would be a significant positive increase in social competence after treatment. Overall, an ANOVA mixed design revealed a significant positive effect. Therefore, preliminary findings confirm the value of social skills training for gifted children.

The researchers also hypothesized that gifted boys would demonstrate lower pre-intervention self-ratings. According to previous research, girls develop higher social competence than boys through social experiences in early childhood (Walker, 2005; Boulton, 2005). In this study, gifted boys demonstrated higher initial self-ratings of social competence. These results did not support the research hypothesis or previous research results. One could speculate that early childhood socialization varies from the gifted to the regular classroom setting. Social experiences within the gifted classroom may encourage the development of social competence to a higher degree in boys than in girls. While rule games have a positive effect on boys' social development, participation in these type of games negatively affect girls' perceptions of social competence (Boulton, 2005). Within the gifted classroom, rule games may be encouraged and thus may negatively impact girls' self-perceptions of their own social skills.

Additionally, girls showed higher increases in self-ratings after social skills training. Girls' social competence increased significantly, while boys demonstrated minimal improvement. It appears that boys not only demonstrate slightly higher initial self-ratings, their self-competence is relatively stable despite environmental influences. Girls' self-perception of social competence may be more strongly affected by both positive and negative ecological factors, such as direct instruction in social skills or conflict with peers.

Limitations

Study limitations should be considered when interpreting the results of the present study. These limitations may have contributed to results that did not support the initial hypotheses. Due to the nature of action-research, a convenience sampling method was employed. This sampling method limited the sample size due to a low population of gifted children in the participating school. A low sample size can hinder applicability of research results to the general population.

Implementation of social skills training in only one classroom did not allow for the inclusion of a control group in the study design. The quasi-experimental nature of the study did not allow for a clear comparison of children receiving training versus children not receiving training. Improvements in social competence could be due to normal development or ecological influences other than the intervention.

Implication for Future Research

Limitations of the present study imply possible paths for future studies. Controlled trials using an experimental research design are the next step in investigating the effect of social skills training on gifted children. A sample size representative of the general population of gifted children may allow for greater generalizability of results. Ideally, participants should be randomly assigned to an intervention group or a control condition. Furthermore, participants with varied ethnicities, socio-economic status, curriculum exposures, grades, and ages should be included.

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DR. SKATEBOARD'S ACTION SCIENCE: INCREASING SCIENCE KNOWLEDGE AND SKILLS FOR MIDDLE SCHOOL TEACHERS

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ABSTRACT

Dr. Skateboard's Action Science maps to the physical science Texas Essential Knowledge & Skills (TEKS) standards that all middle school students need to learn. Dr. Skateboard's Action Science explores scientific concepts in a curriculum supplement that is designed to address both physical science content and process skills. The video instruction focuses on fundamental concepts found in the areas of motion, forces, Newton's Laws of Motion, and simple machines. The use of familiar activities, situations and objects, such as skateboarding and bicycle motocross (BMX), around which students can explore and explain scientific concepts can be defined as action science. The main purpose of the approach is to provide an interesting method of engaging students in the exploration of science in a real world context.

As an extension of this approach for the classroom, approximately 25 teachers were chosen to be part of a cohort chosen by the Gaining Early Awareness and Readiness for Undergraduate Programs (GEARUP) program. GEARUP was developed to expand students' educational opportunities and to assist participants in becoming college eligible and then academically successful in higher education. The participating teachers were involved in a series of workshops designed to enhance their instructional methods and science content knowledge, which they would utilize in teaching students participating in a GEARUP summer institute. The goal of the workshops was to model the use of student-centered constructivist approaches through the integration of video instruction and classroom activities materials for use in science classrooms.

Keywords: Action Science, Physics, Forces, Motion, Simple Machines

Education Plan for Teacher Preparation

Dr. Skateboard's Action Science is a curriculum supplement that integrates both skateboarding and BMX. It incorporates a four part video series and twenty classroom activities for students and teachers to use in the classroom. The video and classroom materials focus on the physical science concepts found in the areas of motion, forces, Newton's Laws of Motion, and simple machines. These materials also provide the classroom teacher with an instructional series rich with science content information. The activities include topics such as momentum, center of gravity, inertia, centrifugal and centripetal

forces. The purpose of the activities is to engage students in meaningful science topics set in the context of something they enjoy doing, namely skateboarding and BMX. The main emphasis is to link the concepts of science to action sports and to engage students in the exploration of science in a real world context.

Dr. Skateboard's Action Science engages the learner in the process of acquiring critical knowledge, developing proficiency in problem solving, engaging in self-directed learning, and participating in collaborative teams. For the educator, the video segments and activities should be used in tandem, as the videos provide action, but also relevant content for the classroom. The video segments may be shown in their entirely within a given episode, or the instructor may choose to use a portion of the video to highlight a given topic that will be explored in a classroom activity. For example, the teacher may want to show the portion of the "Forces" video that covers the concepts of centripetal and centrifugal forces prior to doing the activity "Finding or Fleeing the Center of a Loop". For each of the activities, the associated section of the video segments can be used as hooks to introduce the activity and as a review for the content covered within the classroom. The activities are provided on the DVD as single lessons from which to print copies for classroom instruction. The entire activity manual is also available complete with a glossary of terms and definitions.

In the classroom, constructivist curriculum must be designed so that it reflects real life situations (Bentley, 1995). Curriculum developers who use the social context of learners, define this approach of content organization as contextualizing the concepts and organizing the content taught in distinct disciplines of study (Hofstein and Yager, 1982). Research scientists cross over the barriers between disciplines all the time, and seldom operate solely on isolated areas of content, but integrate the use of language, knowledge and process application. Relevant and relatable materials give students the ability to retain facts through critical thinking by working through problems logically and making connections to the real world. "Students should know what it feels like to be completely absorbed in a problem. They seldom experience this feeling in school" (Bruner, 1962). Studies have shown that students, who are involved in active learning in meaningful contexts, acquire knowledge and become proficient in problem solving. (Robertson, 2008).

Students exploring a concept should be given opportunities to work with materials and manipulatives so that they can have experiences that are real and fundamental. Hands-on learning plays a valuable role in the constructivist paradigm, as it is the process of "learning by doing" (Dewey, 1970) that actually engages the learner. So much fascinating content is at the fingertips of learners everywhere, and with technology becoming more affordable, more and more information is accessible to students. It is important to place students in learning situations that effectively integrate their own experiences and familiar materials that students can use to better understand specific concepts (Eisenkraft 2003). For example, students who enjoy skateboarding can be given opportunities to explore the concepts of velocity, acceleration, center of gravity, and moment of inertia. They may also use the skateboard and a local skatepark to investigate topics such as inclined planes, levers, fulcrums and screws. The purpose of this approach is to allow the students to explore meaningful content set in the context of something in

which they have experience.

The student is always defining meaning within the context of action and reflection (Brooks and Brooks, 1993), and meaning can be seen in context within a social situation. Each learner understands content and concepts differently based on his or her previous experiences. Yet, educators must beware of regarding the learner's point of view as fully complete and significant in and of itself (Dewey, 1970). The students need opportunities to address misconceptions and to develop concepts in real world situations. "Students come to school with their own ideas, some correct and some not, about almost every topic they are likely to encounter" (Rutherford and Algren, 1990). Learning is the responsibility of the learner, but it is the teacher who must guide the student into developing meaning from content material and classroom experience.

As students explore concepts, they develop a deeper understanding of the purposes of specific content. When they relate what they are learning, seeing or doing to others, they can begin to see similarities in their understandings, as well as self identify misconceptions they may have about content material (Bybee, 2006). This sharing within cooperative groups is a fundamental strategy in constructivism, as it allows the teacher to facilitate the learning process, and the students to develop a common base of experiences. Problem-solving strategies depend on conceptual understandings, and hands-on exploration of simple topics combined with collaborative interaction among students helps to build an understanding of processes and concepts (Apple, 1993).

Teacher Preparation Summer Institute Overview

As an extension of the use of Dr. Skateboard's Action Science, approximately 25 teachers were chosen to be part of a cohort chosen by the Gaining Early Awareness and Readiness for Undergraduate Programs (GEARUP) program, a five-year program funded by the Department of Education. GEARUP was developed to expand educational opportunities and to assist students in becoming college eligible and then academically successful in higher education. The participating teachers were involved in a series of workshops to enhance their instruction and science content knowledge, and the goal of the workshop series was to model the use of the materials associated with Dr. Skateboard's Action Science for use with students in classrooms.

The summer institute for teachers ran on June 11-12, 2009, with follow-up trainings held on June 19 and June 26, 2009. The workshops were designed to increase their content knowledge in physical science as well as their attitudes towards science teaching and learning. Additionally, the teachers were to participate in two days of professional development and enrichment centered on pedagogical strategies and educational approaches for teaching science at the Middle School level. In the initial training sessions, the goals were to engage the teachers in activities from Dr. Skateboard's Action Science and to model the use of activities from each focus area in the classroom. The focus areas were forces, energy, motion and Newton's Laws of Motion, and the participating educators engaged in the actual activities in

the same manner in which they would in turn facilitate students in the GEARUP Summer Student Institute.

Throughout this training the teachers were engaged in hands-on activities, which they in turn used to guide Middle School students in fundamental content understanding in Physics, Materials Science, and Mathematics. Pedagogical practice sessions focused on the use of inquiry-based learning, questioning strategies, brainstorming, constructivism, learning styles, and guided facilitation techniques for involving students in classroom explorations. This training approach allowed the faculty to support the teachers with focused instruction in pedagogy and provided multiple opportunities for engaging students in additional demonstrations. The workshops were designed to help the teachers critically examine the perspectives, philosophies, materials, and strategies for effective learning.

On the morning of June 11, the teachers were given background information and introductory materials related to the concept of action science and how familiar objects can be used to teach science. Additionally, teachers were provided with an overview of the DVD (Dr. Skateboard's Action Science) and the classroom resources available on it. Following this introduction, the teachers were lead through two activities from the DVD: Forces: Flatland BMX and the Center of Gravity & Energy: Dropping in with Potential and Kinetic Energy.

The training for this was well received, as teachers participated enthusiastically and commented on how useful and practical this approach would be for them to use with their students. For example, the use of the video segment in the "Forces" video focuses on the concept of the center of gravity, which additionally bridges the concepts of gravity and lift. Prior to showing the video segment, open-ended questions were used with the teachers in order to activate their prior knowledge concerning this content. Sample questions included, "What do you do when you ride a skateboard or a bicycle?", "How do you balance on a skateboard or bike?" and "What forces are acting on you as you are trying to ride a bike or skateboard?". Additionally, this approach can help reach previously marginalized students, who may have experience in these activities, but may struggle in science, and can now become experts in this discussion and contribute to the classroom investigations.

Finally, each workshop segment concluded with a series of focused science content questions such as, "What is the center of gravity and why is it important?" and the discussion was facilitated in order to introduce the segment in the "Forces" video that covers the concepts of gravity, lift and the center of gravity. This approximately 4 minute segment of the video then served as the engagement to the activity "Flatland BMX and the Center of gravity" in which participants created irregular cardboard shapes and determined the object's center of gravity. Teachers exploring a concept, just like students, should be given opportunities to work with hands-on materials so that they can have experiences that are real and fundamental.

Next, the teachers modified their shapes by either adding paper clips (which increased the mass) or by cutting off part of some of cardboard (which decreased the mass). In turn, they came to see that there is a fundamental relationship between the center of gravity and the mass of an object, and that the

center of gravity would move in relation to an increase or a decrease in mass. After the classroom lesson, the teachers were asked to verbally explain their findings and the relationships they discovered from within the activity. As the teachers explored the concepts, they developed a broader understanding of those concepts, and a deeper self constructed content knowledge base. When they related what they were learning, seeing or doing to others, they began to see similarities in their understandings, as well as self identify misconceptions they may have about content material (Bybee, 2006). Finally, there was a list of open-ended questions for the teachers to answer, as well as a series of extensions that they could use to engage students if there was additional time and motivation to learn more. Each activity in this series was modeled in terms of constructivist instruction and done in the time frame of a normal class period. This approach provided the teachers with relevant ways to deliver science content and interesting alternatives to exploring these fundamental physics ideas with students.

On the morning of June 12, the teachers were given a review of the previous day and then moved directly into the next two activities; Motion – Speeding Down a Ramp with Velocity & Newton's Laws: Action Reaction/Rocket Car. The topics covered in these activities were also fundamental to the concepts to be explored in the workshops with the actual materials the teachers would use with the students in the coming weeks. After the successful completion of the activities, the teachers were given activity kits, which consisted of all the necessary materials for the classroom activities for a class of approximately 25 students. This was followed by a discussion that centered on the deconstruction of the activities, both from content and pedagogical perspectives. This was done in order to identify aspects that worked well, areas to strengthen for the coming weeks, as well as the pedagogical strategies to employ when using these materials with students.

On June 19, the teachers reassembled for a review of the previous week in which they used these activities with students involved in a summer GEARUP program. Following this session, the teachers were lead through a Socratic Questioning demonstration and then through a discussion and presentation on inquiry-based science. Additionally, the teachers participated in 2 new classroom activities; Simple Machines: Skateboards Have Levers & Fulcrums as well as Simple Machines: Levers & Fulcrums Using Inquiry. The purpose was to show more resources from the DVD as well as different methods of extending the classroom materials to emphasize inquiry in the context of the classroom.

As such, the materials in Dr. Skateboard's Action Science can also be utilized to emphasize inquiry in classroom explorations, and the teachers were guided in this approach in a student-centered, teacher facilitated method. For example, as a foundation for discovery, the teacher can use the video segment in the "Simple Machines" episode that relates to fulcrums and levers, and then have the students perform the classroom activity "Skateboards Have Levers and Fulcrums". After the activity, the teacher may revisit these ideas and then create an extension inquiry exercise for the students to do in teams. The teacher can provide the students with the same materials used in the activity such as rulers, tape, plastic spoons, rubber bands, and modeling clay and challenge the students to design a simple machine made of at least three of the provided that uses a lever and a fulcrum and can propel a small marshmallow the farthest distance.

In making this transition from procedural activities to open-ended explorations in class, the teacher guides the students towards developing their own ideas and within a given time period, has the students create and test their unique designs. By engaging students in a design competition, there is a spirit of enthusiasm and excitement among the groups. This approach also presents excellent opportunities to develop cooperative group skills and to have students use critical thinking to solve the problem presented. "Students should know what it feels like to be completely absorbed in a problem. They seldom experience this feeling in school" (Bruner, 1962, page 50). Finally, the teams of students not only have to launch the marshmallow, but they also have to record the distances, calculate the average distances travelled and indentify the lever and fulcrum within their machine. In this manner, the students have to present their ideas, justify their understandings and support their findings with experimental data.

On June 26, the teachers reassembled for a final training session and review of their previous week in the use of the action science approach. They were lead through a series of brainstorming exercises, as well as demonstration of its features, using concept-mapping software and each teacher was given a complimentary trial copy of the program. The features of the software as well as its use in brainstorming and the development of concept maps were modeled for the group. Next, the teachers were lead through a presentation on how classroom culture impacts education, which emphasized learning styles and the importance of emphasizing critical thinking in the science classroom. This approach was then demonstrated through a guided facilitation science demonstration that showed how to integrate this approach in a practical manner. Finally, the 5Es of Constructivism were presented so that teachers had an understanding of the teaching and learning process around which all this training was built and delivered.

Constructivism is a learning strategy that builds upon students' existing knowledge, beliefs, and skills (Brooks and Brooks, 1993). Within a constructivist approach, as students encounter new information, they work to synthesize new understandings based on their current experiences and their prior learning. In other words, the constructivist approach to learning states that learners of all ages build new ideas on top of their personal conceptual understandings (Eisenkraft 2003). In this process, students and teachers experience common activities, while applying and building on prior knowledge. Learners construct meaning while continually assessing their understandings of concepts. Constructivism can be characterized as a five-phased process known as the 5Es, in which each phase begins with the letter E. The 5Es include the engagement phase, the exploration phase, the explanation phase, the elaboration phase and the evaluation phase (Bybee, 2006). Students and adults are enabled to construct a deeper and more comprehensive understanding through activities that match their cognitive capabilities. "The important point is that each (learner) has their own construction, their own understanding, rather than some common reality" (Duffy and Jonassen, 1992, p.6). The key is to build on previous learning and to apply new learning in a meaningful context.

Evaluation Results

The teachers were pre-tested and post-tested in both their physical science content knowledge and their attitudes toward teaching and learning. The content test was the same measure that students used in the summer institute and the attitudes test was modified from the Science Teaching Efficacy Belief Instrument Form B (STEBI-B). The teacher participants were from similar demographic and geographic locations in the city of El Paso in the state of Texas.

This research study may be defined as the design, collection, and interpretation of data and information in order to understand the value of an instructional methodology (Isaac, 1971). To measure the increases in student learning in teaching efficacy and science teaching outcome efficacy, specific educational objectives were tested and the results analyzed. Each evaluation instrument was administered twice to each participant over the course of the intervention. The educational objectives reflected the core attitudes and behaviors that teachers needed to achieve in the area of science education as stated by the state and national science standards.

Science Content

The teachers were pre-tested and post-tested over the science content using a 10-question exam that addressed the fundamental concepts to be covered in the summer institute. The topics included center of gravity, potential energy, kinetic energy, motion, velocity, force and motion. The questions consisted of 5 open-ended descriptive questions in which the participants answered textually to describe situations depicted in images. The other 5 questions were multiple-choice questions and the teachers had to choose the best answer for the statement. The tests were assessed and given a score out of 20 total points.

The scores of the teachers on the pre-test (N=26) ranged from six (6) to eighteen (18) with higher scores indicating stronger and more positive content understanding to the topics in physical science (Mean = 11.96). The scores of the teachers on the post-test (N=22) ranged from thirteen (13) to twenty (20) with higher scores indicating stronger and more positive attitudes towards student achievement and teacher ability in science (Mean = 16.91).

The teacher scores for the science content area showed a regular improvement over the period of the summer institute, with teachers increasing almost 5 full points on average. This demonstrates an average increase of 25% for content knowledge in physical science content during the summer institute, a finding that can be seen as extremely effective and important. Although the number of teachers did decrease from 26 to 22 from the pre-test to the post-test, the impact of this approach on teacher content cannot be underemphasized.

Attitudes Towards Teaching Science and Students in Science

Additionally, the teachers were pre-tested and post-tested using the Science Teaching Efficacy Belief Instrument Form B (STEBI-B). The STEBI-B measured the two factors of science teaching efficacy, an

individual's personal science teaching efficacy and science teaching outcome efficacy. Personal science teaching efficacy can be defined as the belief about one's own capabilities to facilitate the learning process within the context of science. The instructor for the students for learning science content can define Science teaching outcome expectancy as the measurement of the expectations.

The teachers were initially pre-tested before instructional sessions began in order to develop a baseline of their aptitudes and expectations towards teaching, as well as their current understanding and abilities in effective pedagogy. The teachers were post-tested at end of the fall workshops. Using a 5 Point Likert Scale (5=High to 1 = Low), the pre-tests and post-tests were evaluated. The scoring instructions provided a method for ensuring that the relationship between negatively and positively phrased statements would produce consistent values (Enochs & Riggs 1990).

The surveys were administered with no set time limit, and the estimated time for each survey was 15 minutes to complete the 23 questions. The attitudes questionnaire contained items that were phrased both positively and negatively, and the participants submitted all the information. Both positive and negative items contributed to the final total in which higher scores indicated more positive attitudes toward computers and technology. The highest possible score on the examination was 115.

Each of the 23 statements was characterized within a five-point Likert scale. The definitions for the scale were as follows: "strongly agree", "agree", "uncertain", "disagree" and "strongly disagree". There were 13 positively phrased questions and 10 negatively phrased questions. The scoring for each question was as follows:

Positively Phrased Items: 1, 2, 4, 5, 9, 10, 11, 12, 14, 15, 16, 18, and 22
Scoring: Strongly Agree=5, Agree=4, Uncertain=3, Disagree=2, Strongly Disagree=1
Negatively Phrased Items: 3, 6, 7, 8, 13, 17, 19, 20, 21 and 23
Scoring: Strongly Agree=1, Agree=2, Uncertain=3, Disagree=4, Strongly Disagree=5

The scores of the teachers on the pre-test (N=26) ranged from seventy-one (71) to one hundred and six (106) with higher scores indicating stronger and more positive attitudes towards student achievement and teacher ability in science (Mean = 83.96). The scores of the teachers on the post-test (N=22) ranged from seventy-seven (77) to one hundred and eleven (111) with higher scores indicating stronger and more positive attitudes towards student achievement and teacher ability in science (Mean = 97.05).

Generally, teacher attitudes increased in the areas of science teaching and the expectations towards learners in science. Over the period of the summer institute, the teacher scores increased over thirteen full points (13.09) on average. This demonstrates an average increase of almost 11% for science attitudes during the summer institute. As in the content exams, the number of teachers did decrease from 26 to 22 from the pre-test to the post-test.

Educational Importance of the Study

The use of action science as a mechanism for integrating transformative education is an approach that appears to be enhancing the interest and motivation of middle school teachers in science. It is the purpose of Dr. Skateboard's Action Science to positively impact achievement for Middle School students in the area of physical science knowledge and skills. By immersing teachers in a science learning approach that is based on action sports and focuses on the goals and objectives in physical science, the participating teachers' overall content knowledge and attitudes towards the teaching of science and learners greatly increased.

Based on these preliminary findings, the teacher's content understanding and personal beliefs of their abilities to teach and facilitate learning show that the teachers participating in the pedagogical workshops believe they now have a greater impact in teaching. Additionally, the results from the science teaching outcome expectancy point out that the teachers also believe they have a greater effect on student learning. The increased capacity for teachers to translate increased self-efficacy and outcome expectancy beliefs into increased teaching confidence, and that increased science content acquisition is also a positive effect in their teaching.

The educational importance of this study can be extended to reflect that the results of increased science content and attitudes combined with the increased expectations for student achievement by the teachers also extended across the disciplines of the study, as well as across gender. The importance is that with the instructors providing classroom time for students to actively engage in concepts, the depth and breadth of content understanding can be increased, and this may help to increase the number and diversity of students participating in science, mathematics, engineering and technology majors. Finally, this study gives relevance to the idea that more focused group work directed by teachers, can be effective in other scientific disciplines, including chemistry, computer science and mathematics. This type of training can be seen as effective in helping increase conceptual understanding of classroom material in the context of workshop explorations.

Overall, immersion in the GEARUP Summer Institute did change teachers' attitudes toward teaching and learning science as well as their content knowledge associated with the science of the workshops. Teachers in the sample exhibited relatively positive attitudes toward teaching science and the expectations for students in science, but showed a marketed increase in this efficacy over the course of the study. On average, teachers involved in the GEARUP Summer Institute positively increased their attitudes (11%) and content knowledge (25%). The results indicated that the GEARUP Summer Institute did help to increase physical science content understanding, an area often undeserved for Middle School teachers. In other words, no matter if the teachers liked science or not, enjoyed teaching or not, the GEARUP Summer Institute approach helped to increase science content understanding and attitudes towards teaching and learning.

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ADDRESSING CLASSROOM MANAGEMENT CONCERNS OF NEW TEACHERS IN AN ALTERNATIVE CERTIFICATION PROGRAM

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ABSTRACT

Effective classroom management is a skill needed by all teachers for effective instruction. Research literature has shown that effective classroom management and discipline have a positive effect on new teacher retention and rates of student achievement. However, this skill is one that often eludes new teachers. Classroom management is also an area new teachers have identified they were not adequately prepared to deal with. The proposed research will investigate new teachers' perceptions of their professional preparation and descriptions of the classroom management training that would have benefited them most. Results will be used to make recommendations to the local teacher education program. These recommendations will include adjustments to the current alternative certification program, to better meet the reported needs of the candidates.
Keywords: classroom management, teacher education, new teachers, alternative certification

Introduction

Effective classroom management is a vital skill for teachers to possess. Limited classroom control and ability to manage disruptive behaviors causes instruction to be disjointed and meaningless, resulting in low levels of understanding. Research shows that even under the best of managed circumstances, less than half of the day is used for instruction (Karweit, 1988). Effective classroom management conserves instruction time by planning activities and tasks to fit the learning materials; by setting and conveying both procedural and academic expectations; and by appropriately sequencing, pacing, monitoring and providing feedback for student work (Emmer, Evertson & Anderson, 1980; Evertson & Emmer, 1982). Best practices in pedagogy tell us that higher levels of student achievement require activation and application of higher order thinking skills. In order to implement more intellectually demanding academic work, complex classroom management decisions are essential. This illustrates the interrelated nature of classroom management and curriculum, which are both crucial for academic success (Doyle & Carter, 1984). Although effective classroom management and challenging student work is necessary for optimal learning, there is one more factor to consider. Classrooms with high levels of student engagement but meager academic content result in low levels of learning (Weade & Evertson, 1988). Content knowledge competence is necessary for teachers to design lessons that engage students' thinking processes and their attention. Therefore, improving the classroom management proficiency of alternative certification candidates should have a positive impact on closing the achievement gap. This

is particularly true for candidates who are well versed in the content areas, like the Teach For America (TFA) corps members.

Effective classroom management has also been linked to teacher self-efficacy and teacher retention. New teachers who felt successful in managing their class and their overall abilities as a teacher were more likely to stay after the first 5 years of teaching (Kapadia, Coca & Easton, 2007). New teachers who experience pronounced challenges with disruptive student behavior transfer from school to school or leave the profession within the first 3 years of teaching, which causes instability in the teaching force (De Angelis & Presley, 2007). An unstable pool of quality teachers can have a negative effect on student achievement (Sanders & Rivers, 1996).

New teachers find it difficult to focus on improving student achievement because of problems with student discipline. Managing violent student behaviors and preventing disruption during instruction are the most prevalent challenges to providing a quality teaching experience for students. This is of particular concern to alternative certification candidates who are placed in high needs, high poverty areas to fill vacancies where discipline problems historically exist at high levels. New teachers in these settings need training that is transferable and adaptable to their setting. However, the techniques-oriented discourse on classroom management that is often provided to new teachers oversimplifies the issues regarding classroom management. Classroom management is presented as a well-structured problem that has a correct and an incorrect way to handle problems in the classroom, regardless of the contexts. This approach leaves new teachers with a set of tips and strategies to use, but limited knowledge of how to implement them. This suggests that new teachers need training that provides skills, strategies and practical applications in familiar and unfamiliar contexts, through simulation and in-service support (Garrett, 2007).

Besides identifying classroom management as a primary concern in their first year of teaching, new teachers have also described their preparation in classroom management as inadequate (Marshall, 2003). Graduates from four-year teacher education programs identify classroom management as one of the areas that provides the most challenge and the one area they feel least prepared to deal with independently. The most cited classroom management challenges were student violence and classroom disruptions. Student violence is defined as violent acts between students and violent acts upon the teacher by a student (Garrett, 2007). Through a review of the literature and proposal of a new study, the researcher hopes to gain insight on how teacher education programs can address the classroom management concerns of new teachers through improved, comprehensive preparation.

Review of the Literature

A review of the literature will provide a background and context for the proposed study by presenting several emerging themes: new teacher attrition and efforts to improve retention, classroom management as a link to student achievement, classroom management concerns of new teachers,

inadequate preparation for classroom management challenges, and how teacher education programs are currently addressing classroom management training.

Conceptualization of the problem

School reform and accountability measures can be traced back to *A Nation at Risk* (1983) which highlighted two obstacles that the educational community is still striving to overcome today: ineffective use of classroom time and retention of teachers despite diminishing rewards. Although increased student achievement is the primary impetus for school reform, there are barriers that complicate these goals. One major roadblock is that roughly one half of all classroom time is taken up with activities other than instruction, and discipline problems are responsible for a significant part of this lost instructional time (Cotton, 1990). Brophy and Evertson (1976), in their study on teachers' effectiveness in producing gains in student learning, indicated that the same teacher behavior that reduces discipline problems in the classroom is also associated with increased student learning. Cultivating effective classroom management skills in each cohort of new teachers could have a profound impact on student achievement. Although classroom management skills are essential for all teachers to be successful, it is even more crucial for new teachers. New teachers who are unsuccessful classroom managers often leave the field of teaching in the first two to three years, before they are able to perfect their craft. This "revolving door" has a negative impact on schools in general and the achievement gap in particular (Carpenter, 2006; Hanushek, Kain & Rivkin, 2004).

New Teacher Attrition and efforts toward improving retention

Twenty seven percent of new teachers leave the teaching profession in Illinois public schools and do not return. Overall, more than two out of five (44%) new professionals leave their first school within the first two years of teaching, and 67 % leave their first school within the first five years. Exit interviews of those leaving the profession suggests that conditions in schools, lack of administrative support and issues related to student body characteristics greatly influenced the teachers' decisions to stay or leave (De Angelis & Presley, 2007; Hanushek, et al., 2004). Problems with student discipline and lack of administrative support around those problems have been the condition in schools that causes a large number of new teachers to leave the profession of teaching.

New teachers with strong academic qualifications are another group of new teachers at risk of leaving the profession prematurely. This group is defined as new teachers who graduated from highly selective universities with an average ACT score of 25 or higher. New teachers with strong academic backgrounds are also more likely to leave disadvantaged schools within five years (De Angelis & Presley, 2007). This finding is of great concern to the researcher in that the alternative certification candidates in the proposed sample were recruited by Teach For America from highly selective institutions of higher

education. The "best and the brightest" are being recruited to bring their extensive content knowledge into high-needs schools. Since teacher quality and teacher retention is directly related to increased student achievement, securing a cohort of teachers with a strong academic background and commitment to teach could have a profound effect on closing the achievement gap persistent in urban schools. Teacher retention also improves teacher effectiveness because novices need time and practice to improve pedagogical skills. For example, Sanders & Rivers' 1996 study illustrated when students had consistent, effective teaching from a stable teaching force, they made reading gains at a rate of 54% higher than their counterparts who were taught by "weak" teachers. "Weak" teachers were described as teachers who quickly revolved in and out of the local school (Hanushek, et al., 2004; Sanders & Rivers, 1996). Reduction of teacher attrition, especially among new teachers with strong content knowledge, could definitively reduce the achievement gap.

Teach For America (TFA) is a program that seeks to close the achievement gap by filling vacancies created by the turnover in high needs areas. Strategic recruitment and professional development initiatives may also explain how they are positively influencing teacher retention. TFA is a national program that places high-achieving college graduates as teachers in some of the nation's most challenging schools, and requires them to teach for at least two years. In her longitudinal study of TFA, Donaldson (2008) reported that almost 44 percent of TFA corps members voluntarily remained in their first low-income placement schools for more than two years. Almost 15 percent stayed in those placements for more than four years, two years beyond their initial commitment. Additionally, 60 percent voluntarily remained in the teaching profession for more than two years, and 36 percent stayed in teaching for more than four years. These results could lead us to believe that some TFA corps members are actually developing long-term teaching careers from this experience. This is in opposition to long-held beliefs in the profession that participation in Teach For America is primarily for community service experience to beef up already impressive resumes. Donaldson's (2008) study also revealed that African American and Latino corps members stayed in teaching longer than their Asian or White counterparts. The fact that African American and Latino corps members tend to stay in teaching longer than their White counterparts is very important, given the nation's shortage of teachers of color and the increasing numbers of children of color in our schools (Donaldson, 2008).

Classroom management as the link to increased student achievement

Although these candidates come into high needs schools with exceptional levels of content knowledge, lacking appropriate management skills hinders their efforts to share their expertise with the students who need this most. The current climate of accountability clearly calls for teaching higher order thinking skills, integrating learning experiences across the curriculum and implementing multiple tasks (Resnick, 1987). However, rote learning and call and response methods of instruction which are used as interventions in underachieving schools, do not reflect quality instruction. Direct instruction offers high levels of student engagement, but lacks the higher order thinking experiences modern educators need to impact learning. This is particularly evident in early childhood classrooms. Direct instruction has been

shown to have no effects on oral language, print knowledge, cognition or beginning mathematics (USDE, 2007). Direct instruction as a primary method of instruction is not a viable option for achieving classroom control and good teaching. Therefore, pedagogical knowledge and classroom management are interrelated factors that need to coexist in the classroom environment for optimal learning to take place. In order to achieve the goals set forth by school reform initiatives at the federal and state level, improved classroom management proficiency must be achieved (Doyle, 1984; Torff & Sessions, 2005).

Classroom management concerns of new teachers

In a 2007 study, the researcher examined how two teacher education programs prepared candidates to manage the classroom. The results reported 74% of the pre-service teachers identified these specific matters of order and control that interfere with teaching and learning: talking, being out of their seats, bullying, fighting, off-task, "not listening." Disciplinary problems that are described most often by the participants in other new teacher studies are: refusal to follow directions, fighting, failure to accept discipline, backtalk, insubordination, verbal conflict, throwing objects, use of profanity, accumulated offenses, choking other students, throwing desks, kicking and hitting teachers or administrators, using pencils as weapons toward the teacher, biting and threatening to kill or have the teacher killed. New teachers describe violent student behaviors as the disciplinary problem they are most ill-equipped to manage. The encounters with violence were devastating for the new teachers in an elementary setting. Only more disconcerting was finding out how few management resources they had at their disposal and how little support was available to them (Garrett, 2007; Wallis, Booth, Crittle & Forster, 2003). This trend has become more prevalent in kindergarten and first grade where teachers have reported students' aggressive behaviors against classmates and teachers at higher levels each year (Wallis, et al., 2003). This emphasizes that unlike the recent past, the ability to manage violent behaviors is paramount for early childhood teachers currently employed.

Teachers who are inadequately trained to deal with students' aberrant behavior problems may actually exacerbate the misbehavior (Pettit, Bates & Dodge, 1993). For example, frequent harshness, less attention on positive behavior, and more punishment of particular students can perpetuate misbehavior in the classroom (Martin, Linfoot & Stephenson, 1999). This is particularly true when dealing with student violence. The two most commonly used strategies to address behavior problems were 'none' or to remove the child from the classroom (to another class, to another teacher, or the office) (Petit et al., 1993). These are highly ineffective strategies used as a means of survival for the new teacher.

In Shook's 2003 study of pre-service teachers, another obstacle to managing the classroom was due to a lack of control during the student teaching experience. The classroom did not belong to them and they felt the children knew the supervising teacher was the final authority. This power struggle is mirrored in the sentiments of alternative certification candidates who are employed in team teaching arrangements. In the early childhood classroom, particularly day care settings, there are co-teachers who are supposed to have equal and shared authority in the classroom. There is no rank assigned by training or experience among co-teachers. However, veteran teachers often resent the new teachers

because they are entering the profession at higher pay and with more advanced credentials. This is often played out by the co-teacher with years of experience, overriding decisions the new teacher has made toward earning the students' respect. One program completer describes this dilemma in this way: "I think it would have been a lot easier if I had been a "lead" teacher. The children clearly saw the other teacher in my room as the dictator, making it hard for me to establish any authority. . . During our institute training, we had some trainings specific to this topic, but they were focused on designing systems and procedures to plan your day, which don't work in classrooms where you share control with other teachers."" (K. Enke, personal communication, June 15, 2007).

Inadequate preparation for classroom management challenges

Many new teachers find that they are unprepared for the reality of the classroom. Discipline, difficulties with and lack of sufficient or appropriate teaching materials are among the problems experienced by beginning teachers. In addition, beginners are often given the most difficult teaching assignments which makes this an even more salient issue (Kapadia, et al., 2007). Teacher responses in previous studies define "difficult teaching assignments" as those that are grouped according to low achievement, large class size (28-32 students) and in special education enrollment as high as 23 by year's end (Garrett, 2007).

Even where courses in classroom management are a part of required coursework for certification, candidates reveal the theoretical nature of the course delivery does not meet their needs (Constantine, Player, Silva, Hallgren, Grider & Deke, 2009). According to some program completers, practical strategies that can be easily integrated into the classroom routine are not delivered through university courses. This sentiment is reflected in this statement from a second year teacher who completed the alternative certification program:

> ". . . there is a list of things I wish someone would have told me before and during my most difficult times as a first year teacher. 1) Set high standards early and stick to them . . . 2) Learn how to get and keep your kids' attention – no matter how long it takes. . . . 3) Speak to your kids with respect – no matter how rude or "grown" they act . . . 4) Always stay calm and preferably quiet (a quiet, controlled but stern tone of voice works WAY better than yelling) . . . 5) Give specific praise often – back it up by building meaningful relationships with your kids . . . 6) Position yourself as someone who your kids don't want to disappoint 7) Be fair, consistent and predictable. . . 8) Do not let yourself be pulled in by emotional outbursts from kids (anger, misery etc) . . . 9) Give kids something they want in order to motivate them to stay on track . . . 10) Establish a "line." No matter what, there needs to be a line that *does not* [emphasis added] get crossed with you. . ." (K. Nestler, personal communication, January 3, 2009).

This response suggests the use of alumni as a valuable resource for classroom management training. Their relatable experience could be used to inform candidates of the realities of high-needs classrooms and the strategies they used that were successful. Alumni are used prominently in

professional development component of Teach For America. The local university program uses alumni as seminar leaders, where classroom management instruction takes place. However, a more specific application of their experience might need to be employed.

How teacher education programs address classroom management training

Teacher education, teacher induction and teacher mentoring programs are in constant internally and externally. Evaluation is necessary to devise innovative and effective ways to address the needs of new teachers. These innovations will impact teacher retention and teacher effectiveness as it relates to student achievement. Deng (2004) takes a comprehensive look at teacher preparation by analyzing how to help new teachers apply conceptual theory. The shift in teacher education is to move away from a simple teach-theory-apply paradigm. Learning to teach is far too complex a science to rely on a skills-only pedagogy in teacher preparation, specifically in regards to classroom management. A glance at three teacher education programs demonstrates the breadth of approaches being used to meet the needs of candidates through collaboration, research-based strategies and information technology.

The local university teacher education program teaches classroom management strategies in three ways - through course- embedded instruction in classes that meet twice weekly, in monthly seminars and during field supervision by experienced teachers. Alternative certification candidates have additional support provided by their sponsoring organization, Teach For America (TFA). TFA provides a module of classroom management training during the Summer Institute, which takes place before candidates begin teaching in the Fall. During the school year, TFA alumni conduct monthly meetings that corps members are required to attend, but are allowed to choose from a variety of workshop modules, such as classroom management strategies. In addition, Program Directors, who are typically TFA alumni, observe and coach corps members in their classrooms. The focus of the observations is on pedagogy, assessment and classroom management.

Matus (1999) examined an innovative program designed to support student teachers' acquisition of classroom management skills. During the spring of 1993, a teacher educator took on the role of an Urban Practical Advisor (UPA), led a seminar and worked individually with one male and six female student teachers. The UPA served as an adjunct to the student teaching triad (student teacher, university supervisor, and cooperating teacher) while holding five seminars (group and individual) focusing on the benefits of effective classroom management. Student teachers were videotaped assuming the role of the teacher. The videos were coded for data and used as a training tool. The student teachers felt training was helpful and the strategies taught were practical.

Another practice-based program is called Conflict Resolution Education in Teacher Education, or CRETE (Honawar, 2007). The program is touted as the first national program to integrate sustained conflict-resolution training into a teacher preparation program. They believe this approach will better prepare teacher candidates for classroom-management issues they will face on the job. The program has several layers. CRETE begins with a two-day Conflict Education Institute. Throughout the year there is Individual Coaching and Integration where CRETE team members meet with candidates on a monthly basis

between October and May for a one hour session. These sessions are used to plan and help candidates integrate this information into their university courses or mentoring. In tandem with the five monthly meetings is a two to three hour focused training session on topics such as culture and conflict, approaches to classroom management using conflict education, emotion and conflict. Course embedded modules are also planned ahead across all levels of courses – 200 through 600. Ongoing evaluation is done through surveys and phone/email interviews of program completers (Jones, 2004).

In 2008, Lee & Choi's study investigated the use of a web-based case instruction tool which demonstrated the marriage of the theoretical and practical. A web-based case instruction tool was implemented for three weeks in a required undergraduate teacher education course. Juniors majoring in early childhood education were enrolled in the course. The students individually visited the case study web site and listened to a dilemma posed by a local teacher. The students were then given a written assignment where they had to identify the problem (or problems) in that situation and, if they were the teacher, how they would solve the problem(s). Throughout the semester, various dilemmas were posed and subsequent readings posted to support students through the problem solving process. The final assessment was the revision of their essays using multiple perspectives – learning theory, behavioral theory, child development and colleagues in the profession (candidates, instructors, mentor teachers). This study shows how coursework can bridge the gap of theory and practice while using current technologies and human resources to deliver engaging, thought provoking content.

Methods

The researcher will conduct a descriptive study using a mixed methods approach. Descriptive studies have been shown to yield rich data that can lead to important recommendations (Spector, Merrill, van Merrienboer & Driscoll, 2001). The use of a mixed methods approach for conducting this descriptive study will assist the researcher in elaborating or clarifying the results from qualitative data and quantitative measures by analyzing both data sources (Greene, Caracelli & Graham, 1989). Combining qualitative and quantitative methods will strengthen the findings and solidify the conclusions drawn from the data collected.

The purpose of this study is to produce data that will offer recommended changes to the teacher education program, specifically the component that prepares alternative certification candidates. The research will be conducted as a mixed methods descriptive study using online survey and one-on-one interviews. The survey and semi-structured interview protocol will be used to collect data about new teachers' perceptions of classroom management challenges and their training needs. The survey data will provide descriptions that will be used to filter the qualitative data supplied from the interviews. This analysis will illustrate a rich description of new teacher experiences that will be added to the body of teacher education research and influence the methods used for developing classroom management skills. A focused coding approach will be used to analyze the data derived from the interviews. In this process, each occurrence of the central theme and its sub-themes will be marked and labeled within the

qualitative data. After the coding analysis is completed, all themes or sub-themes will be categorized and cross-referenced to form conclusions (Warren & Karner, 2005).

Research Questions

What classroom management problems do alternative certification students face during their first year?

What forms of support do alternative certification students need in their first year?

What form of support around classroom management do alternative certification students need in the first year?

How can teacher education programs develop new teachers into effective managers of the classroom?

Participants

Participants in the study will be first year candidates in a 10 month alternative certification program. In this program, candidates are placed in a variety of early childhood settings to teach while they are enrolled in graduate level courses in the evening. Respondents will be surveyed and interviewed at the end of the 10 month certification cycle, which signifies the end of their first year of teaching. Those who choose to continue in the study will be surveyed and interviewed the following year, at the end of their second year of teaching.

Procedures and Data Collection

Studies on web and mail survey response rates tell us that for populations who regularly use the Internet, the Web is a useful means of conducting research. Pre-notice contact appears to have the strongest response rate impact (Couper, Traugott, and Lamias 2001; Dillman, 2000). The proposed participants regularly use laptop computers with internet access in and out of class. Email is the primary form of written communication used between this cohort and the university program. Age is also a factor that should positively influence the web survey response rate. One example is the study of web response rates at Michigan State University that revealed the highest response to their internet-based survey was the group of respondents 24 years old and younger (Kaplowitz, Hadlock & Levine, 2004). The median age of TFA corps members is 23 years old (Decker, Meyer & Glazerman, 2005).

Participants will be invited to take part in the study prior to the end of their first year of teaching. The invitation will be distributed at the end of March. The web survey will be made available the first week of April, and will remain accessible on the internet for a two week time period. At the end of the survey, there will be an invitation to participate in an interview that will take place June, after they have completed their first year of teaching. A second web survey will be deployed next year in April and an interview will be conducted at the end of their second year of teaching in June of next year.

Expected Results

The results of this study should provide a description of the classroom management problems alternative certification students face in the first year of teaching. The researcher also expects to glean from the interviews and surveys, the types of support alternative certification candidates need in the first year of teaching, specifically support with managing violent behaviors in the classroom.

Based on earlier studies, the researcher expects respondents to detail violent and aberrant behaviors as their most prominent classroom management problem. The perception of these problems might be even more pronounced for the alternative certification students in this study because of their limited classroom exposure before teaching. Placements in early childhood settings might pose another challenge due to multiple transitions throughout the day and the open-ended nature of the curriculum. These two factors require teachers to make many more classroom management decisions than in a self-contained elementary classroom.

Based on research and interactions in the field, the researcher predicts participants may describe classroom management support that is practical and provided by all stakeholders - the local school, the sponsoring program and the local university. Based on the results, the researcher expects to make recommendations to the teacher education program to include more in-service examples of classroom management problems, scaffolded problem-solving of classroom management issues and explicit training in proven classroom management strategies in all courses as well as in the monthly seminars.

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PLAYPUMPS INTERNATIONAL: A SIMPLE WAY TO GENERATE CLEAN WATER

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ABSTRACT

A case study analysis will be conducted on PlayPumps International founded by Trevor Field in South Africa. Mr. Field designed a water pump that can be used by children when they are playing on the playground. The pump is designed to pull water from deep within the ground where the water has not been contaminated. The pump works like a merry-go-round in which the children hop on and spin the large wheel, resulting in the water being pumped to the ground's surface. The water can then be moved through the pipes and subsequently captured in a water tower for future use. To help generate money in order to buy the equipment for the pumps, Mr. Field sells advertising on the water towers to local businesses. By 2010, PlayPumps estimates that it will have 4,000 water systems in place in 10 sub-Saharan countries which will yield clean water for up to 10 million people. The case will address: the origins of PlayPumps international; how the water system works; the benefits to the local community and other stakeholders; how individuals can help PlayPumps achieve their goals; a description of PlayPumps' partners; how PlayPumps have expanded their operations across Africa and how clean water address the UN Millennium Development Goals (MDGs). The MDGs are: 1. Eradicate extreme poverty and hunger, 2. Achieve universal primary education, 3. Promote gender equality and empower women, 4. Reduce child mortality 5. Improve maternal health, 6. Combat HIV/AIDs, malaria, and other diseases, 7. Ensure environmental sustainability and 8. Develop a global partnership for development.

STUDENT PERCEPTIONS OF FACULTY QUALITY

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ABSTRACT

Two studies of the importance and drivers of faculty quality perceptions are presented. Study 1 provides empirical evidence of the importance of faculty quality in the views of post-baccalaureate students' college experience. Factor analysis confirms the independence and covariates of quality. Follow-up analysis presents strategic implications. Study 2 provides exploratory analysis of the drivers of faculty quality using SPSS Answer Tree® (Exhaustive CHAID). Results indicate that managing cooperative student activities, incorporating diverse views and different learning styles, classroom technology, non-major faculty quality, and use of quantitative reasoning contributed to perceptions of faculty quality.

Keywords: Faculty quality perceptions, faculty quality determinants, higher education

Introduction

For well over thirty-five years, research has focused on student perceptions of faculty quality in higher education. Inquiries include the impact of concern for students (Bayer, 1975), the impact on change in higher education (Neumann 1979), department performance (Bare 1980), the quality of graduate training (Hogan 1981), undergraduate education quality (Bassis 1986), taking a consumer perspective in evaluation (Powers 1988), accountability assessment (Jennings 1989), the role of students and parents (Litten and Hall 1989), quality of student life (Benjamin 1994), the impact on faculty (Simpson and Siguaw 2000), quality improvement (O'Neill and Palmer 2004), academic performance (Sakthivel, Rajendran and Raju 2005), desired teaching qualities (Voss and Gruber 2006) and the role of demographics (Ilias, Hasan and Rahman 2008).

Despite the extensive research evidence on faculty quality as a central driver of a student's school and program selection, little is known of the underlying nature of student's perceptions of faculty quality. To explore the question of student perceptions of faculty quality, two studies were conducted. Study 1 examined the ratings of post-baccalaureate students on the features of their college experience. The purpose of this study was to establish the relative importance of faculty quality. To further explore the underlying structure of these features, factor analysis was conducted. As an example of the strategic implications of the results, an importance/performance analysis of the underlying factors was developed.

Study 2 was based on a second sample of graduating seniors to explore the principle drivers of perceived faculty quality. This exploratory analysis relied on SPSS Answer Tree® (Exhaustive CHAID) to explore the variables underlying different levels of perceived faculty quality.

STUDY 1

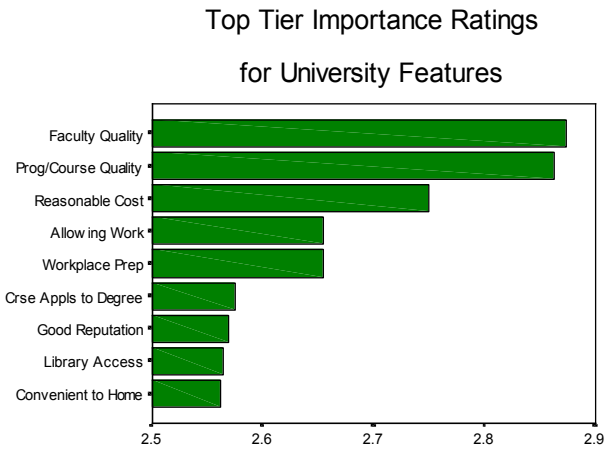
Focus groups of students from a public university were used to develop a menu of thirty features of the college experience that served as the basis for data collection in Study I. A sample (n=416) of post-baccalaureate students was used to explore understanding of students' perceptions of the importance of the features elicited by the members of the focus groups on a 3-point scale (1 = Unimportant – 3 = Very Important).

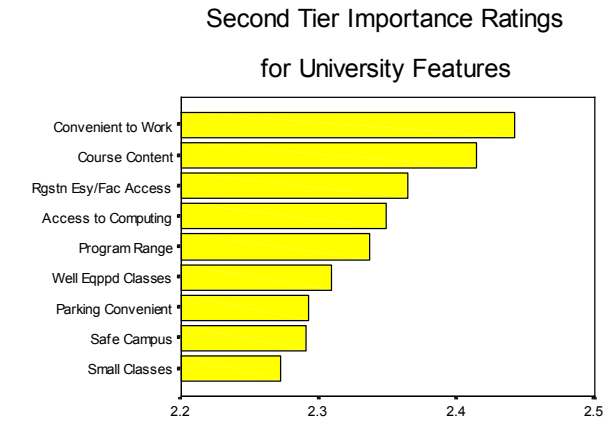
The research was conducted at a university that enrolls nearly 30,000 mainly undergraduate students. Student average age is 24, often married or living at home, with only 10 percent residential population. Approximately 80 percent of the student population work more than twenty hours a week off campus, with many holding fulltime jobs. These students typically take 9-12 hours of coursework per semester and often require 5-6 years to graduate.

Based on importance level splits that categorized the college experience features into three largely equal groups, High, Medium and Low importance features were identified. Consistent with other studies that show the importance of faculty quality, the top rated feature was revealed to be the key feature of the college experience.

As seen in Figure 1, nine features comprised the top tier of ratings: Faculty Quality, Program/Course Quality, Reasonable Cost, Allows for Work, Workplace Preparation, Progression toward Graduation,

School Reputation, Library Access and Convenient to Home.





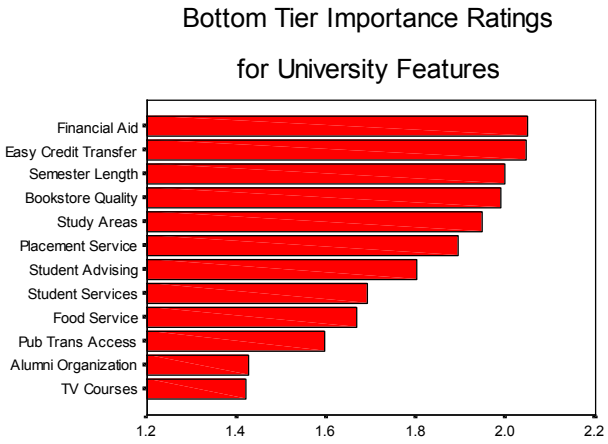


Figure 2 contains the nine features that comprised the middle tier of college experience features: Convenient to Work, Course Content, Registration Easy - Faculty Accessible, Program Range, Well-Equipped Classrooms, Convenient Parking, Safe Campus, and Small Classes.

The bottom tier of features was comprised of twelve features: Financial Aid, Easy Credit Transfer, Semester Length, Bookstore Quality, Study Areas, Placement Service, Student Advising, Student Services, Food Service, Public Transportation Access, Alumni Organization and TV Classes.

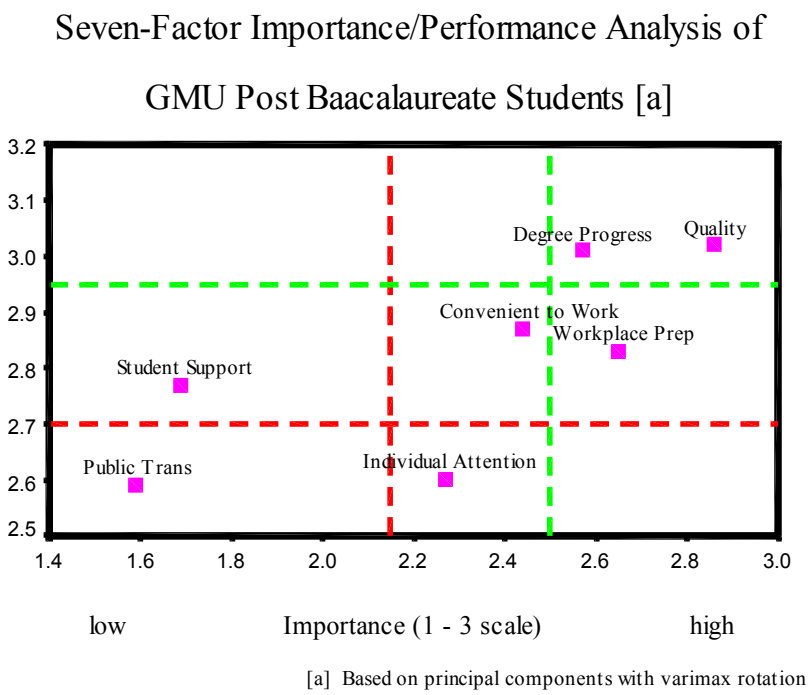
The results of Study 1 are consistent with other studies that show faculty quality is an essential feature of the college experience. Follow-up factor analysis was used for insight into the underlying structure of the importance ratings.

To confirm the underlying importance of faculty quality, factor analysis was used to determine the stability of this finding and the extent to which other features of the college experience covaried with it.

Factor Analysis of Importance Ratings

In order to explore the underlying nature of the results in the Importance/Performance Analysis above, factor analysis of the data was undertaken. Graphic portrayal of these results is presented in the figure 4, below. Principle Component Analysis with Varimax Rotation revealed seven independent global factors underlie the college experience:

1. Student Support
2. Convenient to Work
3. Quality
4. Workplace Preparation
5. Individual Attention
6. Public Transportation, and
7. Degree Progress



As expected, the role of quality remained a central, independent criterion of the college experience.

Components of Factor Analysis

Of value to enrollment managers are the components of the seven factors that collectively describe perceptions of the university experience. Each of the items that make up each factor is listed below in descending order of loading level (an indicator of importance in defining the factor in question). Twenty-five of the thirty survey items possessed unambiguous loadings on these seven factors. The remaining five items had no clear association with any of the seven factors.

Factor I: Student Support – Student Services, Student Advising, Study Areas, Food Service, Alumni Organization, Book Store Quality.

Factor II: Convenient to Work – Convenient to Work, Convenient to Home, Allowing Work.

Factor III: Quality - Program & Course Quality, Faculty Quality, Course Content.

Factor IV: Workplace Preparation - Workplace Preparation, Good Reputation, Financial Aid, Placement Service, Reasonable Cost.

Factor V: Individual Attention – Small Classes, Well Equipped Classes, Library Access, Campus Safety.

Factor VI: Public Transportation – Access to Metro, TV Courses.

Factor VII: Degree Progress – Applying Course to Degree, Easy Credit Transfer.

Of particular importance to the current study was the finding that quality was a key, independent feature of the college experience and that the concept was comprised of faculty quality, program quality, course quality and content quality.

STUDY 2

To gain insight into the underlying dimensions of faculty quality, Study 2 was launched. A sample of 590 graduating seniors in the business program of a large state university was used to explore the principle drivers of perceived faculty quality. Literature is reviewed that addresses many of the causes of student satisfaction with their university classroom experiences.

SPSS Answer Tree® (Exhaustive CHAID) was used to explore the variables underlying different levels of perceived faculty quality. This method of analysis was selected since the algorithm efficiently reveals unique effects of relationships between variables that are generally only possible with considerable effort using traditional linear modeling. This statistical method relies on recursive examination of the dataset to pool similar values from dissimilar values (Biggs, de Ville, and Suen, 1991).

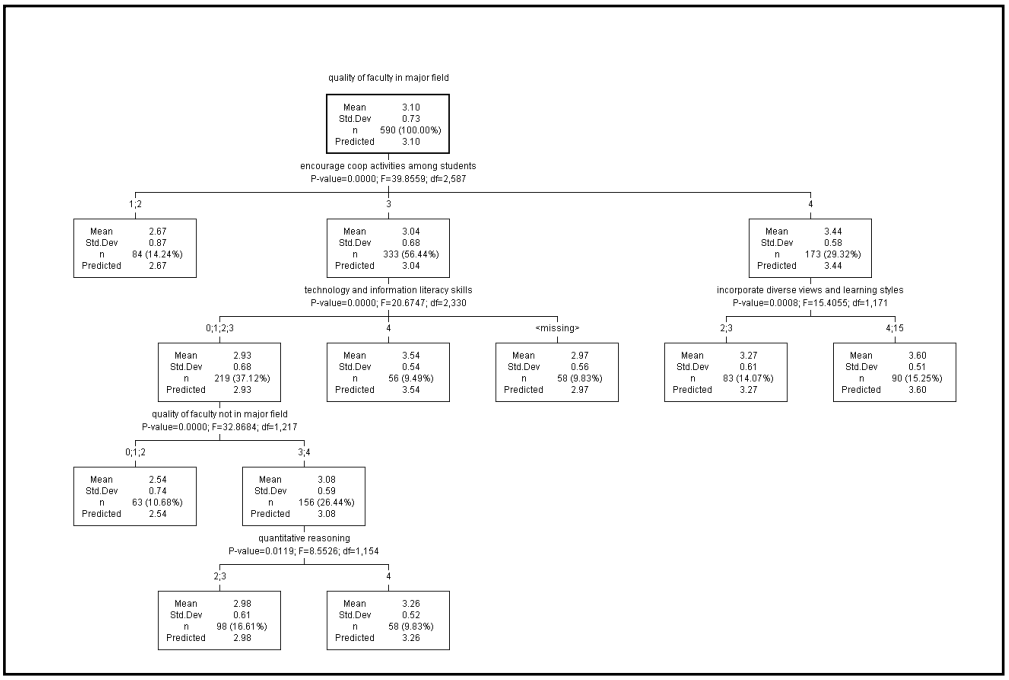


Figure 5. SPSS Answer Tree® Multiway Partitions Decision Tree of Faculty Quality

Five drivers of faculty quality were revealed by this analysis: (1) Encourage learning through cooperative activities among students, (2) Use classroom technology and information literacy skills, (3) Incorporate diverse views and learning styles into learning experiences, (4) Quality of the non-major professors, and (5) Using quantitative reasoning. Implications for faculty development are discussed from the results of this literature review and data analysis.

Follow-up analysis using more traditional linear methods was employed to more fully explore the findings of the study. Principal Component Analysis with Varimax Rotation revealed that students saw their educational experience across six primary dimensions. The highest loaded item is listed in brackets: (1) Growth in Technical General Education [Scientific Process], (2) Faculty Teaching Style [Encourage In-Class Student Faculty Interaction], (3) Student Learning Style [Break Down Information to Identify Relationships], (4) Critical Thinking and Communication [Judge the Consistency, Adequacy, and Relevance of Data, Points of View, or Arguments], (5) Growth in Softer General Education [U.S. History], and (6) Growth in Technical General Education [Use IT to Conduct Research].

These dimensions of the educational experience are used for further discussion of faculty development

Discussion

Taken together, these two studies of student perceptions of the higher education experience provide insight into the features that are salient to them and the relative importance of the role of quality.

Faculty quality was clearly confirmed to be of utmost importance to the respondents of the study and follow-up analysis in study 2 revealed the factors that underlie perceptions of this feature.

The primary driver of faculty quality was seen as the methods by which cooperative student activities were managed. Professors who encouraged cooperative activities among the students received the highest quality ratings (3.44). However, Team projects, for example can often play a significant role in semester grade outcomes and often for the individual student the experience is less than pleasant. Team conflicts, free-riding, social loafing, undemocratic decision making and a sense of unfairness are all potential features of cooperative student efforts.

The results of this study reveal that faculty members' ability to navigate these issues is expected to play a dramatic role in students' perceptions of a professor's classroom quality.

Study 2 also reveals that professors who encouraged cooperative experiences and also demonstrated the ability to incorporate diverse views and learning styles into classroom instruction resulted in the highest perceptions of quality (3.60).

This finding underscores the importance of further study of the methods by which diverse views and different learning styles are successfully incorporated into classroom processes.

The role of technology appears to play an important compensatory role in perceptions of faculty quality. Students who believed professors were only moderately committed to cooperative student activities (3 on a scale of 1 – 4) that also saw their professors as incorporating technology into the classroom (a rating of 4) increased their faculty quality perceptions from 3.04 to 3.54.

Last, students who only moderately thought professors provided a commitment to cooperative student activities (3 on a scale of 1 – 4) who also thought less technology was used (0, 1,2,3 out of 4) who also saw their non-major professors as moderately high quality (3,4) who also saw the classroom professor as demonstrating high qualitative reasoning rated the professor 3.26, nearly as high as those students who thought the professor was committed to cooperative student activities. This "branch" on the analysis points to yet another approach by which professors can establish their quality perceptions without cooperative student activities.

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A COMPARISON OF ACCOUNTING LEGISLATION: THE 150 HOUR EDUCATION REQUIREMENT LEGISLATION DATES COMPARED TO MOBILITY LEGISLATION DATES

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ABSTRACT

The following text examines the relationship between the date that each state enacted legislation requiring CPAs to have at least 150 college hours and the date that state enacted mobility legislation. A discussion of both types of legislation and the changes that they have brought about within the accounting profession is presented in the text. The effect of the legislation on accounting education is also discussed in depth. The initial findings of the study indicate that those states that led the movement toward the 150 hour requirement also led the movement toward mobility legislation. A three by three matrix is presented that illustrates the findings focusing on the leaders and laggard. The text concludes by discussing those states that have not enacted such legislation and the reasons they may be resisting change.

AN ANALYSIS OF CURRENT EDUCATIONAL REQUIREMENTS TO SIT FOR THE UNIFORM CPA EXAMINATION AND SECTIONAL PASS RATES

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ABSTRACT

Debate concerning the minimum educational requirements of CPA candidates has been taking place for decades. Currently, twenty-two of the fifty-four jurisdictions offering the Uniform CPA Examination require candidates to have at least 150 credit hours of college study in order to sit for the exam. However, by 2009, fourteen jurisdictions which passed some form of 150-hour requirement to sit for the CPA Exam had either dropped, or were considering dropping this requirement, and returning to a 120 credit hour requirement. The purpose of this paper is to analyze the sectional pass rates of CPA candidates for the years 2004 through 2007, comparing the pass rates of candidates from jurisdictions requiring 150 credit hours of college study with the pass rates of candidates from jurisdictions not requiring 150 credit hours, to determine if the number of credit hours has a material impact on sectional pass rates.

Keywords: CPA candidates

Introduction

The changes which have taken place over the past decade relative to the Uniform CPA Examination can only be described as dramatic. Both in terms of the material covered on the exam, as well as how the exam is administered, the Uniform CPA Examination has, without a doubt, evolved significantly from its "pencil and paper" predecessor. However, for all the changes in its content, as well as its form, when it comes to the minimum educational requirements needed to actually sit for the examination, there seems to be little agreement. In 2009, only twenty-two of the fifty-four jurisdictions administering the Uniform CPA Exam required 150 credit hours of college education to sit for the exam, with the remaining jurisdictions requiring only 120 credit hours - or, in some cases, even less. (It should be noted that the Commonwealth of the Northern Marianna Islands was added as the fifty-fifth jurisdiction in 2008, but is not currently accepting applications.)

The move toward 150 credit hours (or its equivalent) as the minimum educational requirement to sit for the Uniform CPA Exam seems to have stalled. And with all the debate concerning this issue, one of the questions inevitably raised is, "Do those candidates who have completed 150 credit hours of college education have a significant advantage when it comes to passing the CPA exam, as opposed to candidates with only 120 credit hours?" The purpose of this article is to analyze the sectional pass rates of CPA candidates for the calendar years 2004 through 2007, in an attempt to determine if the number of college credit hours that a CPA candidate has completed makes a material difference in passing the exam.

Historical Perspective

Accountants began debating the question of minimum educational standards almost as soon as the profession was established in the United States back in the late 19th century. Papers addressing this issue can be found dating back to the 1880's (Dresnack & Streiter, 2006). As early as 1937, the American Institute of Accountants (forerunner to the AICPA) called for the establishment of schools of accountancy, similar to our schools of law and medicine in this country today (Allen & Woodland, 2006). In the 1970's, there was renewed discussion within the profession about increasing the minimum educational requirements to sit for the Uniform CPA Exam beyond a traditional 120 credit-hour undergraduate education. This led to the current movement of requiring a minimum of 150 credit hours of college education to sit for the exam in some jurisdictions.

And while twenty-two jurisdictions currently do require 150 credit hours to sit for the exam, a number of jurisdictions have decided to reconsider the 150-hour requirement. During the past fifteen years, fourteen jurisdictions which passed some form of 150-hour requirement to sit for the exam have either dropped, or are considering dropping the requirement and returning to the 120 credit hour requirement. The reasons for moving in this direction vary, ranging from trying to reduce the financial burden placed on CPA candidates, to trying to stem the drop in the number of candidates sitting for the exam. Regardless of the reasoning, the current trend of jurisdictions all across the United States appears to be moving away from requiring 150 credit hours to sit for the exam.

Overall Pass Rates Since 2004

Since 2004, the year the Uniform CPA Examination became a computer-based test (CBT), annual pass rates for each of the individual sections of the exam have been on the rise. During the two years immediately preceding the transition to a CBT, annual sectional pass rates ranged from a low of 27.6% on the 2002 Financial Accounting and Reporting section to a high of only 35.4% on the 2003 Business Law and Professional Responsibilities section - known today as Business Environment and Concepts (National Association of the State Boards of Accountancy [NASBA],

2005). During the first fours years of computer-based testing (2004 – 2007), annual sectional pass rates never fell below 40.7 % (for the 2005 Regulation section) and were as high as 48.1% for the 2007 Financial Accounting and Reporting section (NASBA, 2008).

Along with increases in sectional pass rates, the pass rate for candidates who sit for, and pass, all four parts of the Uniform CPA Exam in a given calendar year is also on the rise. In 2005, 36.2% of all candidates who sat for all four parts of the Uniform CPA Exam passed the entire exam that year (NASBA, 2006). This percentage rose to 37.2% in 2006, and was 41.8% in 2007 (NASBA, 2007, 2008). These data provided evidence that since the transition to a computer-based test, CPA candidates are meeting with increasing success when it comes to passing the exam.

Method

Common sense tells us that candidates with more formal accounting education should, on average, perform better on the Uniform CPA Examination than candidates with less education. However, the real question many within the profession want answered is, "Do candidates who have completed 150 credit hours of college education have a *significant* advantage when it comes to passing the CPA exam?"

In an attempt to answer this question, the author has analyzed the pass rates of each section of the Uniform CPA Exam for each of the fifty-four jurisdictions for the calendar years 2004 through 2007. The fifty-four jurisdictions were divided into three categories – (1) the twenty-five jurisdictions requiring 150 credit hours of college education in order to sit for the Uniform CPA Exam during the calendar years 2004 through 2007, (2) the twenty-two jurisdictions not requiring 150 credit hours of education in order to sit for the exam during the four-year study period, and (3) the seven jurisdictions which changed their educational requirements between 2004 and 2007. (Note that the number of jurisdictions requiring 150 credit hours during the four-year study period is greater than the number currently requiring 150 credit hours.) The author then calculated a cumulative, four-year pass rate for each section of the exam for jurisdictions requiring 150 credit hours to sit for the Uniform CPA Exam, as well as jurisdictions not requiring 150 credit hours to sit for the exam. Pass rates used in this study are based on the number of examinations given in each jurisdiction, not on the number of candidates sitting for a particular section, since candidates may sit for each section up to four times per calendar year.

Results

As the exhibit below shows, there is little difference in the cumulative, four-year sectional pass rates of those jurisdictions requiring 150 credit hours to sit for the exam verses the pass rates of those jurisdictions not requiring 150 credit hours.

Exhibit #1 – Comparison of pass rates by section for the combined years 2004 – 2007

Examination Section	Number of examinations given	Number of candidates passing	Percentage pass rate
Financial Accounting and Reporting (FAR):			
Jurisdictions requiring 150 hours	54,253	25,336	46.7%
Four-year average – all jurisdictions			45.0%
Jurisdictions not requiring 150 hours	85,437	37,814	44.3%
Auditing (AUD):			
Jurisdictions requiring 150 hours	57,180	27,047	47.3%
Four-year average – all jurisdictions			44.9%
Jurisdictions not requiring 150 hours	90,398	39,157	43.3%
Regulation (REG):			
Jurisdictions requiring 150 hours	56,952	25,841	45.4%
Four-year average – all jurisdictions			43.1%
Jurisdictions not requiring 150 hours	89,557	37,680	42.1%
Business Environment and Concepts (BEC):			
Jurisdictions requiring 150 hours	59,682	28,063	47.0%
Four-year average – all jurisdictions			44.9%
Jurisdictions not requiring 150 hours	92,834	41,000	44.2%

The difference in pass rates between the two groups, as calculated over the four-year period, range from a low of 2.4% on the Financial Accounting and Reporting section to a high of 4.0% on the Auditing section. The Regulation and Business Environment and Concepts sections fall in the middle, with variances of 3.3% and 3.8% respectively.

As for the pass rates of the seven jurisdictions which *changed* their educational requirements during the four-year study period, three of their four sectional pass rates were actually lower than those of the jurisdictions not requiring 150 credit hour of study. Only the pass rate for the auditing section was higher, at 44.9%.

Additional Findings

It was also determined that, for a number of jurisdictions, all *four* sectional pass rates (FAR, AUD, REG, and BEC) during the four-year study period were above the national average. These included both jurisdictions requiring 150 credit hours, as well as jurisdictions that did not. Of the twenty-five jurisdictions requiring 150 credit hours of college study to sit for the Uniform CPA Exam between 2004 and 2007, twelve jurisdictions had all four sectional pass rates exceeding the national average. Those jurisdictions (in alphabetical order) were Florida, Kansas, Illinois, Indiana, Missouri, Nebraska, North Dakota, Oregon, Texas, Utah, Washington, and Wisconsin. Of the twenty-two jurisdictions not requiring 150 credit hours of study, seven jurisdictions (Arizona, Colorado, Georgia, Iowa, Michigan, Minnesota, and North Carolina) had all four of their cumulative sectional pass rates exceeding the national average for the four-year period.

Discussion and Conclusions

While the sectional pass rates for candidates from jurisdictions requiring 150 credit hours of college education are slightly higher than those of candidates from jurisdictions not requiring 150 credit hours for the four-year study period, the difference is not so large as to put the candidate with only 120 credit hours of college study at any significant disadvantage. What some might find more interesting is that candidates from some jurisdictions, on average, consistently perform better on the Uniform CPA Exam than candidates from other jurisdictions, regardless of what the jurisdiction's minimum educational requirements are. It appears that the number of credits hours of college study does not have as significant an impact on the CPA candidates' chances for success as was first thought.

The Uniform CPA Examination continues to be a test of a candidate's knowledge and skills at the entry-level. Until the accounting profession can come to some kind of consensus as to what academic components need to be addressed within the extra 30 credit hours of required coursework, jurisdictions will probably continue to find little difference in their sectional pass rates, regardless of the required educational requirements.

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DIFFERENTIATION IN PRACTICE: AN EXPLORATION OF FIRST YEAR TEACHER IMPLEMENTATION OF DIFFERENTIATION STRATEGIES AS EXPECTED OUTCOMES OF TEACHER PREPARATION PROGRAM

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ABSTRACT

Differentiated instruction, or designing instruction to meet the needs of a variety of learners, has received much attention in continuing and higher education for several years. Vast amounts of human and capital resources have been committed to improving learning through staff/trainer/faculty development in the area of designing instruction to meet the needs of a variety of learners. In higher education, university teacher education preparation programs have also invested much in developing educators who can differentiate instruction. However, very little research has been completed that investigates how well those trained to differentiate instruction actually implement it in their practice. The purpose of this study is to investigate how superior graduates of a teacher education program that focused on differentiation implemented differentiation in their first year of teaching. The results of the study provide insight into some of the difficulties of moving beyond training to implementation in both education and corporate settings.

Introduction

The middle school philsosophy, as outlined in *This We Believe* (National Middle School Association, 2003), emphasizes the importance of instructional strategies to meet the needs of diverse learners. In recent years, individual strategies have been referred to in our professional vocabulary as the umbrella term “differentiated instruction”. Tomlinson (2001b) further refined our understanding of teaching strategies to meet the needs of diverse learners through categorization of differentiation strategies as it relates to students.

Differentiated instruction has received much attention. The importance of differentiation is evident in the program schedules of educational conferences, published journal articles, and the syllabi of teacher preparation courses. Much has been published about the importance of differentiation and how to differentiate. Thus, those who prepare teacher educators have revised courses to focus on differentiated instruction as a key component of pedagogy.

Much has been written about the importance of differentiation (Brandt, 1998; Gurian, 2001; Levine, 2002; Tomlinson, 2003; Tomlinson & Allen, 2000; Tomlinson & Kalbfleisch, 1998;), differentiation in middle schools (Tomlinson, 1998; Tomlinson, 1995), differentiation strategies (Burke, 2002; Cole, 1995;

Gartin, Murdick, Imbeau & Perner, 2002; Houk, 2005; Kajder, 2006; King-Shaver and Hunt, 2003; McTighe & O‟Conner, 2005; Owocki, 2005), and differentiation and assessment (Brimijoin, Marquisee & Tomlinson, 2003; Krumboltz & Yeh, 1996; Moon, 2005; O „ Connor, 2002; Sternberg, 2006; Tomlinson, 2007; Tomlinson, 2001a).

However, a review of the literature indicates that we have neglected to investigate how this training in differentiated instruction transfers to actual implementation in the classrooms of new teachers. Other research provides some insight. Bangel, Enersen, Capobianco & Moon (2006) investigated how a pre-service course and practicum designed to prepare students to meet the needs of gifted students impacted the students‟ understanding of how to meet their needs. Through triangulated measures, they found that students believed they understood the needs of gifted students after completing the coursework and practicum. However, this study did not include a follow-up examination of actual implementation of the knowledge and skills these pre-service teachers felt they had gained, as new classroom teachers. Miller (2009) investigated how elementary teachers who had been trained (staff development) in gifted education and gifted identification applied their training when identifying gifted children. Comparisons of teachers with greater and fewer hours of training in gifted education showed no significant differences between the groups, suggesting that conceptual and skill training does not always lead to implementation of the desired concept or skill. Mertens, Flowers, & Mulhall (2002) investigated the practices of middle school teachers and found that those with a middle grades teacher preparation background and certification engaged more frequently in “best practices” than teachers with other training and certificates , for example secondary. This research is promising. However, it did not focus on differentiation, although differentiation was considered as part of best practices, or new teachers. With little research to guide us, professionals question whether differentiation is actually being implemented in the classroom or if it merely a “buzz word”, despite the human and financial resources dedicated to it through teacher education and staff development.

Purpose of the Study

The purpose of this study was to investigate, through observation, how first-year classroom teachers who were prepared to design differentiated instruction in their teacher education programs implement differentiated instructional strategies.

Research Questions

1. How do first year teachers who have been trained to design differentiated instruction implement differentiation in their classrooms, according to Tomlinson‟s model (2001) of differentiation of content, process, and product related to student readiness, learning profile, and interest?
2. How do first year teachers evaluate themselves in terms of implementing differentiated instruction?
3. What are the barriers, if any, that first year teachers perceive in implementing differentiated instruction in their classrooms?

4. Is there a difference in the level or types of differentiation in classes with greater student diversity?

Significance of the Study

Differentiated Instruction, as an umbrella term that refers to instructional strategies designed to meet the needs of diverse learners, has been accepted as an important pedagogical skill. Colleges of education and school districts have committed many resources to foster implementation of differentiation in the classroom. School systems value recent graduates who can discuss differentiation and strategies they will use in the classroom. It is important to understand how new teachers, trained in differentiation, actually implement differentiated instruction and the barriers they believe prevents implementation. From these understandings, teacher education programs and school districts might improve actual implementation.

Limitations of the Study

The teachers included in this study represent the knowledge, skills, and dispositions our college deem as outstanding, but they may not represent other teacher preparation programs as well. This study is an exploratory pilot study with purposeful sampling of two new teachers who were trained in differentiation and demonstrated mastery of differentiation within the teacher preparation program. In addition, their status as first year teachers likely does not reflect how well they will implement differentiation after the initial first year. While the researcher attempted to visit their classes at various times of day, some classes were visited more than others and may not reflect the totality of their differentiation during the day. Initial observations were scheduled, but one of the participants suggested we were looking for evidence of differentiation and there was some concern this teacher was purposely including these strategies during scheduled visits. To avoid bias, the participants were asked to allow unscheduled visits and they agreed. While generalizations based on this pilot study should be avoided, their experiences will provide information for additional research and insight into the barriers to implementing differentiated instruction.

Definition of Terms

1. Differentiated Instruction: Teachers proactively plan varied approaches to what students need to learn, how they will learn it, and/or how they will show what they have learned in order to increase the likelihood that each student will learn as much as he or she can, as efficiently as possible (Tomlinson, 2003).
2. Differentiation Model: A model for differentiating instruction as conceived by Tomlinson (2001b). The model focuses on differentiation of content, process, and product as related to student readiness, learner profile, and interest.
3. Collaborative Class Period/Class/Classroom: A class period designated as remedial instruction due to special education, ESL, behavioral difficulty, or failure on standardized test status of students. A teacher‟s aid is often, but not always, present in the room to assist the students in their work. The

level of collaboration between teacher and aid varies greatly and is often minimal in instructional planning.

4. Differentiation of Content: The use of a variety of materials for diverse learners; also includes a variety of means of accessing content. Examples include utilizing reading materials at varied levels and utilizing the Internet to access information.
5. Differentiation of Process: The use of a variety of processes, or what students do with content, to meet the needs of diverse learners. Examples include mini-lessons, tiered lessons, and student contracts.
6. Differentiation of Product: The use of a variety of products to assess what students have learned. Examples include products based on the multiple intelligences, the products of student/teacher developed contracts, and performances.
7. Student Readiness: The knowledge, skills, and understandings students possess or do not possess in relation to the curriculum to be addressed. Examples include students reading above grade level, students who have not mastered a skill needed at grade level.
8. Student Profile: An umbrella term for student preferences in terms of multiple intelligences, learning style, and cognitive style. Examples include students with a musical intelligence, students who prefer to work alone, and analytical thinkers.
9. Student Interest: The interests of students regardless of apparent relationship to curriculum. Examples include an interest in clothing, sports, or current events.

Background

Undergraduates in the teacher education program complete coursework during their junior and senior year designed to develop both pedagogy and content knowledge. Each semester they also participate in field experience in an area school culminating with a full-time Internship their final semester. During this time, they are required to successfully complete several pedagogy courses specifically designed to develop their understanding of the middle grade learner and their ability to design appropriate instruction. One of these courses focus on instructional design with a heavy emphasis on differentiation of instruction. Students in this course are expected to demonstrate mastery of differentiated instruction through coursework and to demonstrate these skills in their field placement assignment and final Internship. Tomlinson‟s model (2001b) of differentiation is utilized as a framework for how to differentiate instruction. The model includes the following:

1. Differentiation of content (also including how students access content)
1. Differentiation of process (what students do with information)
2. Differentiation of product (the evidence of learning)

As each relates to:

1. Student readiness (reading and language skills, skill mastery, learning disabilities, gifted)
2. Student interest
3. Student learning profile (learning styles, cognitive style, multiple intelligences)

In a follow-up course, students apply their ability to differentiate instruction more intensely through a strategies course in their chosen content areas (math/science or language arts/social studies.

Sample

A combination of purposive and convenience sampling was used. Two first year teachers in the 2008-2009 school year were invited to participate in the study because they had demonstrated mastery of their undergraduate pedagogy course work (A‟s in their course work and successful field placements/Internship) and because they had demonstrated positive dispositions through conference presentations and/or leadership in our chapter of the Collegiate Middle Level Association. Courses focusing on differentiation were in their 4th year in the 2007-2008 school year, thus providing time for instructors develop instruction, assessments, and link to field experiences well. It was expected that first year teachers in the 2008-2009 school year were consequently prepared better to differentiate in their classroom than previous graduates. It was also assumed that first-year teachers who demonstrated mastery of differentiation in their coursework were most likely to implement differentiation in their own classrooms. Convenience sampling was also utilized to select first year teachers close to the university and in the same school. Neither teacher was enrolled in graduate studies at the university, an additional measure to prevent researcher/participant bias.

Angela-Math
Angela demonstrated the knowledge, skills, and dispositions of a professional educator we desired as a faculty. She could also be described as vivacious, curious, and genuinely committed to teaching well. Angela was a founding member of the university‟s chapter of the Collegiate Middle Level Association organization and her classmates looked to her for leadership in their courses and through the organization. Many who observed her teaching in her field experiences called her a “natural teacher”. She continued to participate in the state middle school organization and presented at the annual conference during her first year teaching.

Sarah-Social Studies
Sarah also demonstrated the knowledge, skills, and dispositions of a professional educator we desired as a faculty. She, too, was passionate about teaching well and could be described as very reflective. She often questioned her work, the nature of middle level learners, and her ability to meet their needs. Her reflections weren‟t necessarily self-doubt, but instead an understanding of the complexity of the teaching-learning process. Sarah was sought out by others in her course work who wanted someone to talk with about teaching and she made friends easily with her “easy-going” attitude. Sarah demonstrated a commitment to the profession by presenting at the state middle school association conference her senior year and also during her first year teaching. She continued to participate in the state middle school organization and presented at the annual conference during her first year teaching.

Angela and Sarah were both in their early 20‟s when they began their teaching career. Both were well-liked by their administrators and their assigned principal informed the researcher that she was very pleased with how well they were teaching. Both struggled with typical first year issues related to classroom management and discipline, however Sarah appeared outwardly to feel more distress than Angela. Both Sarah and Angela were very "open" in their discussions with the researcher and welcomed the researcher‟s presence in the classroom. A positive relationship with the teachers had been established long ago, as students in the researchers‟ courses. Sarah and Angela teach in the same grade level at the same school. The school is a National Blue Riboon of Excellence school and is committed to differentiation, as evidenced by posters on administrators‟ doors reminding teachers of the various types of differentiation teachers are expected to implement. Both teachers were struggling to master the complexity of meeting the needs of diverse learners, classroom management, and time management – issues quite common for new teachers.

Procedures and Data Collection Instrument

After identifying Angela and Sarah as potential subjects, the researcher sent an email requesting they allow me to visit their classrooms for the purpose of research. The exact purpose of the research was not revealed other than a desire to observe their pedagogy. A schedule for visits was arranged and some visits were "drop-in" as well. An initial interview was conducted with each teacher to understand the nature of their classroom and their students. Once observations were complete, a post-observation semi-structed interview was conducted. The participants were assured anonymity and both teachers agreed to participate and participated fully.

A quantitative observation instrument was developed to record evidence of differentiation in Angela‟s and Sarah‟s teaching (See Appendix A). The instrument reflected the differentiation model they were taught in their teacher preparation program. Definitions for differentiation of content, process, product as it relates to student readiness, learning profile, and interest were based on the Tomlinson model (Tomlinson, 2001 a). For each instance of differentiation observed, a "tally mark" was placed in the category that best reflected the differentiation. Differentiation, according to this model, might include overlap of differentiation of content, process, and product. Thus, they were recorded sepaerately with notes to explain. During observations, we only differentiation strategies observed during the observation were recorded. However, notes were made related to other evidence of differentiation not observed. Examples of this included student work displayed in the classroom that was not witnessed, classroom assignments or information posted in the classroom for class periods other than what observed, or unsolicited comments from teachers about what their classes had been doing or were doing that day. These unobserved examples of differentiation were not included on the tool in the usual manner, but rather notated at the bottom of the observation instrument.

35 observations (1 class period = 1 observation) were conducted in Angela‟s classroom and 32 observations were conducted in Sarah‟s classroom (1 class period = 1 observation).. Observations were conducted in various class periods, however an attempt was made to observe collaborative classrooms more frequently than others because these classes would seem to benefit most from differentiation.

Findings

Both teachers differentiated instruction to some extent, but both struggled to implement the differentiation strategies that would have assisted them most in their difficult collaborative classrooms. See Appendix B.

Angela-Math

Differentiation of Content: Angela relied primarily on the textbook and worksheets. However, Angela had a bit of an advantage, in terms of differentiating content (especially how students access content) because she inherited a classroom with a "Smart Board", while Sarah‟s room did not have this technology available. Angela routinely used the "Smart Board" as a tool for how students access information. She also utilized videos and music clips provided by the publisher of her required textbook, utilizing the "smart board" to share this content. As an example, students viewed a textbook published "rap song" that addressed fractions. Angela utilized textbook publisher worksheets to differentiate content for her classes, based on the general skill level of each class, but not the skill level of individual students. She addressed the same math standard in classes during the day, but would utilize different worksheets according to skill level. Other forms of content differentiation such as literature and Internet websites were not observed.

Differentiation of Process: Angela differentiated process according to learning profile by providing opportunities every day during the "warm-up" for her students to "get up and move". Adolescents need opportunities to move about and she asked students each day to move to the whiteboard and solve problems she posed utilizing the "white board". While Angela differentiated the content based on readiness (different worksheets for collaborative classes based on same standard), there was little evidence of other forms of differentiating process. The worksheets were not representative of tiered lessons. Other forms of differentiation of process such as mini-lessons, learning/interest centers, writing about math (example – RAFT, GRASPS), anchor activities, or use of Webquests/Internet were not observed. She did not differentiate the process for individuals within her classes or the processes of learning from one class to another. The process for students in her low to high performing classes were essentially the same, but with varying levels of worksheets/problems to solve. (Researcher note – delineating the different forms of differentiation can be difficult as the categories sometimes blur. I chose to view differentiation of process as a differentiation of what students *do* with information, rather than the fact that the problems were different levels.)

Angela's students had access to 5 student computers with an Internet connection. The researcher did not observe students utilizing the computers during any of the visits. Online math games, Webquests,

the development of Power Point presentations or documents are all examples of differentiation of process that could have been utilized.

It was interesting to note that in Angela's Collaborative classes, the teacher-aid assisted students with their work by sitting next to them. However, there appeared to be very little collaboration in terms of planning the lesson to include, for example, time for the teacher to conduct mini-lessons with small groups or a combination of learning-centers and small group instruction.

Differentiation of Product: The researcher did not observe differentiation of product in Angela's math classes. This could be an affirmation of the researchers' experiences and beliefs that math teachers, more than other subject area teachers, often resist differentiation of product and rely instead on the textbook or worksheets with mathematical problems to be solved. During an observation, I did note student drawings on the wall as a product to demonstrate understanding of symmetry. Differentiation of product was evidenced by the drawings, but likely not a frequent form of differentiation as the researcher did not observe it during any of the observations.

Additional Observations: Angela struggles with a class identified as "collaborative". This is likely the class that needs differentiation of instruction the most! A special education/ESL para-professional teacher aid was assigned to assist Angela during this class. Ideally, the teacher and para-professional would work together to develop instruction and function as a team in the classroom. Interviews and observations indicate that there is little collaboration between the "Aid" and classroom teacher. The "Aid" is inconsistently present and appears to be primarily in the room to deal with discipline problems and assist individual students. (Discipline issues appear to be most important). It was not clear through observations alone if Angela desires more time to collaborate with the "Aid" to design instruction, if she is content with the Aid mainly sitting with students and offering assistance/managing behavior, or if the aid wishes to collaborate more. Angela's schedule makes meaningful collaboration impossible. Both teacher and "Aid" appear in demeanor to be a bit overwhelmed by the collaborative class.

Sarah-Social Studies

Differentiation of Content:

Sarah relied primarily on the textbook for student content. However, she also utilized videos and power point presentations to present content to students. Other forms of differentiation of content such as the use of literature, the Internet or Internet material, were not observed. Of particular concern, one of her collaborative classes included several ESOL students. The researcher observed that these students" textbooks were identical to other students' textbooks, instead of being highlighted to assist in accessing the content, an important form of differentiation of content for ESOL students. In addition, graphic organizers to aid students in accessing the content (textbook, video, or power point) were used infrequently. Other forms of art or music content that would be appropriate for a social studies classroom were not observed, but again Sarah did not have the advanced technology in her classroom that Angela did.

Differentiation of Process:

Sarah's students frequently were asked to read the text and answer textbook questions. However, she also utilized small groups, if not necessarily cooperative learning groups in design, for students to complete some tasks such as creating maps, posters, and other creative tasks. Sarah's differentiation of process most often related to learner profile and those students who were verbal or visual and very seldom included processes that would appeal to the kinesthetic learner. She included a fairly good combination of independent and small group work. Other forms of differentiation of process including tiered lessons, mini-lessons, learning/interest centers, writing such as RAFT/GRASPS, or technology based activities were not observed.

Differentiation of Product:

Closely related to differentiation of process, Sarah provided students several opportunities to demonstrate what they learned through products such as maps, posters, and drawings. The products were both independent and group produced. The products

Sarah assigned were generally interesting, but did not include student choice based on their interests. The use of contracts would enhance her teaching, as it is evident she wants students to develop quality products. While the school has computer labs available, the researcher did not observe any lessons that required students to develop technology-based products. In addition, the use of student performances would be an interesting form of differentiation to add to her classroom.

Barriers to Implementation of Differentiated Instruction

These teachers offer insight into new teachers' perceptions of the barriers they face in implementing differentiated instruction. These insights were obtained from the first interview prior to observations, through informal discussion, and through the final interview. Note that only during the final interview was the purpose of this study, differentiation, mentioned by the researcher. You will see that there comments relate well to differentiation, even when it was not the specific topic as in the earlier interview and informal discussions.

1. Lack of Time: Both teachers indicated that they were struggling to keep up with the many new demands on their time. Both indicated that they wanted to improve their instructional design and were looking forward to breaks and summer as a time to design improved lessons.
2. Behavior Management: Both teachers indicated that their collaborative classrooms were the most challenging because of student behavioral problems. They also indicated that managing poor behavior consumed their attention and drained them mentally. Neither teacher expressed a real understanding of the connection between differentiation and improved behavior.
3. Collaboration Problems: Both teachers appreciated having an aid in their collaborative classroom, but primarily as an extra disciplinarian. Both expressed a desire to collaborate with the aid to implement differentiated strategies and improve instruction. The primary obstacle, according to these teachers, was that no daily or even weekly time was provided for them to meet with the aid

and plan instruction. Also, they disliked not having the aid in their classroom on a regular schedule. They did not know when to expect the aid in their collaborative classroom. Somewhat reluctantly, these new teachers admitted feeling uncomfortable with the aid and the relationship. At times, they felt intimidated by the aids who had more years of experience in the classroom and at other times they wanted to take the lead and were frustrated with the aids‟ lack of content knowledge and pedagogical skills. On the whole, they felt the word "collaboration" meant very little because they weren't able to collaborate for the reasons above.

4. Sense of Powerlessness: While both of these teachers felt somewhat confident in their abilities, they also expressed some trepidation in asking for help from faculty members who could assist them in differentiating instruction, special education and ESOL teachers for example. One of the teachers recalled a teacher education course discussion about the services these faculty members could provide. The other teacher recalled discussion about their services during the fall faculty staff development. During our conversation, the researcher encouraged them to seek assistance without fear. They both indicated they would, but their body language suggested otherwise. It is not clear if this fear of seeking help was due to school culture, difficult or unhelpful teachers, or simply a fear of asking for help and being seen as a weak teacher. Overall, these new teachers seemed powerless to request the assistance they deserved. (Note – both teachers indicated great satisfaction with the assistance their team members provided and were not fearful of asking for their help.)
5. Organizational Skills: Both teachers indicated that when it was time to prepare lessons, they were somewhat satisfied with the resources available to them through their district and from their teacher preparation courses. However, both indicated that they never seemed to have what they needed when they needed it. Similar to the time management issue discussed above, both looked forward to breaks and summer to organize their materials to improve their ability to differentiate instruction.
6. Curriculum "Coverage" and "The Test": Both of these teachers were afraid that they would fall behind in "covering" the curriculum before "the test" in March. They were afraid that if they differentiated too often, for example differentiation of product, they wouldn‟t be able to "cover" the curriculum before the test. Both expressed a desire to differentiate, but a stronger need to master the curriculum itself first. Both expressed a desire to work with others during work hours to "map" the curriculum and develop differentiated instructional strategies.
7. Limited Classroom Space: Both teachers expressed a concern that their classrooms were too small to do some of the activities they desired. Their classrooms were in a modern building and were of average size, however they both had some class periods with many students due to growth in the district.

Discussion

Differentiation of Content

Both of these first year teachers applied some of what they had learned about differentiation of content in their teacher preparation program and in various ways. Both were primarily textbook bound, in terms of content, despite two required reading courses and a rigorous middle school literature course in which they read more than 60 middle level books related to their content areas. Both were more likely to use technology to differentiate content than literature. Fear of falling behind in "covering" the curriculum may be the most likely cause of this, as both mentioned this as a barrier to differentiation in general terms. Both teachers described their collaborative classes as the most difficult to teach and manage, especially ESOL students and students with reading difficulties. There was little evidence of implementation of differentiation strategies that would specifically address these learners such as the use of graphic organizers or highlited text, even though several of their teacher education courses focused on these strategies and others to differentiate content for struggling readers. Both expressed a desire for more time to collaborate with the collaborative classroom aid and also a reluctance to ask special education or ESOL teachers for help. A proactive approach to assisting teachers in differentiating content, rather than waiting for them to ask for assistance, and time provided during the work week for collaboration with collaborative classroom aid would likely improve differentiation of content. For example, major points in textbook readings could be highlited and graphic organizers could be developed.

Differentiation of Process

Differentiation of process strategies such as small group instruction, mini-lessons, learning/interest centers, and tiered lessons were not observed. Additionally, neither teacher used technology and the computers available in their classroom to differentiate process. There was a notable difference in differentiation of process. Sarah (Social Studies) implemented small group work somewhat frequently, however Angela (Math) did not do so. These teachers described lack of classroom space as a reason for not utilizing learning/interest centers. Teacher education professors might want to consider focusing on this "real world" issue and include learning/interest centers as compact folders requiring no additional space in the classroom. Tiered lessons, as a form of differentiation of process, was not observed. However, first year teachers simply may not have a base of understanding of the curriculum and their students to tier lessons during their first year.

Differentiation of Product

Both teachers implemented some differentiation of product. However, the researcher observed differentiation of product much more frequently in Sarah's social studies classroom compared to Angela's math classroom. During their teacher preparation courses, both teachers had been trained to differentiate product in their content areas. These observations are consistent with what I have experienced or observed as a middle school teacher and a university field experience supervisor. Math teachers infrequently utilize products for assessment. Sarah included products as part of her assessment, however she did not utilize student choice of products or contracts. Differentiation of product in Sarah's classroom was teacher centered and focused mainly on visual or verbal products.

General Comments Related to Implementation

Having passed some judgment on the implementation of differentiation from my former students, consider that the leading advocate of differentiated instruction, Carol Ann Tomlinson, advised new teachers in her interview, *Different Strokes for Little People* (Bafile, 2009) that

"It makes much more sense to begin working with responsive teaching in small ways, and building on those over time. Trying to do too much too fast is likely to overwhelm and discourage us. A step at a time, we can do pretty amazing things."

In the same interview, she also advised teachers to accept that they simply cannot differentiate for every student, formerly known as individualized instruction, but rather that they plan differentiated instruction as a way to "look at "ballparks" or "zones" in which students cluster -- so that on a particular day, depending on our students and their needs -- we might offer two or three or four routes to a goal -- not 23 or 30."

Angela (Math):

Angela successfully recognized "zones" when she differentiated content of her lessons for her math classes. She also recognized, as a middle level „kid watcher" that they appreciate moving about and music so she successfully included movement and music as a "zone" for differentiation of process. Differentiation of content, process, and product in a math classroom are certainly possible and Angela hopefully will improve in all areas, one step at a time until it is second nature. Many experienced math teachers, not just new teachers, could improve their teaching by focusing on methods to differentiate content, process, and product.

Sarah-Social Studies:

Sarah understood that middle school students enjoy interacting with each other, as a "zone" and consequently built into her instruction opportunities for students to work together. She also attempted to provide opportunities for visual learners to succeed, rather than depending on the standard essay, short answer, or other written material that verbal learners prefer. She utilized video and power point presentations to supplement the textbook. Sarah's students, many of whom are ESOL or struggling readers, would benefit from an additional differentiation step to include highlited texts and graphic organizers for content. In addition, the social studies provides many opportunities to allow students to produce a product utilizing a student contract or choice from products. Again, this is a step that experienced social studies teachers should consider, as well as Sarah.

Recommendations for University Teacher Education Faculty and School District Administrators:

This study was a pilot study with a small sample size. Generalized recommendations should be considered with thought to your unique situation. Some of the findings during this research study might assist you in determining how to better assist new teachers in implementing differentiated instruction.

1. Teacher education programs should include differentiation in all teacher education courses and require field-based evidence of implementation.
2. Teacher education programs should include “real world” examples of how to implement differentiation. Examples include how to develop a learning/interest center when there is little room in the classroom.
3. Mentor teachers for field experiences should include those teachers who can model differentiation.
4. Implementation of differentiated instruction should be viewed as a process, step-by-step, for new teachers with an expectation that some differentiation occurs in all classrooms during the first year.
5. Reduce or remove the barriers to implementation of differentiated instruction. Examples include scheduling an aid in a collaborative classroom on a regular schedule and setting aside time during the school week for teacher and aid in a collaborative classroom to meet and plan; encourage special education teachers, ESOL teachers, and media/technology teachers to proactively offer their support to new teachers, and including new teachers in curriculum teams that develop curriculum maps and instructional strategies.
6. Provide staff development opportunities, especially online staff development that is available with much less cost and without absence from the classroom and “book-talk” groups.

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Appendix A

Observation Instrument

Date of Observation _____ **Teacher Observed _____**

Total Observation time _____

General Description of Lesson:

Differentiation of Content	**Student Readiness**	**Student Interest**	**Student Learner Profile**	**Notes/Questions** (Specific notes for each tally indicated here to indicate specific strategy and to codify separate incidents of the same process ie) DC R1, DC R2 if two differentiation for readiness examples observed)
Differentiation of Process	**Student Readiness**	**Student Interest**	**Student Learner Profile**	**Notes/Questions**
Differentiation of Product	**Student Readiness**	**Student Interest**	**Student Learner Profile**	**Notes/Questions**

Appendix B
Summary of Observations – Frequency Chart
Occurrences of Differentiation Observed

Angela-Math	Differentiation of Content	Student Readiness 20	Student Interest 1	Student Learner Profile 6	Notes/Questions
Angela-Math	Differentiation of Process	Student Readiness 8	Student Interest 2	Student Learner Profile 6	Notes/Questions
Angela-Math	Differentiation of Product	Student Readiness 0	Student Interest 0	Student Learner Profile 0	Notes/Questions
Sarah-Social Studies	Differentiation of Content	Student Readiness 0	Student Interest 2	Student Learner Profile 8	Notes/Questions
Sarah-Social Studies	Differentiation of Process	Student Readiness 4	Student Interest 1	Student Learner Profile 9	Notes/Questions
Sarah-Social Studies	Differentiation of Product	Student Readiness 0	Student Interest 0	Student Learner Profile 6	Notes/Questions

QUANTITATIVE IMPACTS OF LEARNING COMMUNITIES: AN ANALYSIS OF THE IMPACT OF CHASS CONNECT ON RETENTION AND ACADEMIC PERFORMANCE TOWARDS DEGREE COMPLETION

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ABSTRACT

Learning communities are intended to provide classroom-based innovations to help student integrate into the college/university campus and engage students in the classroom, by purposefully designing a cluster of courses intended to foster small group peer learning and faculty connections. This study offers quasi-experimental analysis of outcome measures including, retention (as measured by the number of quarters in residence), units completed, likelihood of passing the entry-level writing requirement, time to major declaration, and grade point average of participants in a coordinated studies learning community program at the University of California at Riverside. The impact of the program is measured by comparing performance measures across the CHASS Connect and nonCHASS Connect student populations controlling for a large number of student characteristics, including high-school grade point average, SAT score, socioeconomic status, first generation college student, and others.

Keywords: learning communities, retention, student success

Introduction

According to enrollment and persistence rates, approximately four (4) out of ten (10) students who enroll in a four-year institution of higher education will not graduate (US Department of Education, 2001). Three (3) out of ten (10) will not persist beyond their first year or will be ineligible to enroll in their second year because of failing grades (NCHEMS, 2008). Studies have found that the largest

proportion of student attrition occurs in the first year and prior to the second year (Isher & Upcraft, 2005). This trend is particularly evident among students who come from traditionally underrepresented backgrounds, first-generation college students and students from low-income backgrounds.

The first year of college is a difficult transition even for high achieving, well prepared students. Acclimating to the intellectual culture, navigating the bureaucracy of higher education, adjusting to the freedom of managing his/her own schedule, and meeting the rigors and high academic standards of collegiate studies are merely a few of the challenges first-time freshmen encounter. Research indicates that if a freshman student can succeed through the first year, he/she has a better chance persisting through degree attainment (Isher & Upcraft, 2005).

Higher education institutions are faced with the challenge of educating students who enter college with varying levels of preparation. Astin's theory of *student involvement* states "the greater the student's involvement in college, the greater will be the amount of student learning and personal development" (1999, pp 528-9). Similarly, Tinto states that "students are more likely to persist and graduate in settings that provide academic, social and personal support" (2003, p. 3). Most first year students require some type of support, and the classroom has been noted as the most important space to integrate support programs, especially on campuses where there are a high proportion of commuter students.

Learning communities are intended to provide classroom-based innovations to help student integrate into the college/university campus and engage students in the classroom, by purposefully designing a cluster of courses intended to foster small group peer learning and faculty connections. Learning communities take many forms (Zhao & Kuh, 2004), but in general they can be classified into the following four categories: paired or clustered courses, cohorts in large courses, team-taught programs (also known as coordinated studies), and residence-based programs (Laufgraben, Shapiro, et al., 2004). Some programs are linked by theme, interest, and/or academic discipline.

The University of California at Riverside launched the first inception of a learning community program in the College of Humanities, Arts, and Social Sciences (CHASS) in 2002. Fitting with the name of the college the program is called CHASS Connect. CHASS Connect builds upon a coordinated studies learning community model, in which two or more courses are organized around a theme (Laufgraben, J.L., Shapiro, N.S., & Associates , 2004; Kuh, G.D., Kinzie, J., Schuh, J.H., Whitt, E.J., and Associates , 2005; Zhao & Kuh, 2004), however it also includes additional support by embedding extracurricular activities and a Student Success Course which is team-facilitated by two peer mentors who are alumni of the program.

Each themed course sequence consists of 75 students who are assigned one teaching assistant (TA) throughout the year, and a set of two peer mentors who help the participants with academic and socio-psychological transition to college and skill development (note taking, time management, etc.). Students in each cohort enroll in a theme-related course series for the fall, winter and spring quarters. Each course is broken down into three discussion sections of 25 students each lead by the TA. Each discussion group is also concurrently assigned to a Student Success Course. Some of the past themes

include: Reconstructing Democracy, AIDS, and Revolution Rocks. Each theme is taught in three multi-disciplinary breath courses, which count towards the university's general education requirements for graduation.

Some educators, administrators, and policy makers may question whether universities should spend money on first year experience programs. In fact, a similar question was posed to the CHASS Connect program which sparked this study. Rather, than providing qualitative stories on the impact of the program, research was carried out to analyze the quantitative impacts in regards to student success. The goals of CHASS Connect are to increase persistence, enhance academic progress towards timely graduation by helping students to declare a major more quickly and to take a full set of courses over the academic year. This evaluation looks at the impact of CHASS Connect on retention (as measured by the number of quarters in residence), units completed, likelihood of passing the entry-level writing requirement, time to major declaration, and grade point average. Pascarella and Terenzini state "[w]ith few exceptions, however, the literature is largely silent on the impact of these communities on student persistence and degree completion" (2005, p. 422). As a result, this study plays a role in helping to fill the gap of quantitative studies analyzing the impact of learning community programs.

Data Sources

Data for this analysis come from a variety of sources within the university. The student characteristic measures which are used to control for heterogeneity across treatment (CHASS Connect) and comparison or control (nonCHASS Connect) student populations were obtained from the Office of the Vice Chancellor of Student Affairs, and admissions records in particular. Other control variables- for example, whether the student ever attended the Learning Center or whether the student lived in student housing during freshman year – were gathered by the directors of specific programs or offices. Data on persistence and academic performance were gathered from official student records.

Data were gathered for the treatment and control groups of students from the 2002 and 2003 freshman classes in the College of Humanities, Arts, and Social Sciences. The two cohorts are analyzed separately. Table 1 gives the definition of variables to be used in the analysis. Table 2 gives basic descriptive statistics on the CHASS Connect and nonCHASS Connect student populations for the 2002 and 2003 cohorts. The number of observations is given in the final row of Table 2.

Table 1. Variable Definitions

Variable	Definition
Quarters Completed	Number of quarters completed.
Passed writing requirement	=1 if passed Subject A writing requirement after matriculation; 0if failed to pass Subject A writing requirement.
Units Completed	Number of academic units completed.

Quarters before major declaration	Number of quarters before latest major was declared (unless "latest major" is undeclared, in which case = 9 (2002 cohort) or 6 (2003 cohort).
Cumulative GPA	Cumulative GPA.
Second year GPA	Second year GPA.
CHASS Connect	=1 if in CHASS Connect; 0 otherwise.
Gender	=1 if female; 0 otherwise.
Low income family	=1 if family income < $30,000; 0 otherwise.
First generation	=1 if first in family to attend college; 0 otherwise.
High school GPA	High school GPA
High school quality	Index of high school quality.
SAT verbal	Score on verbal component of SAT.
SAT math	Score on math component of SAT.
Passed writing requirement before	=1 if passed the Subject A writing requirement before matriculation; 0 otherwise.
Visited Learning Center	Number of visits to the Learning Center.
Lived in dorms	=1 if lived in dormitories during freshman year; 0 otherwise.

Research Methods and Data Analysis

The study utilizes a quasi-experimental analysis of outcome measures for the treatment (students who participated in CHASS Connect) and control (students who did not participate in CHASS Connect) groups. The analysis includes a comparison of means across the two populations, and then conducts a multiple regression analysis to control for a host of student characteristics in order to render the comparison groups as similar as possible.

Table 2. Variables in the Study

	2002 Cohort		***2003 Cohort***	
Variable	**CHASS Connect** *Mean (Std. Error)*	**NonCHASS Connect** *Mean (Std. Error)*	**CHASS Connect** *Mean (Std. Error)*	**NonCHASS Connect** *Mean (Std. Error)*

Gender	0.79 (0.03)	0.62 (0.01)	0.74 (0.03)	0.60 (0.01)
Low income family	0.29 (0.04)	0.26 (0.01)	0.24 (0.03)	0.27 (0.01)
First generation	0.50 (0.04)	0.40 (0.01)	0.46 (0.04)	0.42 (0.01)
High school GPA	3.43 (0.03)	3.39 (0.01)	3.36 (0.03)	3.37 (0.01)
High school quality	5.64 (0.26)	6.32 (0.08)	6.04 (0.25)	6.61 (0.07)
SAT verbal	495.17 (6.87)	502.45 (2.09)	518.78 (7.25)	509.67 (1.91)
SAT math	512.54 (6.41)	538.38 (2.18)	509.05 (6.47)	546.24 (2.04)
Passed writing requirement before	0.58 (0.04)	0.51 (0.01)	0.48 (0.04)	0.44 (0.01)
Visited the Learning Center	3.36 (0.54)	3.07 (0.21)	3.88 (0.61)	2.20 (0.13)
Lived in dorms	…	…	0.82 (0.03)	0.74 (0.01)
Number of Observations	173	1758	189	2013
Note: The number of observations for some variables will be less due to missing observations.				

The study includes an analysis of retention, as measured by the number of completed quarters for the treatment and control group. The measure for persistence includes the number of quarters in residence. With regard to academic progress towards graduation, measures include success of critical milestones after matriculation, including the number of units completed, passing the university entry-level requirement by the end of four quarters, time to major declaration, and grade point average. Since many of the measured on academic progress, such as GPA or number of units completed, are sensitive to quarters completed, these latter outcome measures were analyzed under a variety of restrictions, one of which is that students have been in residence every quarter since matriculation. In exploring time to major declaration, it is important to focus on the student population that has not yet declared a major.

Robustness checks and specifications that test the consistency of the reported results subject these results to more sophisticated empirical techniques. Looking briefly at Table 2, it is clear that controlling for student characteristics in a comparison of outcome measures across the two populations is important. CHASS Connect students are more likely to be female, first generation college students (in 2002), and from lower quality high schools. There are likely to be unobserved differences as well.

Results

Tables 3 and 4 offer a comparison of outcome measures across the CHASS Connect and nonCHASS Connect student populations for the 2002 and 2003 cohorts, respectively. Columns one and two offer a simple comparison of means. Column three provides the difference between means and indicates whether this simple difference is statistically significantly different from zero (that is, whether the two means are statistically significantly different from one another). And finally, in column four there is the difference in means conditional on a host of controls for heterogeneity in student ability and background, and an indication of whether this difference is statistically significantly different from zero. The number of observations in the two populations is listed in the row below the results for each of the outcome measures. The impact of the control variables on outcome measures is given in Appendix A and B present the full set of multiple regression results.

Table 3. The Impact of CHASS Connect: 2002 Cohort

Variable	**CHASS Connect** *Mean (Std. Error)*	**NonCHASS Connect** *Mean (Std. Error)*	*Difference in Means (Std. Error)*	*Conditional Difference (Std. Error)*
Quarters completed	6.62 (0.07)	6.09 (0.04)	0.53** (0.13)	0.58*** (0.17)
N_{CC} / N_{NCC}	173 / 0	0 / 1758	173 / 1758	99 / 1026
Passed writing requirement [1]	0.99 (0.02)	0.88 (0.01)	0.11*** (0.04)	0.10*** (0.05)
N_{CC} / N_{NCC}	73 / 0	0 / 862	73 / 862	41 / 505
Units Completed [2]	108.41 (1.79)	106.86 (0.58)	1.56 (1.80)	3.51* (2.24)
N_{CC} / N_{NCC}	142 / 0	0 / 1268	142 / 1268	84 / 737
Quarters before major declaration [3]	4.88 (0.22)	5.18 (0.11)	-0.30 (0.25)	-0.58** (0.36)
N_{CC} / N_{NCC}	66 / 0	0 / 300	66 / 300	35 / 177
Cumulative GPA	2.86 (0.05)	2.68 (0.02)	0.18*** (0.06)	0.23*** (0.07)
N_{CC} / N_{NCC}	173 / 0	0 / 1758	173 / 1758	99 / 1026
Cumulative GPA [2]	2.93 (0.04)	2.88 (0.01)	0.05* (0.04)	0.10*** (0.05)
N_{CC} / N_{NCC}	142 / 0	0 / 1268	142 / 1268	84 / 737
Second year GPA	2.66 (0.79)	2.37 (0.03)	0.29*** (0.09)	0.35*** (0.12)
N_{CC} / N_{NCC}	173 / 0	0 / 1758	173 / 1758	99 / 1026

Second year GPA [2]	2.91 (0.05)	2.89 (0.02)	0.02 (0.05)	0.06 (0.06)
N_{CC} / N_{NCC}	142 / 0	0 / 1268	142 / 1268	84 / 737

Statistically significant at the 0.05(***), 0.10(**) and 0.20(*) levels respectively (two-tailed test). 1: analyzed sample composed of students who did not pass the entry level writing requirement prior to matriculation. 2: analyzed sample composed of students who completed all seven quarters. 3: analyzed sample composed of students who completed all seven quarters and initially were "undeclared".

Table 4. The Impact of CHASS Connect: 2003 Cohort

Variable	**CHASS Connect** *Mean (Std. Error)*	**NonCHASS Connect** *Mean (Std. Error)*	*Difference in Means (Std. Error)*	*Conditional Difference (Std. Error)*
Quarters completed	3.93 (0.02)	3.74 (0.01)	0.19*** (0.05)	0.21*** (0.06)
N_{CC} / N_{NCC}	189 / 0	0 / 2013	189 / 2013	115 / 1201
Passed writing requirement [1]	0.95 (0.02)	0.88 (0.009)	0.07*** (0.03)	0.10*** (0.04)
N_{CC} / N_{NCC}	99 / 0	0 / 1122	99 / 1122	62 / 678
Units Completed [2]	62.72 (1.08)	62.48 (0.38)	0.24 (1.23)	0.14 (1.42)
N_{CC} / N_{NCC}	177 / 0	0 / 1678	177 / 1678	109 / 999
Quarters before major declaration [3]	4.43 (0.11)	4.32 (0.05)	0.12 (0.14)	-0.16 (0.18)
N_{CC} / N_{NCC}	67 / 0	0 / 494	67 / 494	43 / 308
Cumulative GPA	2.85 (0.04)	2.62 (0.02)	0.24*** (0.06)	0.28*** (0.07)
N_{CC} / N_{NCC}	189 / 0	0 / 2013	189 / 2013	115 / 1201
Cumulative GPA [2]	2.87 (0.04)	2.81 (0.01)	0.06* (0.04)	0.12*** (0.05)
N_{CC} / N_{NCC}	177 / 0	0 / 1678	177 / 1678	109 / 999
Second year GPA	2.64 (0.07)	2.32 (0.03)	0.32*** (0.09)	0.38*** (0.12)

N_{CC} / N_{NCC}	189 / 0	0 / 2013	189 / 2013	115 / 1201
Second year GPA [2]	2.82 (0.06)	2.78 (0.02)	0.04 (0.06)	0.08 (0.07)
N_{CC} / N_{NCC}	177 / 0	0 / 1678	177 / 1678	109 / 999
Statistically significant at the 0.05(***), 0.10(**) and 0.20(*) levels respectively (two-tailed test). 1: analyzed sample composed of students who did not pass the entry level writing requirement prior to matriculation. 2: analyzed sample composed of students who completed all four quarters. 3: analyzed sample composed of students who completed all four quarters and initially were "undeclared".				

Looking, first, at the measure of retention in Table 3, CHASS Connect students complete significantly more quarters than do nonCHASS Connect students. This is true in a comparison of simple means, but also when controlling for heterogeneous features of the two student populations. Later results will shed some light on why retention is better among CHASS Connect students. For now, we can only say that, whether from a reduced probability of dismissal or a reduced probability of quitting, transferring or temporarily withdrawing, CHASS Connect participants are less likely to leave the University.

An indication that this enhanced retention is the result, at least in part, of better academic performance, and thus is related to a reduced likelihood of dismissal, comes in the results on passing the entry-level writing requirement. For students who have not passed the writing requirement prior to matriculation (the base population for this analysis), having not passed the requirement by the beginning of sophomore year is cause for dismissal. CHASS Connect students are statistically significantly more likely to pass this requirement as compared to similar students outside the program. In fact, even controlling for background characteristics, CHASS Connect participants have a ten percent greater likelihood of passing the requirement, which, looking at the mean pass rate for the comparison group, is just enough to insure that virtually all CHASS Connect students are successful at meeting the entry level writing requirement.

Do CHASS Connect students complete more units per quarter in residence? The third row of Table 3 shows the results for units completed among students who have completed all seven quarters of residence. There is only marginal evidence in support of a claim that CHASS Connect students progress more rapidly towards graduation by completing more units per quarter. In the final column of the table, controlling for a variety of individual characteristics – we see that there is a marginally greater number of units completed by CHASS Connect students, but the quantitative impact is not very large.

Another way in which students might progress more rapidly towards graduation is timely declaration of a major. Students who declare a major late in their college career, often find that they are unable to complete all of the major requirements in time to graduate in four years. Looking at the number of quarters before major declaration among "undeclared" students with seven quarters of residence (in row four of the table), we see that CHASS Connect students are slightly quicker to major declaration than their counterparts outside the program. The sample size is small in this analysis, and the results are not resounding, but they offer at least suggestive evidence of a significant impact on this outcome measure for CHASS Connect students.

The last four rows of results offer evidence on the impact of CHASS Connect on grades, including both the cumulative GPA and the GPA in the second year, after the program has had its effect on skill enhancement. Arguably, it is the latter on which we should put greater emphasis; the former may reflect unrelated factors, including perhaps superior grades in the CHASS Connect courses themselves. Both of these measures were conditional on the student having been in residence all seven quarters. In this way, we are comparing across two populations with the same dismissal rate (but, unfortunately, perhaps not the same propensity for dismissal – more on this problem in a moment).

Regardless of the measure or sample analyzed, there is evidence of higher performance among CHASS Connect students. The only exception is the result for second year GPA among students that have neither quit or been dismissed. However, it is possible that this result is biased against finding a positive CHASS Connect effect. If CHASS Connect rescues marginal students from dismissal – students who, absent the program, would have been dismissed – then comparing performance across the participant and nonparticipant populations may be an unfair comparison. In effect, the marginal students have been culled from the crop of nonparticipants, while the CHASS Connect group, precisely because the program is successful in enhancing student skills, is "saddled" with a larger contingent of otherwise marginal students in its ranks.

Turning to the results for the 2003 cohort, we see very similar findings as in the analysis of the 2002 cohort. CHASS Connect students complete more quarters, are more likely to pass the writing requirement, and have higher GPAs, regardless of the measure or sample, compared to their counterparts outside the program. The one big difference between these results and those for the 2002 cohort is with regard to major declaration; here, we find no evidence of a CHASS Connect effect on the rapidity with which students declare a major. However, because the time frame is different for this cohort – we are looking at major declaration by the fall of sophomore year (as opposed to junior year for the 2002 cohort) – the measured impact in this case and for this group may not make sense.

While our primary focus in this analysis is to understand the impact of CHASS Connect, it is instructive to pay just a bit of attention to the impact of the "control" variables on the various student performance measures. Appendix A and B report these results. There is a great deal of interesting information here, but two results stand out: (1) High school quality matters for outcome measures, but, even holding this and all other factors constant, it is the high school GPA that appears to matter most in these regressions.

(2) The population of low-income, first generation students is not as vulnerable as much anecdotal evidence would lead us to believe. Indeed, with the exception of the GPA effect in the 2003 cohort, first generation is either neutral or positive in its impact on student performance, and low-income status is, generally speaking, not much of a factor at all.

Quantitative Impact

Thus far, most of our attention has been devoted to the issue of statistical significance. However, to assess the true benefits of the CHASS Connect program, the issue of quantitative significance is equally important. Quantitative significance was measured by adding the estimated conditional impact of the program (in column four of Tables 3 and 4) to the mean outcome measure for the nonCHASS Connect population (in column two of Tables 3 and 4). The estimated quantitative impacts are shown in a comparison of levels in Appendix D and in percentage differences in Appendix E.

While the impact of the CHASS Connect program on many of the academic performance measures is statistically significantly different from zero, the quantitative magnitude of the impact is rarely greater than ten percent, and is never above fifteen percent. The largest and most robust quantitative impact is on the probability of passing the entry-level writing requirement. CHASS Connect boosts the probability of passing this requirement by roughly eleven percent in both years of the program, which insures that virtually every participating student comes to possess basic writing skills. The program's quantitative impact on retention (quarters completed) and time before major declaration is also sizeable, especially for the 2002 cohort, where the percentage differences with the nonCHASS Connect population are ten and eleven percent respectively. Focusing only on students with a continuous enrollment over the entire study period, thereby discounting the program's effects on retention, the less than five percent improvement in student grade point average among the participant population is less impressive.

Robustness Checks and other Specifications

In this section, we report on several additional analyses run on these data to check for robustness of the results reported above, and to correct for possible specification biases in the findings. First, the above results are amazingly robust to the inclusion of additional control variables. For example, including controls for ethnicity or the reported major does little to alter the substantive findings on the impact of CHASS Connect. Since controlling for both of these reduces greatly the degrees of freedom, especially in analyses with constrained sample sizes, and because doing so left the results from a more simple specification unchanged, we chose to report the simpler results in this report.

Second, not every student who entered the CHASS Connect program stayed with the program for the entire three quarters. Indeed the exit rate (the percentage of entering students who failed to complete all three quarters) was over 20% in 2002. When the analyses above are rerun on full-year program participants only, the results are largely unchanged or even stronger, as we might expect. The same

analysis was conducted on part-year participants; we were, curious about what we would find, and thinking, initially, that one might treat these results as the impact on performance of a less intensive, one- or two-quarter freshman experience program. By and large, the results for part-time participants were much less consistent with earlier findings. Further reflection suggests that treating these results as the likely impact of a one- or two-quarter freshman experience program would be a mistake, largely because those who "exit" the program are a nonrandom draw from the population of participants. We suspect, judging from the results, that leavers come from both the top and the bottom of the "ability/skill" hierarchy. But, regardless, putting much credence in these results for the likely impact of an alternative, less intensive CHASS Connect-style program would be a mistake in our view. Therefore, we chose not to report them.

Third, in controlling for student characteristics in the multiple regression framework above, we hope to "hold all else constant" in the comparison of the two groups and thereby isolate the true impact of CHASS Connect on student performance. This method of comparing groups, however, is somewhat primitive in that it falls short of truly isolating similar individuals and then comparing outcomes across groups of similar individuals. The method of "propensity score matching" is superior in this regard. It is a semi-parametric method for program evaluation that searches for truly comparable individuals across two (affected and control) populations, and then compares average outcome measures across these two groups. When we re-estimated the model using this superior matching technique, the results were very similar to those reported above, and indeed in several instances were even stronger quantitatively and statistically.

Limitations

There remains the rather thorny issue of whether, despite the study's best efforts at controlling for heterogeneity across the participant and nonparticipant populations, there remains unobserved heterogeneity – based, for example, on such difficult-to-capture features as "motivation" – that bias our results. Suppose, for example, that only truly "motivated" students enter the CHASS Connect program. Our results would then be biased because they reflect (uncaptured) student motivation rather than the effect of the CHASS Connect program.

Addressing bias due to uncaptured heterogeneity is difficult. An instrumental variables method was utilized to statistically remove bias from the CHASS Connect effect by purging from this estimate any impact of correlation between the CHASS Connect variable and the error term in the multiple regression analysis. Unfortunately, we experienced great difficulty in finding an identifying variable with which to instrument the CHASS Connect variable, finally landing on whether or not the student is a "pre-Business" major. The course load of Pre-business majors prevents them from enrolling in CHASS Connect, and so this variable was found to be a legitimate instrument, but only in an analysis of the GPA and writing requirement effects. After instrumenting, the GPA effect seems less robust and strong, whereas the writing requirement effect remained largely unchanged. Ultimately, this problem of

unobserved heterogeneity is perhaps best addressed by considering random assignment into the CHASS Connect program.

Discussion

This study offers findings on the impact of CHASS Connect on retention and academic performance towards successful degree completion. There is strong evidence of a statistically significant effect of CHASS Connect on retention, passing the entry level writing requirement, decreased to declare a major, and grade point average. The quantitative impact varies in each case, but is rarely over ten percent and is never larger than fifteen percent above the average for students outside the program. CHASS Connect does not appear to significantly enhance the number of academic units completed per quarter.

The major findings are as follows:

- Retention (as measured by the number of academic quarters completed) is statistically significantly greater for CHASS Connect students than for the comparison group by between ten (2002) and six (2003) percent.
- CHASS Connect students are statistically significantly more likely to pass the entry-level writing requirement (having not passed prior to matriculation) than the comparison group by eleven percent (2002 and 2003).
- CHASS Connect students complete only marginally more academic units over a given time period than the comparison group by between three (2002) and zero (2003) percent.
- Among students who have not declared a major prior to matriculation, CHASS Connect students declare a major sooner (in terms of quarters since matriculation) than the comparison group by between eleven (2002) and four (2003) percent. The latter is not statistically significantly different from zero.
- CHASS Connect students have significantly higher grade point averages at UCR than the comparison group.

  This is true of the cumulative grade point average for all matriculating students – by between seven (2002) and nine (2003) percent – as well as for students who have been present on campus continuously since matriculation – by between three (2002) and four (2003) percent.

  It is also true of the second year grade point average for all students – by between twelve (2002) and fourteen (2003) percent. However, among students who have been present on campus continuously since matriculation, the impact of CHASS Connect on the second year grade point average is both quantitatively small – at two (2002) and three (2003) percent – and statistically insignificant.

Do the estimated quantitative effects of the CHASS Connect program warrant the investment the University makes in it each year? Answering that question requires a comparison of the *value* of these effects (to students, the University, and society) with the cost of the program. Thus far, these finding have been used to guide institutional decision making about the program, garner additional financial

support, and invest in further analysis of the impacts of CHASS Connect. Since this study was completed the program has doubled in capacity from 225 students annually to 450 students. This study was used as baseline data when the program competed and successfully won a FIPSE (Fund for the Improvement of Postsecondary Education) grant funded through the United States Department of Education in 2008. Finally, this study was the foundational analysis that has led the university with the support of FIPSE to partner with an external evaluator to implement an experimental analysis of CHASS Connect utilizing random assignment to treatment and control groups. The pilot this experimental design was implemented in 2008-2009. The entering class of 2009 is the first cohort of students in the study and preliminary data regarding outcomes will be available in fall 2010.

In closing, while this study was intended to analyze the impacts of the learning community program on retention and academic progress towards degree completion it has had additional byproducts, such as increase program capacity and future evaluation, and speaks to the importance of institutions implementing research to understand student success on their particular campus and utilizing data to inform decision making and program improvement decisions.

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APPENDIX A

Full Regression Results: 2002 Cohort

Variable	*Quarters completed*	*Passed writing requirement* [1]	*Units completed* [2]	*Quarter of major declaration* [3]	*Cumulative GPA* [2]	*Second Year GPA* [2]
CHASS Connect	0.58*** (0.17)	0.10*** (0.05)	3.51* (2.24)	-0.58** (0.36)	0.10*** (0.05)	0.06 (0.06)
Gender	-0.02 (0.11)	0.04* (0.03)	3.47*** (1.52)	-0.48** (0.28)	0.08*** (0.03)	0.06** (0.04)
Low income family	-0.15 (0.12)	-0.09*** (0.03)	-0.98 (1.70)	-0.03 (0.34)	0.04 (0.04)	0.03 (0.04)
First generation	-0.12 (0.11)	-0.02 (0.03)	1.54 (1.55)	-0.23 (0.31)	0.06** (0.03)	0.09*** (0.04)
High school GPA	0.40*** (0.12)	0.03 (0.04)	11.24*** (1.71)	-0.47* (0.32)	0.44*** (0.04)	0.46*** (0.05)
High school quality	0.04** (0.02)	-0.004 (0.006)	0.48** (0.29)	-0.05 (0.06)	0.03*** (0.006)	0.02*** (0.008)
SAT Verbal	-0.00004 (0.0007)	0.0005*** (0.0002)	0.03*** (0.01)	-0.007*** (0.002)	0.001*** (0.0002)	0.001*** (0.0003)
SAT Math	-0.0008 (0.0007)	0.00001 (0.0002)	0.05*** (0.01)	-0.0009 (0.002)	0.0003** (0.0002)	0.0005*** (0.0002)
Passed writing requirement before	0.17** (0.11)	…	5.65*** (1.49)	-0.05 (0.29)	0.12*** (0.03)	0.09*** (0.04)
Visited Learning Center	0.01*** (0.01)	0.003*** (0.001)	0.04 (0.08)	-0.03*** (0.02)	0.001 (0.002)	0.0007 (0.002)
Constant	4.94*** (0.59)	0.58*** (0.18)	21.81*** (8.25)	11.45*** (1.73)	0.26* (0.18)	0.27 (0.22)
Adjusted R^2	0.02	0.03	0.15	0.07	0.25	0.17
N_{CC} / N_{NCC}	99 / 1026	41 / 505	84 / 737	35 / 177	84 / 737	84 / 737
Statistically significant at the 0.05(***), 0.10(**) and 0.20(*) levels respectively (two-tailed test). 1: analyzed sample composed of students who did not pass the entry level writing requirement prior to matriculation. 2: analyzed sample composed of students who completed all seven quarters. 3: analyzed sample composed of students who completed all seven quarters and initially were "undeclared".						

APPENDIX B

Full Regression Results: 2003 Cohort

Variable	*Quarters completed*	*Passed writing requirement* [1]	*Units completed* [2]	*Quarter of major declaration* [3]	*Cumulative GPA* [2]	*Second Year GPA* [2]
CHASS Connect	0.21*** (0.06)	0.10*** (0.04)	0.14 (1.42)	-0.16 (0.18)	0.12*** (0.05)	0.08 (0.07)
Gender	0.03 (0.04)	0.02 (0.03)	2.81*** (0.92)	-0.26*** (0.13)	0.05** (0.03)	0.02 (0.05)
Low income family	-0.03 (0.04)	-0.06*** (0.03)	1.13 (0.99)	0.23** (0.14)	0.01 (0.03)	0.03 (0.05)
First generation	0.08** (0.04)	-0.003 (0.03)	-0.16 (0.96)	-0.25** (0.13)	-0.05** (0.03)	-0.08** (0.05)
High school GPA	0.12*** (0.05)	0.09*** (0.03)	10.71*** (1.15)	-0.52*** (0.15)	0.49*** (0.04)	0.57*** (0.06)
High school quality	0.004 (0.01)	0.007* (0.005)	0.31** (0.18)	-0.03* (0.03)	0.02*** (0.01)	0.02*** (0.01)
SAT Verbal	-0.0002 (0.0003)	0.0006*** (0.0002)	0.04*** (0.006)	-0.001 (0.0008)	0.001*** (0.0002)	0.001*** (0.0003)
SAT Math	0.0005*** (0.0003)	0.0001 (0.0002)	0.02*** (0.006)	-0.001** (0.0008)	0.0004*** (0.0002)	0.0004 (0.0003)
Passed writing requirement before	0.07** (0.04)	…	5.59*** (0.94)	-0.05 (0.13)	0.13*** (0.03)	0.06 (0.05)
Visited Learning Center	0.006** (0.003)	-0.001 (0.002)	0.20*** (0.07)	0.001 (0.01)	0.003 (0.002)	0.0005 (0.004)
Lived in dorms	0.19*** (0.04)	0.05*** (0.03)	1.36* (1.02)	-0.04 (0.14)	0.02 (0.03)	0.13*** (0.05)
Constant	2.88*** (0.23)	0.17 (0.16)	-11.10*** (5.40)	7.84*** (0.77)	0.10 (0.17)	-0.25 (0.28)
Adjusted R^2	0.03	0.06	0.21	0.05	0.26	0.13
N_{CC} / N_{NCC}	115 / 1201	62 / 678	109 / 999	43 / 308	109 / 999	109 / 999

Statistically significant at the 0.05(***), 0.10(**) and 0.20(*) levels respectively (two-tailed test). 1: analyzed sample composed of students who did not pass the entry level writing requirement prior to matriculation. 2: analyzed sample composed of students who completed all four quarters. 3: analyzed sample composed of students who completed all four quarters and initially were "undeclared".

APPENDIX C

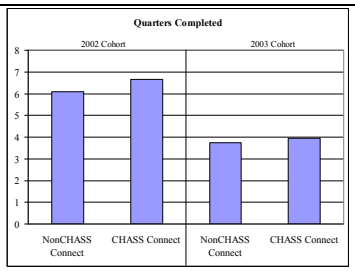
Full Regression Results (without "lived in dorms" variable): 2003 Cohort

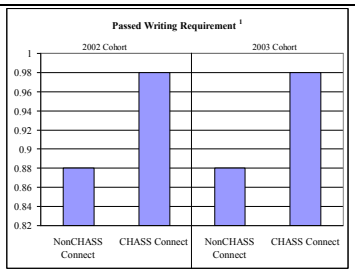
Variable	*Quarters completed*	*Passed writing requirement* [1]	*Units completed* [2]	*Quarter of major declaration* [3]	*Cumulative GPA* [2]	*Second Year GPA* [2]
CHASS Connect	0.22*** (0.06)	0.10*** (0.04)	0.23 (1.42)	-0.16 (0.18)	0.12*** (0.05)	0.09 (0.07)
Gender	0.03 (0.04)	0.02 (0.03)	2.81*** (0.92)	-0.26*** (0.13)	0.05** (0.03)	0.02 (0.05)
Low income family	-0.02 (0.04)	-0.05*** (0.03)	1.24 (0.99)	0.23** (0.14)	0.01 (0.03)	0.05 (0.05)
First generation	0.07** (0.04)	-0.01 (0.03)	-0.23 (0.96)	-0.25** (0.13)	-0.06** (0.03)	-0.09** (0.05)
High school GPA	0.10*** (0.05)	0.09*** (0.03)	10.52*** (1.14)	-0.52*** (0.15)	0.49*** (0.04)	0.55*** (0.06)
High school quality	0.01 (0.01)	0.01** (0.005)	0.34*** (0.18)	-0.03* (0.02)	0.02*** (0.006)	0.03*** (0.01)
SAT Verbal	-0.0002 (0.0003)	0.0006*** (0.0002)	0.04*** (0.01)	-0.001 (0.001)	0.001*** (0.0002)	0.001*** (0.0003)
SAT Math	0.0006*** (0.0003)	0.0001 (0.0002)	0.02*** (0.01)	-0.001** (0.001)	0.0004*** (0.0002)	0.0004* (0.0003)
Passed writing requirement before	0.06* (0.04)	…	5.54*** (0.94)	-0.05 (0.13)	0.13*** (0.03)	0.05 (0.05)
Visited Learning Center	0.006*** (0.003)	-0.001 (0.002)	0.20*** (0.07)	0.001 (0.01)	0.003 (0.002)	0.0007 (0.004)
Constant	3.05*** (0.23)	0.22* (0.16)	-9.88** (5.32)	7.80*** (0.76)	0.12 (0.17)	-0.13 (0.27)
Adjusted R^2	0.02	0.05	0.21	0.06	0.25	0.12
N_{CC} / N_{NCC}	115 / 1201	62 / 678	109 / 999	43 / 308	109 / 999	109 / 999

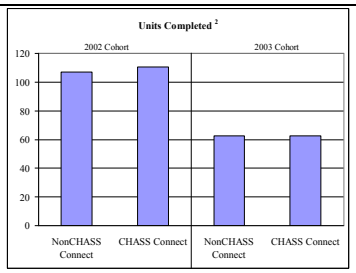
Statistically significant at the 0.05(***), 0.10(**) and 0.20(*) levels respectively (two-tailed test). 1: analyzed sample composed of students who did not pass the entry level writing requirement prior to matriculation. 2: analyzed sample composed of students who completed all four quarters. 3: analyzed sample composed of students who completed all four quarters and initially were "undeclared".

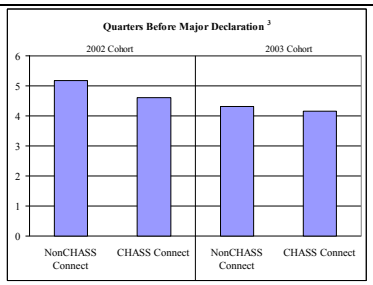
APPENDIX D

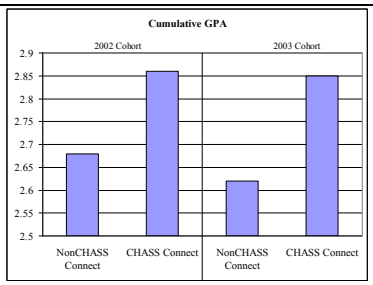
Quantitative Impact of CHASS Connect

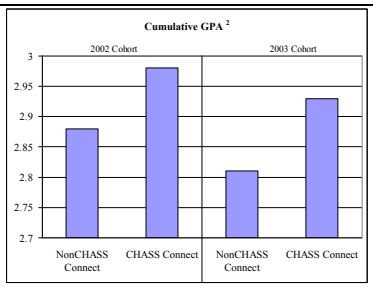


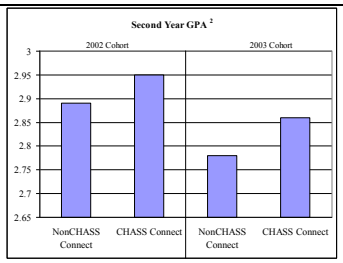


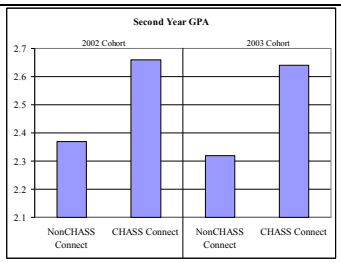






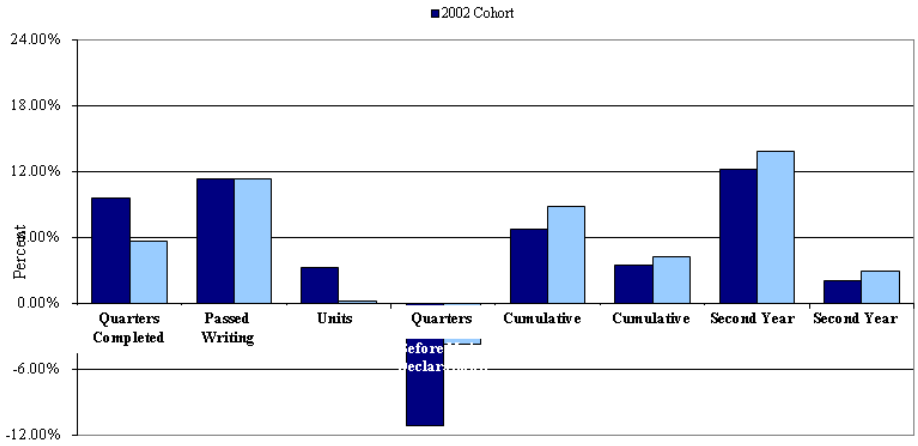






Note: Consult the last columns of Table 3 and 4 for an indication of the *statistical* significance of these differences. 1: analyzed sample composed of students who did not pass the entry level writing requirement prior to matriculation. 2: analyzed sample composed of students who completed all four quarters. 3: analyzed sample composed of students who completed all four quarters and initially were "undeclared"

APPENDIX E: Percentage Difference Due to CHASS Connect



DEVELOPING AND IMPLEMENTING A SYSTEM OF SHARED GOVERNANCE FROM A FACULTY PERSPECTIVE

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ABSTRACT

The concept of shared governance on university campuses is not new. A review of the literature revealed a number of key indicators for assessing the success of implementing shared governance on university campuses. The process of implementing a functional system of shared governance unique to an institution can be time consuming and politically challenging. Using an accreditation proviso as a springboard, faculty describes the process of developing and implementing a system of shared governance. Ultimately, attempts to integrate strategic planning, the Faculty Senate, the faculty handbook, administration, the Board of Trustees and staff were successful. As trust emerged, the process became better understood and streamlined and therefore better understood. Challenges continue which underscores the importance for a flexible and dynamic process. True shared governance is a mindset rather than a document. The document serves to outline a process within a culture and a climate of mutual interdependence and trust.

Shared governance: A review of the literature

The last decade has seen an increase in debates regarding the concept of shared governance and its implementation in higher education. Faculty and administrators have been involved in the development

and implementation of governance plans inclusive of input from its many and varied constituents, with differing degrees of success. A review of the literature documents a proliferation of articles on the subject addressing the values, benefits, and perspectives of those involved, including faculty, administrators, students, staff, and governing boards.

The concept of shared governance is not new and has been discussed for over a century. More recently, the concept of shared governance came to the forefront in the 1960's with the "Statement on Government of Colleges and Universities" issued jointly by the American Association of University Professors (AAUP), the American Council on Education, and the Association of Governing Boards of Universities and Colleges. The statement acknowledged the importance of shared governance and identified some of its principles. *The 1966 Statement* (2001) indicated that governance in higher education should result from cooperation and interdependence between and among the administration, governing board, faculty, and, to a lesser degree, other constituents. The AAUP has recognized the varied weights of the faculty, president, and governing board in the decision-making process of shared governance. Faculty have a meaningful role in decision-making areas significantly impacting the educational and scholarly aspects of the university. Faculty are viewed as sharing with the governing board the responsibility of selecting the institution's president and the hiring of other administrators. Budgeting, strategic planning, and facilities planning are described by the AAUP as a few of the functions that require significant involvement by the faculty. In addition, the AAUP suggests that faculty should be included in institutional relationships with outside entities including, for example, athletic conferences, governmental agencies, and accrediting bodies. The AAUP document also addresses committee composition. Academic committees are primarily composed of faculty members but may also have representation from other constituents. Faculty committees are further defined as committees of the academic senate or its equivalent (AAUP, 2001). The function, composition, and influence of these committees are the heart of shared governance.

Shared governance is defined by the American Federation of Teachers (AFT) as "a set of practices under which college faculty and staff participate in making significant decisions concerning the operation of their institution" (AFT, Resolutions 1 and 2, 2002). The resolution continues by noting that shared governance provides a mechanism for other academic employees with training and frontline experience in curriculum, teaching, and research, as well as all aspects of student services and support, to be primary decision makers in their areas of expertise (AFT, 2002). This concept is consistent with the AAUP's views.

In a recent article in the *Chronicle of Higher Education*, Olson (2009) described shared governance as a delicate balance between faculty and staff participation in planning, decision-making and administrative accountability. Shared governance is conceptualized as having two important and complementary components. These include giving various groups of people a share in the process of decision-making through elected representation and allowing certain groups to exercise primary responsibility for specific areas of decision-making. In this model, no single entity is arbitrarily making important

decisions absent of the advice and input of key constituents nor is decision-making a rote task based on a group vote. The input and role of all constituents is a part of the well-defined process. True shared governance attempts to balance maximum participation in decision-making with clear accountability. In this process, voice is given to concerns common to all constituencies as well as to issues unique to certain groups. "When various groups of people are kept in the loop and understand what developments are occurring within the university, and when they are invited to participate as true partners, the institution prospers. That after all is …(the) common goal" (Olson, 2009, p. 33).

The value of shared governance in academia is not universally appreciated. Administrative resistance often stems from the perceived increase in time required for this process (Simplicio, 2006). Similarly, there are those who feel that faculty time is not well spent in matters of shared governance. Rhoades and Slaughter (2004) described a capitalistic academic environment in which faculty were viewed as producers generating student credit hours and institutional productivity. In this model, any faculty focus on shared governance was wasteful and diminished measurable outcomes.

In contrast to this capitalistic academic environment, Rhoades (2005) described a more inclusive concept of shared governance in which a partnership of academic units, the community, and nonprofit organizations would exist. According to Ramo (1998) this concept is congruent with the AAUP 2001 *Policy Documents and Reports* identifying indicators of the state of shared governance at institutions of higher education. These consisted of a climate for governance, institutional communication, the role of the board, the role of the president, the role of the faculty, joint decision-making, and assessing structural arrangements for governance. These seven key items were identified as essential to the development and structure of a shared governance system and could be used to assess any university's level of commitment to the process.

Clearly, there are many and varied opinions regarding shared governance and its role cannot and should not be ignored. The development of a shared governance process is complex. The purpose of this paper is to describe a medium size state institution's experience developing a functional shared governance process.

Shared governance: The process from the beginning

The process essentially began with an accreditation proviso that shared governance should be an integral part of the life of an academy. With it came a steep learning curve for faculty, administration, staff and students. Interestingly, the process was heralded by a series of critical events that ultimately served to spark interest and spirited discussion. Once the process was undertaken in earnest, constituent endorsement was enhanced, problems identified, modifications made and a workable process was developed.

Previous attempts at shared governance had resulted in a process that was viewed by many as a token effort at best. The process was plagued by lack of a universal understanding, poor communication, lack of transparency and lack of commitment to timelines. This perception was supported by an internal review of the process after a five year period. Results of this review demonstrated several needs: the need to keep people informed and involved; the need to increase understanding of the process; the need for a transparent and available reporting system; the need for a reasonable time line followed by all involved; and the need for consultants as appropriate.

These issues and others were elucidated following an accreditation visit. The accreditation team determined that although the institution had a governance system in place that provided input to the decision-makers of the institution, there was significant confusion about the meaning of shared governance. The decision-making matrix was elusive and Board of Trustee (BOT) members indicated they were unsure of the meaning of shared governance relative to their statutory obligations and to their responsibility to the chief executive. Based on these concerns, the accrediting body recommended a focused visit to evaluate whether the governance structure had been amended to insure faculty participation in curriculum and related matters consistent with the stated provisions. These stated provisions included a clear chain of decision-making with an institutionally accepted understanding of shared governance and a faculty handbook delineating the shared governance structure.

Following the accreditation report, the university embarked on a strategic planning initiative that included a Strategic Planning Governance Task Force as a major component of that process. Additionally, governance was identified as a priority during campus wide strategic planning sessions. Specific initiatives identified during strategic planning relative to governance included the need to:

- Develop a cohesive campus community based on strong shared governance, excellent communication and mutual respect.
- Develop and implement a revised university governance policy.
- Develop and approve a revised faculty handbook.
- Enhance the effectiveness of university governance committees.
- Facilitate open communication and information sharing among all constituencies.

The Strategic Planning Governance Task Force proposed a two-tiered system of shared governance comprised of academic governance for areas of faculty primacy and institutional governance for areas of academic support with shared responsibilities under the umbrella of university governance. The proposed university governance policy provided a much-improved shared governance process and was approved by the Faculty Senate. However, when presented to the BOT, the policy was tabled for a number of reasons. The university governance document was ultimately amended as shared governance and included in a revised faculty handbook prepared by administration and adopted by the BOT.

The approved shared governance policy included principles of communication (consistent, accurate, timely and multidirectional) and accountability, proportional and diverse representation (with appropriate expertise, vested interests and primary responsibility), openness (seeks mutually acceptable recommendations – compromise and concurrence whenever possible and when not, written rationale for decisions unless legally prohibitive), timeliness (opportunity for timely review) and oversight (assessment and review). However, many faculty felt that the BOT approved version was a relaxation of the rigor of the original shared governance process. Therefore, the Faculty Senate voted not to recognize the new handbook and thus shared governance came to a standstill. Multiple subsequent attempts at reconciling the shared governance/faculty handbook impasse were unsuccessful. Eventually key administrative changes resulted in new efforts to amend the faculty handbook and an eventual workable compromise between the faculty and the BOT.

The original two-tiered shared governance process consisted of an Academic Governance Oversight Committee (AGOC) and an Institutional Governance Oversight Committee (IGOC). Theoretically, academic, faculty- based committees dealt with academic issues and institutional committees handled issues pertaining to a broader constituency. The process for either tier was initiated via a proposal to the Vice Chancellor of record. With time, flaws in the process became evident. These included the ability of administration to serve as gatekeepers for proposals, the lack of a good mechanism to track proposal progress and confusion about which oversight committee should address a proposal or a problem. In the spirit and intent of shared governance, the Chancellor formed a task force to address faculty concerns with the BOT approved faculty handbook as well as issues related to the process of shared governance on campus. The current amended shared governance policy was a result of the work of that task force and was eventually adopted by the BOT and the Faculty Senate.

Shared governance: The system today

The current shared governance process is an amalgamation of existing university committees and the evolution of a process that divides issues into either academic or institutional domains. Additionally, there is an overriding commitment to provide all constituents in the university, not only a seat at the table, but a true voice in matters of concern to them. At the core of the current shared governance system is a new committee, the Shared Governance Oversight Committee (SGOC) whose function is to set the disposition for proposals, to shepherd proposals through the system, to insure transparency, to report the outcome of proposal deliberations to the Chancellor and to provide oversight as needed. The SGOC is comprised of members representing university constituency groups. These constituency groups are the Faculty Senate, the Staff Senate, the Dean's Council, the Chair's Council, the Student Government Association, the Graduate Student Council and one administrator selected by the Chancellor serving as an ex-officio, non-voting member. Proposals are now entered into the system via the SGOC and no longer require administrative approval. Any individual, group, or committee may submit proposals into the system. The only stipulations are that proposals cannot be made anonymously and they must include a solid rationale.

Currently, there are 17 academic shared governance committees and 11 institutional shared governance committees. In the membership of these committees, care was taken to ensure that faculty held primacy in issues concerning curriculum, tenure, promotion, and retention. Other areas such as benefits and parking have a much broader concern and are, therefore, institutional shared governance committees. The success of the current process can be attributed to its simplicity, which requires that all proposals enter and exit the shared governance process through the SGOC following a prescribed timeline. This allows the SGOC the opportunity to track proposals.

As the SGOC initially considers proposals for the purpose of setting their dispositions, a series of questions is addressed. These questions include:

- Is the proposal a shared governance issue? Proposals must relate to issues of shared governance and possess a valid rational.
- What is the projected time for review? Recommendations and decisions on proposals need to be made in a manner that is timely and appropriate to the issue, while not compromising the governance process for the sake of expediency. However, when absolutely necessary, proposals can be processed in accelerated periods of time. Expedited reviews can typically be accomplished in approximately 30 days or less, and are often, simply ratifications of imposed federal and state regulations. Full reviews are for proposals that require a thorough vetting by most, if not all, of the constituency groups. Full reviews can typically be accomplished in 60 days or less. Extended reviews are processed in 90 days or less and are reserved for controversial proposals, for proposals requiring numerous revisions, or for proposals requiring a comprehensive examination and review by most constituency groups.
- Which committee is the "responsible" shared governance committee? This decision is often straightforward, however, occasionally proposals are considered that do not fit neatly into the responsibility of an existing shared governance committee. In those instances, the SGOC may appoint itself as the responsible shared governance committee or may ask an existing committee to broaden its scope and lead a related proposal. The responsible shared governance committee will review the proposal, gathering information from the various appropriate constituency groups selected to review the proposal. If there are revisions, the responsible shared governance committee incorporates the revisions and routes the proposal back to the constituency groups for one final up or down vote.
- Which constituency group(s) will review the proposal? The constituency representatives that comprise the SGOC direct this decision. Each constituency group, via their representative, is afforded the opportunity to decline or accept the review.

The current process of shared governance is dynamic. Inherent in the process is the opportunity for ongoing improvement and refinement. Evidence of this is a recent revision of the process that eliminates the need for a final up down vote in instances of un-revised unanimous support for a proposal. Another example of improvement is a recent collaboration with Information Technology Services. An electronic automated system has been developed and implemented to facilitate the routine

functions of the SGOC such as notifications, proposal postings, minutes, agendas, edits and reports. The automated system serves to streamline the process and keep constituents better informed.

Shared governance: Reflections of the challenges

The task of creating and maintaining a functional shared governance process continues to be time consuming and politically challenging. The original shared governance committee structure and process was far from perfect. Having two oversight committees (the AGOC and the IGOC) lead to unnecessary confusion. The process proved to be too complex for most constituents to understand and had so many steps that decisions could hardly be routed through the system within the confines of an entire academic year. Further, it allowed administrators to veto proposals before they were ever aired to the rest of the campus and confined much of the document flow within an administrative office. In retrospect, the process was drafted somewhat defensively from a climate of mutual disregard. This struggle validates the importance of Ramo's 1998 key indicators of the state of shared governance, particularly, a climate for governance, the roles of major constituents, and assessment of structural arrangements for governance.

While struggling to make the shared governance process work, the new administration appointed a task force to revise the BOT approved faculty handbook. As part of this process, the task force worked to salvage the best parts of shared governance by streamlining the flow of information and decision-making. Following an extensive revision, an amended system of governance was proposed. Initially, these revisions met with resistance from the staff who felt they should have had representation on the task force. In hindsight, broader representation would have been appropriate. However, the original charge to the task force centered on revising the faculty handbook. Having made this symbolic misstep in the composition of the task force proposing revisions to the process, it was understandable that other constituents questioned the validity of the process. Although included in the original Strategic Planning Governance Task Force, staff and students became sensitive to the potential for having a voice and balance within committee structure. Specifically, differences in equitable versus equal representation continue to spur spirited discussion. In spite of these differences of opinion, campus wide agreement was eventually obtained and the BOT approved the revised document and faculty handbook changes.

Faculty opinions of the current shared governance system though mixed, are generally positive. Some faculty remain skeptical of the process, choosing rather to hold fast to clear and distinct primacy in all governance matters. These faculty are disappointed that while the current system assigns some specific committee functions exclusively to faculty, the overall shared governance system gives all constituents a voice. On the other hand, many faculty focus on the clearly positive benefit of being able to submit proposals for a complete campus airing with a timeline that prevents proposals from disappearing due to administrative inertia. Another benefit of the current process is that policy transparency is multidirectional in all issues.

Another challenge to the shared governance process is that it only applies to the flagship campus within a "system" of multiple campuses. Although the campus has been affiliated with branch campuses for many years, the institution has only recently evolved to a university "system." The system administration often refers system policies to the individual campuses for input. When proposals originate from the system office it is often unclear whether the campus shared governance process timelines and routing procedures are applicable or if system expectations supercede the process.

Recognizing the political nature of shared governance, shifts in the level of interest and influence between staff, students, and faculty on various issues are to be expected. Faculty concur with Leach (2008) that one of the greatest threats to shared governance is the changing nature of academia which places extraordinary demands on faculty time in the areas of technology, teaching, scholarly activity and service. It is truly a challenge for faculty to maintain a persistent interest in shared governance issues given the demands on their time. A true culture of academic shared governance requires perseverance, diligence, accountability, and vigilance by all involved. As a result of the challenge of creating and revising the shared governance process to make it more functional, the faculty have become more aware that shared governance is not just a set of steps or a flow chart in a faculty handbook. Although the guiding principles of shared governance can be well articulated in a document, true shared governance can only be defined by a culture where the mindset of the spirit and intent of shared governance prevails.

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THE PHILOSOPHY OF MANAGEMENT SCIENCES

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ABSTRACT

We develop a new field of study called the Philosophy of Management Sciences (PMS). The PMS provides a comprehensive framework for evaluating research works, investigating new and important issues in MS and improving MS education. It also serves as an excellent model for philosophy of sciences in general.

Keywords: Philosophy, Philosophy of Sciences, Management Sciences

Introduction

Rosenberg (1995) puts it very well, "Being clear about a discipline's philosophy is essential because at the frontiers of the disciplines, it is the philosophy of science that guides inquiry". Over the past few decades, the field of Management Sciences (MS) has made tremendous progress in becoming a "science" of analyzing and supporting decision- making and management processes. However, despite quite a few success stories have been reported from time to time in the literature, there has been no systematic study looking into the "critical factors" behind these achievements. That is, "the philosophy of science that guides inquiry" in the MS field has not been diligently explored. On the other hand, many researchers in MS have not paid sufficient attention to some fundamental issues in the philosophy of science. Consequently, despite the success, there are yet at least five "unhealthy" phenomena prevailing in the field of MS: (1) the naiveté of reductionism, (2) the straitjacket of positivism, (3) the dominance of scientism, (4) insularity and fragmentation and (5) lost opportunities. Some of these phenomena are overlapping and interdependent upon each other.

In the MS literature, there is a dearth of attempts to address the above and other issues related to the philosophy of sciences. Due to the nature of the subject, researchers in business ethics are likely to encounter the need for tackling philosophical issues (e.g., Wicks, 1990). Other than that, efforts in exploring the philosophical issues have been sporadic in various areas of MS. For instance, Hunt (1983, 1991) calls his marketing theory books "the philosophy of marketing science." However, his discussions

have been focused on the methodological issues in marketing research. While methodology is an important topic in the philosophy of sciences, other issues such as ontology, epistemology, etc. also need to be addressed. More recently, Godfrey and Hill (2000) explore the problem of unobservables in strategic management research. Grandori and Kogut (2002) examine the knowledge production in organization sciences. Within various functional areas of MS, there have been discussions on research methodologies, theorizing approaches, etc. Other than these meager and sporadic efforts, there is no systematic and comprehensive investigation into the "metascientific" issues in MS. MS researchers' lack of attention, devotion, desire, and latitude of mind toward the philosophical issues is itself a philosophical issue that very much deserves investigations.

While the philosophies for the natural, social, or even human sciences have been "well" developed, there is no philosophy specifically dedicated to MS. In MS, researchers quite often have to deal with not only human factors, but also artifacts or (man-made) systems. Thus MS can be considered as a mixture of the natural, social and human sciences. However, MS is quite different from each of these three sciences. For example, researchers in MS may often have to interact with practitioners or clients who may not be just "objects" under study. For this reason, "folk philosophy" would be as important as "academic philosophy" for MS. Also, since the field of MS consists of many "disciplines" or functional areas, the necessary interfaces among these disciplines pose important philosophical issues which are unique to MS, but not so demanding or even absent in either natural, social, or human sciences alone. There is indeed a need for a metascience or philosophy specifically developed for MS. Without such a philosophy, most MS research would continue to be dominated by scientism or constrained by the straitjacket of positivism. Without such a philosophy, they would also continue to practice their oversimplified research with the naiveté of reductionism. On the other hand, with a philosophy of MS, researchers are likely to expand the frontiers of the disciplines, so as to identify new issues, to develop new strategies, and to discover new research methods. With a philosophy of MS, the critical factors for past successes in MS can also be identified. Consequently, more vibrant and successful MS research can be expected. In summary, what is needed is a philosophy specifically dedicated to MS. Such a philosophy is also a study, by means of philosophy, of the field of MS itself. In this paper, we call for MS researchers' attention to develop a new field of study called the Philosophy of Management Sciences (PMS). A PMS will provide us a big and clear picture of MS and a solid philosophical foundation for MS. It will provide a comprehensive framework for evaluating research works in MS – for both self-evaluation and peer review as well as for the review of the *review process* itself. It will also open up a brave new world for the investigation of new and important issues in MS.

The rest of the paper is organized as follows: Next section discusses some prevailing unhealthy phenomena in current MS research community; We then present a taxonomy (or a structure) of PMS issues; the section that follows then elaborates some of the key PMS issues; It demonstrates how the PMS is indeed at the frontier of the MS discipline by discussing some new directions for MS research; The final section summarizes and concludes the paper with some suggestions for future research.

Unhealthy phenomena in MS research

The reductionist mentality of many MS researchers often reflects in their naïve and oversimplified views on some fundamental concepts in philosophy and in MS problems. Their research works are accordingly naïve and oversimplified. For example, in a recent study of the so-called "rationality in strategic information technology (IT) decisions," Ranganathan and Sethi (2002) use the notion of procedural rationality – "the extent to which the decision process involves collection of information relevant to the decisions and the reliance upon the analysis of the information in making the choice" – as the basis for studying the key factors influencing rationality in IT decision processes. The study, like many prior research on this topic, largely ignores other important aspects or types of rationality. There are many ways of thinking about rationality. For example, in terms of practical rationality, there are contextual rationality and strategic rationality. In a theory of "communicative action," Habermas (1987) suggests the idea of communicative rationality. According to Follesdal (1986), there can be more than twenty senses of rationality. There are indeed many rationality concepts that are relevant and crucial to IT decisions. Using the procedural rationality as the only type of rationality in IT decisions is not only oversimplified, but also misleading.

Another example of "deficiency" in research due to naïve and oversimplified views can be found in many of the so-called "empirical research," particularly those using the questionnaire-based survey research. Many researchers conducting this type of research would justify their low response rates by quoting similar low response rates reported in the literature (or in some unpublished working papers, including their own). Without the (slight) idea of the concerns in the philosophy of sciences, these researchers justify their errors by the mentality of "everybody does the same." In a sense, they ignore the problem by comforting themselves with the self-deceiving rationale that the low response rate would not be problematic since everyone else suffers the same difficulty. Obviously, no matter how numerous previous reports there may be on low response rates, those precedents can hardly be qualified as "norms," "the consensus of the scientific community," or "exemplars" as Kuhn (1962, 1970) termed them. Furthermore, many researchers assume that the respondents' perceptions can be translated into a set of numerical scale and that such a translation still gives accurate picture of reality. They assume that the scores collected from the questionnaire can be averaged or aggregated across the respondents with a wide variety of backgrounds. In fact, they advocate that the respondents be diversified so as to have the so-called "generalized" research results. There are many more philosophical issues involved in such practices which deserve further philosophical evaluation and debates.

The second problem with many MS researchers is their being unable to shed the straitjacket of positivism. For example, many researchers who engage in the so-called "empirical research" do not have a good understanding of what empirical research really means. They simply claim that empirical means "based on experience" and that empirical research means basing research on real-world phenomena or data. They then unknowingly fall into the trap of positivism/empiricism whose central doctrines are that seeing is believing and that appearances or experiences are the only reality. Early logical positivists also claim that our knowledge of the physical world is derived entirely from sense experience, and the content of science is entirely characterized by the relationships among the data of our experience (Mach

1911). However, all logical positivists have difficulty in spelling out what is to count as an experience statement. Such difficulty often escapes the radar screen of MS researchers. The real world is, in fact, much wide open than the confines of positivism of any kind. A narrow view of the real world can easily lead to a positivist reduction to the observables while leaving out factors, phenomena and issues that are important to MS.

The third problem with many MS researchers is their research being dominated by scientism. Rosenberg (2000) defines scientism as "the unwarranted overconfidence in the established methods of science to deal with all questions, and the tendency to displace other 'ways of knowing' even in domains where conventional scientific approaches are inappropriate, unavailing or destructive of other goals, values and insights." (p. 7) The mentality of scientism can be exemplified by Lahoti's (2002) claims on the benefits of "revenue management." According to him, one of the benefits of revenue management is that it "use(s) science not guesswork; In a dynamic pricing and demand environment, *there is no room for gut-feel and subjective decision making*. Companies implementing revenue management basically employ proven principles of management science and information technology, including historical data analysis, accurate data modeling, and statistical and mathematical optimization. (p. 36, Italics added)"

Is it plausible for a decision or management scientist to forget the human element in any decision or management situation? Melvin Salveson, one of the founding fathers of management sciences, points out that the scope of management sciences should include *understanding of humans and their characteristics* (for training and placement of employees in an organization and for enhancing their acquisition of knowledge and skills, their participative senses and emotions, their sense of satisfaction and compensation from participating in the business enterprise, etc.) (Salveson, 2003). Indeed, there are human factors even in natural sciences. The belief in that "there is no room for gut-feel and subjective decision making" (in a dynamic pricing and demand environment) is really too subjective, too emotionally attached to the so-called "scientific methods," and too dangerous for a sound decision making.

Lahoti (2002) is not alone in being fascinated by the so-called "scientific method." Ross (1991) documents the "triumph" of scientism in American social science (pp. 390-470). Klein and Lyytinen (1985) points out the "poverty of scientism" in information systems research. In the field of operations management (OM), Wacker (1994) contends that many OM studies are not scientific since they do not strictly follow scientific procedure. He suggests that OM researchers should make their discipline scientific through the use of theory. In advocating for the so-called "theory-driven empirical research," Handfield and Melnyk (1998) also concur with the OM-as-science view by stating that "underlying the notion of theory-driven empirical research is the view of OM as science. One of the major traits of a science is that it is concerned only with those phenomena that can be publicly observed and tested" (p. 322). This trait, in fact, is one of the most important position held by logical positivists – the principle of verification. It is the thesis that our knowledge of the world can be justified only by the testimony of the senses – that is, by experience, observation, and experiment. Sentences that no one could verify or falsify by experience are, strictly speaking meaningless. Unfortunately, such empiricism encounters

serious problems when one has to deal with unobservable entities and processes. Handfield (2002) also calls for "methodological rigor and scientific method" in OM research. It would be rather unfortunate if one is to interpret such a call as an indiscriminate adoption of the natural science model (NSM). It is simply wrong for MS researchers to (in Rorty's (1991) words) "divinize" the so-called "scientific methods," despite that the field of MS does bear the name "sciences."

The fourth problem with many of the MS researchers is the tendency of conducting research in an insulating and fragmentary fashion. To some extent, this is a consequence of the previous three problems. Stuart et al. (2002) points out that "one of the most important recent changes in organizations is the destruction of 'functional silos' within areas such as marketing, manufacturing, finance, and administration." However, such"destruction" has not been adequately reflected in MS research. Whether engaging in empirical research or else, many MS researchers tend to reduce their problems to highly abstract and narrow domains.

The above four "problems" basically result from ignoring and being inattentive to the philosophical issues in MS. Identifying these "problems" certainly does not deny the numerous success stories in both research and practices in the field of MS. Investigation into "philosophical issues" behind the success stories would provide valuable lessons for both MS researchers and practitioners. Indeed, venturing into philosophy, particularly the philosophy of sciences, will provide MS researchers with new perspectives on their own works and thus open up brave new worlds for their endeavors. New issues may be identified. New research strategies and methodologies may be developed. For example, Chung (1999) explores the philosophy of time and challenges the prevailing ideas of time-based competition (TBC). *Traditionally*, the TBC literature invariably focuses on lead-time reduction as the essence of TBC. However, lead-time is only a measurement of time and is not time itself. The philosophy of time suggests that there are two dimensions of time: successional (earlier than/later than) and intentional (past/present/future). The effort in lead-time reduction is limited to the successional dimension of time (e.g., the measurement of time). In competition, the intentional dimension should be as important as the successional dimension of time. For effective competition, it is both advantageous and necessary for a firm to balance the two dimensions of time. Based on the philosophy of "time-is-change," Cook et al. (1999) develop a "Change-Causation-Possibility" (CCP) model for TBC. These are examples of how philosophy can help widen researchers' perspectives. With the "permeation" of philosophical thinking, MS researchers may capture many opportunities for great research ideas.

Taxonomy of PMS issues

Various constructs can be developed to categorize PMS issues. As a starting point, we group the PMS issues into five categories: (1) Ontological, (2) Epistemological, (3) Methodological, (4) Sociological and Futurological, and (5) Aesthetics. Table 1 lists some sample issues in PMS. In the next section, we will briefly discuss some "key" issues in PMS. It should be noted that most, if not all, issues or topics may contain many "sub-issues" and "structures" among sub-issues. Detailed taxonomies should thus be further developed for each of these issues. For example, the study of the "history" of MS may identify

various strands of thought developed over time. One can study the factors which are likely to be the causes of each development. One may relate these developments to the evolution or revolutions in the overall intellectual community. Also note that many issues belong to more than one category. This is also an evidence for the potential interactions among categories and therefore among issues.

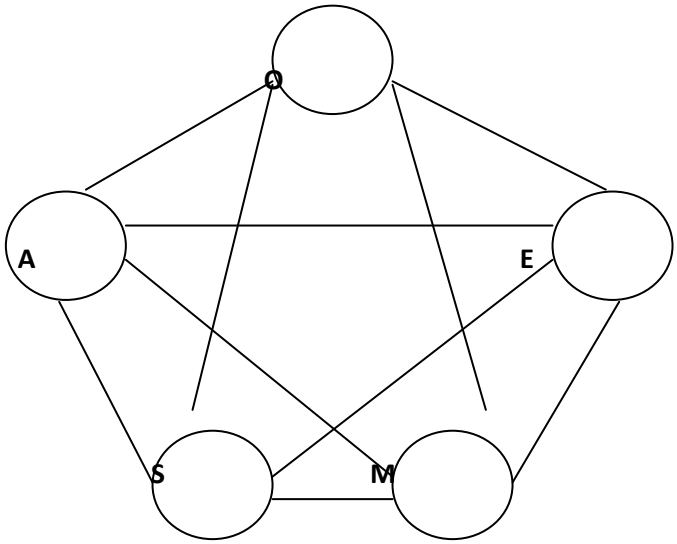
Table 1. Sample Issues in PMS

	O	M	E	S	A	
Art vs. Science		x	x	x		x
Behaviorism		x				
Causation		x				
Cognition; Cognitive Approaches to Sciences			x			
Definitions				x		
Economics				x		
Evidence				x		
Experiment			x	x		
Explanation				x		
Feminism					x	
Functionalism		x				
History (Including Modernism, Postmodernism)						x
Holism		x				
Idealism		x				
Idealization		x				
Ideology					x	
Incommensurability					x	
Induction				x		
Inference				x		
Judgment				x		
Laws of Nature		x		x		
Logical Empirism		x				
Logical Positivism		x				
Measurement					x	
Mataphor					x	
Metaphysics		x				
Models and Analogies					x	
Naturalism		x				
Observation and Theory					x	
Physicalism		x				
Progress and Prediction					x	
Theory Acceptance					x	
Probability					x	
Rationality		x				
Realism, Anti-Realism and Instrumentalism			x			
Reductionism		x				
Relativism		x				
Scientific Change					x	
Scientific Methodology				x		
Simplicity			x			
Social Factors					x	
Statistical Explanation				x	x	
Technology, Philosophy of						x
Teleological Explanation					x	

Theoretical Terms			x		
Theories; Theory Building			x		
Thought Experiments		x	x		
Underdetermination of Theory by Data			x		
Unification of Science	x		x		
Value; Moral Philosophy	x			x	

Figure 1 shows the potential interactions among these five categories. For example, while the evolution or revolutions of MS thoughts may be greatly influenced by the society or the intellectual community, the changes in thought definitely have epistemological and methodological implications. The discussion in the previous section on the unhealthy phenomena can be considered the topic of "the sociology of MS." Those phenomena also entail many ontological, epistemological and methodological issues.

Figure 1. A Basic Structure of the PMS Issues



O: Ontological
M: Methodological
E: Epistemological
S: Sociological and Futurological
A: Aesthetics

Some key issues in PMS

In this section, we briefly discuss some of the key issues in PMS. Among them, we will address the *ontological* questions of the nature of MS and the philosophical foundation for MS, the epistemological question of theorizing in MS, the *methodological* question of interdisciplinary and supradisciplinary

approaches to MS research, the *sociological* and *futurological* issues of MS, and the *aesthetics* or the "art" of decision-making and management.

The Nature of MS. MS is best considered a mixture of the natural, social and human sciences. It is generally believed that the objects of the social sciences and those of the natural sciences are distinctly different. They can be distinguished by that the causal determinants of the former always include human intentions, while those of the latter do not. Similarly, the objects of the human sciences are, among all the objects in the world, those whose existence is essentially mediated by minds while the natural sciences are about the objects whose existence is not mediated by minds (Caws, 1997). Human beings live in a world which consists of not only physical objects but also meanings. These meanings may be attached to social objects or conceptual objects – social when the elements are people and conceptual when the elements are ideas. The human sciences comprise the study of the conceptual objects while the social sciences deal with the social objects (*Ibid*.) The above distinction is useful only for the convenience of discussion. Some conceptual objects have elements that are things as well as ideas. Social objects too need to be related through ideas. Furthermore, there are social (and human) factors in the natural sciences (Brown, 2000). For example, the setting of research goals and the ethical standards for research procedures in the natural sciences inevitably involves various social and human factors. MS would be the "perfect" example of the inevitability of intertwining the above factors and therefore the "perfect" model of the mixture of the three sciences. Such a mixture further indicates that the distinction between "intentional objects" and "natural objects" can be edged away.

The Real-World Foundation. The debate over the analytical and empirical research in MS is not new. There are also arguments over the interpretation of the so-called empirical research itself (e.g., Meredith, 1999). These discourses can be translated into the difference in the philosophical views of the real world foundation (of MS research). With the research topics being "decision" and "management," MS research inevitably deals with "real-world" phenomena. Obviously, different ontological views toward the real world will significantly affect the ways MS research is conducted. We need to ask: How do the real-world phenomena or experience serve as the foundation for MS research? Is there a "solid" real-world foundation of (MS) knowledge? Should one settle for the foundation which is, as Popper (1959) called it, "firm enough to carry the structure, at least for the time being"? Should one simply take the anti-foundationalist stand advocated by philosophers (of science) such as Thomas Kuhn or other "relativists? (Kuhn dismissed all attempts to put knowledge on permanent foundation). What are the implications of these different stands for MS research?

Theorizing. There have been researchers in various fields of MS suggesting the need for generating (generalizable) theories for individual disciplines (e.g., Swamidas and Newell 1987, Anderson et al. 1989, Flynn et al. 1990, Swink and Way 1995, Schmenner and Swink 1998, Meredith 1999, Hanfield 2002). The models or procedures for generating theories proposed by most of these researchers follow a typical Natural Science Model (NSM) or what Meredith (1998) calls the rationalist approach. For example, the theorizing procedure suggested by Schmenner and Swink (1988) is in fact a manifestation of the deductive-monological model (the D-N model) or the covering law of (scientific) explanation pioneered

by Carl Hempel during the logical positivist stage of his career. (Hempel was later inclined to a more sociological approach to scientific research). The covering-law model of explanation can be extended to account for how science explains laws, and how it can be developed into analysis of scientific theories. Laws are explained by derivation from other, more general laws. A scientific theory is just a set of very general laws, which jointly enable us to derive a large number of empirical phenomena. Unfortunately, as Rosenberg (1995) points out, social sciences have not uncovered laws or even empirical generalization that could be improved in the direction of real laws about human behavior and its consequences. White (1998) also observes that theorists in social science no longer use only a law like model with its assumption of strategic rationality, but also an interpretative model with its assumption of contextual rationality. Indeed, it is commonly known that the basic viewpoint of logical empiricism has been generally rejected. Moreover, neither formal systems of inductive logic nor the covering law model of explanation proved adequate to the realities of scientific practice. On the other hand, most theorizing models proposed in the MS literature for generating theories echo representationalism in their efforts in securing a good description of reality. With the desire and intent to ground research in the real-world phenomena and data, MS researchers should be aware of schools of thoughts such as anti-realism, anit-representationalism, pragmatism, etc. These thoughts provide some refreshing, interesting and often-time important (counter-)points for MS researchers to reflect upon their own research activities. For example, Thomas Kuhn believes that science should not be thought of as moving towards an accurate representation of the way the world is in itself. John Dewey suggests that we should give up the idea that knowledge is an attempt to represent reality. Rather, we should view inquiry as a way of *using* reality. Indeed, not all MS phenomena are generalizable or "theorizable." Often times, "theory" only exists and is only intelligible when it is set against and among particular backgrounds or practices. Some practices or phenomena in MS can be analyzed, but are simply not suitable objects for a theory. That is, meaningful generalizations are not always possible. This observation entails other issues in the philosophy of sciences and also in PMS. For example, can MS research become routinized and methodical, routinized but not methodical, non-routinized and non-methodical, or else?

Interdisciplinary vs. Supradisciplinary Research. As mentioned earlier, one of the problems with the existing MS research is insularity and fragmentation. The concern here is more than destructing the "functional silos." While most MS researchers are familiar with the notion of "interdisciplinary research," they should also look into the alternative of the so-called multidisciplinary or supradisciplinary approach. The interdisciplinary approach simply means nothing more than to leave the disciplines as they are while developing certain techniques which foster a kind of acquaintance between them without forcing them to give up their self-sufficiency or individual claims. This approach, in a sense, just brings together individuals from separate disciplines to chat or assigns different specialists different topics for research and inquiry (Kellner, 1989). With the interdisciplinary approach, researchers may be interested in the interfaces between functional areas such as production, marketing, finance, etc. With the supradisciplinary approach, on the other hand, researchers would traverse and undermine

boundaries between various disciplines and stress the interconnections between functional areas as well as those between MS, economics, politics, philosophy, psychology, culture and society, etc.

Sociological and Futurological Issues. Since MS research inevitably deals with "real-world" phenomena, researchers often need to interact with practitioners, regardless their research be called empirical or otherwise. We need to ask: How does the process of such interactions affect the results of MS research? Are there unique social factors in MS research? Is there really a necessary distinction between research and practices in MS? On the other hand, the concern about the futurological issues is another unique characteristic of MS. Forecasting, technological forecasting, scenario planning, long-range planning, etc. are important topics in MS. Decision makers, executives or managers are often concerned with the trends, "megatrends," etc. in the (business) environment. We need to ask: Can MS researchers incorporate these concerns into their "scientific" research programs? What impacts will notions such as postmodernity, post-Fordism, new times, globalism, political and social trends, hyper-competition, hyper-reality, etc. have on MS and PMS?

The Art of Management. Starting with Frederich W. Taylor's scientific management early last century and going through the Operations Research/Management Science movement since the end of World War II, research in organizational management and decision-making has been dominated by the aforementioned NSM. Rationality is the "foundation" of the NSM. It is debatable whether science or rationality can explain all aspects of reality. Paradoxically, in the quest for objective knowledge of reality, human has become more and more detached from reality itself. Most scientists share the Socratic penchant, what Nietzsche defined as "the unshakable faith that thought, using the thread of logic, can penetrate the deepest abysses of being." Unfortunately, science truncates reality into a system of simpler, reduced units, omitting the "irrelevant" details of life. The fracturing of life also leads to the fracturing of man, dissociating his rational self from his intuitive self. Reality is certainly not what can be described by the NSM in algorithms and formulas alone. The inner depth of life and the richness of the human experience cannot really be quantified and measured by scientific means. The development of philosophy over the past hundred years has also shown "a progressive orientation toward the immediate and qualitative, the existent and the actual" (Barrett, 1958). This development is a response to the limitation of rationalism (positivism and analytic philosophy in particular). Many modern thinkers recognize the need of finding ways to look into human experiences. "Philosophers can no longer attempt, as empiricists Locke and Hume attempted, to construct human experience out of simple ideas and elementary sensations." (*Ibid.*) While science condenses reality into reduced, unerring truths, art reveals truths about reality in its complexity. The artist, whether through the medium of oil on canvas, of music notes toppling off a staff, or of the interweaving of words through a poem, attempts to externalize the darker, inner realm of humanity. A work of art can capture the contradictory, ambivalent, and irrational elements of the world. Art aspires to bring back together the totality of human. The artist hopes to startle the spectator into consciousness of a "true" reality – existence as it really is, with all its contradictions and enigmas that cannot be explained by science. On the other hand, Whitehead (1978) suggests that intellectual experience is primordially aesthetic and only secondarily

regulated by the principles of accuracy and logics. It is really not a new idea to suggest that management is an art (e.g., Pascale 1978, Pascale and Athos 1981). However, the dominance of positivism and scientism has discouraged researchers to make a greater effort to explore management as an art. There is indeed a need to explore the aesthetics or the art of decision and management. Issues that should be investigated include (but not limit to): In what ways will the art of decision and management complement the MS? What can we learn from artists? What are the artists' perspectives of the "real world"? What are the managerial implications for these perspectives? How can "beauty" and "utility", art and science, art and technology, etc. be synthesized?

New directions for MS research

Earlier, it is said that PMS may open up a brave new world for MS. PMS can help researchers identify new and important issues in the field of MS. PMS can also facilitate the development of new strategies and methodologies for MS research. Since "new" issues, strategies, and methodologies are open-ended *by definition*, here we limit the discussion to only a few important topics. Although the "body of knowledge" of PMS itself provides MS researchers a framework to reflect, review or even correct their own research practices, more specific "medicines" should be sought for each of the listed problems. In this section, we briefly address the following three closely related topics:

(1) the plausibility of some specific philosophies (pragmatism in particular) for the field of MS;
(2) the possibility of a non-representational theory of knowledge for MS; and
(3) the plausibility of an "edification" philosophy for MS (research, education and practices).

The representationalist epistemology is key to the rationalist paradigm or the NSM.

Scientific knowledge is defined as representations. To know reality is to have a correct representation of things – a correct picture of the outer reality as it came to be conceived or perceived by the "mind's eyes." Such an epistemology is also called a "sense data" theory of knowledge which argues that we construct these mental images from abstract universal properties reported to the mind by the senses. On this model, we don't experience things directly. Rather, we infer their presence when images are paraded before our mind's eye. Over the decades, such a spectator theory of knowledge has been attacked from different quarters. For example, Rorty (1979) suggests that a pragmatist conception of knowledge would focus on what humans *do* in coping with the world rather than on what they *find* through theorizing. He further suggest that "pragmatists – both classical and 'neo' – do not believe that there is a way things really are. So they want to replace the appearance-reality distinction by that between descriptions of the world and of ourselves which are less useful and those which are more useful." (Rorty 1979, p. 27). Thus, instead of uncovering the "truth," what is more important is to gain the kind of understanding which is necessary to deal with problems as they arise. It would be interesting to explore such a pragmatist approach to the "theory of knowledge" and to both MS and PMS for that matter. What are the pragmatist ways of doing MS? Would the interpretivism suggested by Meredith (1998) – which emphasizes the goal of understanding -- be in accord with pragmatism? Would there be

new and better strategies and "methods" in conducting MS research? Would pragmatism offer better hope to bridge the gap between MS researchers and practitioners?

In an effort to develop a nonrepresentational theory of knowledge, Frisina (2002) suggests a unity of action and knowledge, based on the thoughts of both John Dewey and Alfred North Whitehead. Both philosophers agree that we should understand all things primarily as moments within a dynamic process. Consequently, the notion of unity of action and knowledge would think of knowledge as a form of action rather than as a possession or purely mental condition. Such a new theory of knowledge would be appropriate for MS. After all, decision makers, business executives and managers often face a changing environment. Management is itself a dynamic process of coping with constant (and often rapid) changes. With knowledge as a form of action, knowing becomes having less to do with an inner representation of the outer reality and more to do with refinements in the way we behave or do business. We should go beyond the current literature on the modeling of business or decision processes – typical representationalism at work -- and explore the nature, relationship and potential unification of action and knowledge in decision and management processes. Investigations along this line are also likely to pose great challenge to the existing information systems research, particularly in the area of the so-called "knowledge management."

Rorty (1979) contends that, from the educational as opposed to the epistemological or the technological, point of view, the way things are said is more important than the possession of truths. He further suggests the use of "edification" to stand for the project of finding new, better, more interesting, more fruitful ways of speaking. The aim of edification is at continuing a conversation – conversation with oneself and with others – rather than at discovering truth. The purpose of continuing conversation is to enhance understanding – understanding oneself, environments, and the relationship between them. Chung (2004) suggests that the edification philosophy can be a new way of conducting case and field studies in business management. We should further explore the potential of the edifying approach to MS research. It would also be fruitful to investigate the relationship between the edification philosophy and pragmatism, as well as the process philosophy such as the unity of action and knowledge, in the context of MS.

Conclusions

While the philosophies for the natural, social, or even human sciences have been "well" developed, there is no philosophy specifically dedicated to Management Sciences (MS). The latter is uniquely different from each of the three sciences and, at the same time, is a "mixture" of the three. We have proposed a new field of study (or a new "discipline") called the Philosophy of Management Sciences (PMS). We suggest that MS be considered as a "mixture" of the natural, social and human sciences. It presents taxonomy of PMS issues and discusses several key issues in PMS (e.g., ontological, epistemological, methodological, sociological and futurological, etc.). It also discusses some new strategies for MS research. (For example, pragmatism for PMS, a non-representational theory of knowledge for PMS, and an "edification" philosophy for MS research, education and practices).

The PMS provides a solid philosophical foundation for MS. It will provide a comprehensive framework for evaluating research works in MS. It also opens up a brave new world for the investigation of new and important issues in MS. By defining MS as a mixture of the natural, social and human sciences, the PMS program calls for MS researchers' often forgotten attention to the importance of human factors. It also encourages the field of MS to go beyond the natural science model and to consider not only the science, but also the art of decision-making and management. In other words, at the frontiers of MS, it is the PMS that will guide inquiry. The PMS program also provides schemata for reviewing and improving MS education. It will suggest new philosophy, attitude and directions for MS education. With attentions equally paid to natural, social and human sciences, MS students will become more open-minded, truly well-rounded and eventually become better researchers and practitioners in MS. The PMS program also contributes to the "traditional" philosophy of science in an important way. With MS defined as a mixture of the natural, social, and human sciences, the PMS program implicitly encourages those researchers in traditional philosophy of science to widen their perspectives and to change their investigation strategies by examining all three types of sciences together. PMS will serve as an excellent model for philosophy of sciences in general.

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WILL ACCOUNTING FOR RETURN RIGHTS CHANGE UNDER THE NEW REVENUE MODEL?

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ABSTRACT

In September of 2002, the Financial Accounting Standards Board and the International Accounting Standards Board jointly adopted the Revenue Recognition Project. The Boards did this in order to address existing revenue recognition problems in U.S. Generally Accepted Accounting Principles and International Financial Reporting Standards. For a variety of reasons, the Boards chose to abandon the traditional earnings process model of revenue recognition. Instead, the Boards have proposed a new revenue recognition model where revenues will be recognized based on changes in assets and liabilities. This paper reports on how accounting for the sale of goods with a right of return could be impacted by the adoption of the new revenue recognition model. The two primary accounting alternatives being considered by the Boards are presented, explained and illustrated. The paper concludes by summarizing the comments the Boards received from respondents to their Discussion Paper and outlines the accounting treatment the Boards are likely to recommend in their forthcoming exposure draft.

Introduction

It appears likely that Generally Accepted Accounting Principles (GAAP) for revenue recognition will be changing in the near future. Long considered a source on inconsistency in the recognition of revenue for economically similar transactions, the current revenue recognition principles have been put under scrutiny by both the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) In September of 2002, the Boards jointly adopted the Revenue Recognition project. The Boards hoped to develop a single revenue recognition model that can be applied consistently across various industries

For a variety of reasons, the Boards chose to abandon the traditional earnings process model. Under this model, revenue is typically recognized when it is realized or realizable and the earnings process is substantially complete. Instead, the Boards, through the release of their Discussion Paper, *Preliminary Views on Revenue Recognition in Contracts with Customers* ("DP") in December of 2008, have proposed the use of an asset-liability model. According to the proposed model, a company would recognize revenue when it satisfies a contractually agreed upon performance obligation by transferring goods and services to a customer. This transfer would either increase the entity's contract assets (receivable) or reduce its contract liability (deferred revenue). Any unperformed rights and performance obligations of

a contract should be reported, at the end of the period, on a net basis as either a contract asset or a contract liability.

In response to the Discussion Paper, the Boards received a total of 211 comment letters during the six-month comment period, which ended on June 19, 2009. The vast majority of the respondents expressed support for the Boards' objective to develop a single revenue model for U. S. GAAP and International Financial Reporting Standards (IFRSs). Among those expressing support was the Accounting Standards Executive Committee (AcSEC) of the American Institute of Certified Public Accountants (AICPA), who endorsed the proposal to base a single revenue recognition principle on changes in an entity's contract asset or contract liability. AcSEC also expressed its belief that an asset-liability model was consistent with the existing U.S. GAAP and IFRS frameworks' balance sheet approach.

While there was general agreement among the respondents that the single revenue principle goal was laudable, there were also many comments that questioned the feasibility of the objective. The general tone of the comments, in this regard, was that existing industry-specific standards were created under current GAAP to clarify how to recognize revenue for particular industries and, although those standards might create inconsistency, they provide useful information about the different types of contracts for which they were intended. As reported in the Boards' *Comment Letter Summary* (CLS), issued in July of 2009, one respondent noted"…the goal of consistency should be secondary to the goal of providing decision-useful financial reporting" (CLS 3). The industries most frequently cited as potentially needing special consideration under the proposed model were financial services, real estate, software, long-term construction, telecommunications and insurance. In fact, the Boards, in the Discussion Paper, had expressed concern about the applicability of the proposed model to financial instruments, insurance contracts and leasing contracts.

On the other hand, the Discussion Paper states that "…for many contracts with customers, the proposed model would not change the way the entity recognizes revenue." (DP 6.3) In particular, it would not change how revenue is recognized for typical retail transactions in which the entity and the customer fulfill their respective promises at the point of sale. The Boards go on to say that there are other transactions for which the proposed model might significantly alter current practice. One type of transaction the Boards felt would likely be affected was the sale of products with post delivery services, such as warranties or goods sold with a right of return, that are considered incidental to the contract. The next section examines how accounting for post delivery services under the proposed model would differ from current practice.

Performance Obligations

When an entity enters into a contract with a customer, the entity must provide goods or services in exchange for payment from the customer. In the Discussion Paper, the Boards refer to these contractual commitments as performance obligations. While the concept of a performance obligation is implicit in many existing standards, it has never been precisely defined. Therefore, the Boards proposed the following definition in the Discussion Paper: "An entity's performance obligation is a contract with a

customer to transfer an asset (such as a good or service) to that customer." (DP3.2) The Boards then explain that it is the satisfaction of a performance obligation that results in the recognition of revenue. Furthermore, satisfying a performance obligation is typically accomplished by transferring the promised goods or services to the customer. At the Boards October 26, 2009 meeting, the Boards, in response to comments received on the DP, provided some additional guidance with respect to allocating a contract's transaction price. They tentatively decided that an entity should allocate the transaction price to segments of a contract rather than to individual performance obligations. A segment would include one or more performance obligations for which the entity has evidence of a market; meaning evidence that a segment of the contract could be sold separately. The change to contract segments instead of performance obligations was apparently made to make the proposed model more operational for various industries, such as construction, where it did not seem practical to allocate customer consideration to numerous small performance obligations such a nail, screw or board.

How does this concept of performance obligations and contract segments impact the accounting for post-delivery services such as right of return? In the Boards' proposed model, the right of return might end up being defined as a performance obligation and, if treated as a contract segment, some of the consideration received from the customer would not be recognized as revenue until the right of return service expires. What, exactly, is the return right the Boards have been discussing? In Agenda Paper 2C, provided as *Information for Observers* at the January 2008 meeting of the IASB, the IASB staff states, in paragraph 40, that: "In characterizing return rights, it is vital to distinguish between the actual return that would be due a customer and the activities necessary to transact the return." The expected cash refund is already calculated by most entities and is accounted for as a reduction in the amount of revenue recognized by the entity. This is not the right of return "performance obligation" being proposed under the new revenue recognition model. The right of return performance obligation being considered is comprised of the activities that are necessary to transact the return. In other words, the activities of accepting returned goods and providing refunds are the components of the proposed performance obligation. Proponents of the performance obligation approach believe these activities do constitute a performance obligation and some of the customer consideration should be allocated to it.

Treating a right of return as a performance obligation was not the only proposed treatment the Boards set forth in the Discussion Paper. They indicated that there were two primary "schools of thought" regarding the accounting for rights of return. Some of the Boards members support the performance obligation approach while other members believe the right of return is not a performance obligation but, instead, should be considered a failed sale.

Proponents of the performance obligation approach note that the selling entity is obligated to accept returns and refund the customers' consideration, indicating that the promised right of return is an enforceable term of the contract. Furthermore, they believe that the right of return is a service (asset) that is transferred to the customer. They suggest that a simple way to determine whether the right of return is an asset is to ask the customers whether they would pay additional consideration for that right. If they would pay an additional amount for the return right, then it has value and should be treated as a

performance obligation. If the promise to provide a return right to the customer is a performance obligation, then the selling entity would not recognize all of the revenue when the good is transferred to the customer at the point of sale. Some of the revenue would be attributed to the return service. In addition, the selling entity would no longer recognize the transferred good as inventory but, instead, would account for that inventory as having been sold to the customer.

The proponents of the failed sale treatment of return rights argue that when customers acquire a good with a right to return that good for a full refund, the customers have not accepted the entity's proposed terms of sale because they have the ability to unwind the transaction without consequence. Since the right to return a good indicates the customer has not accepted the selling entity's proposed terms of the sale, the selling entity should not recognize any revenue until the return right expires. In other words, a strict interpretation of this view means that a sale has not occurred until expiration of the right of return because the customer does not have to keep the asset. However, supporters of the failed sale approach argue that an entity may have many homogeneous transactions that give the entity the ability to estimate the proportion of goods that is likely to be returned. In those situations, an entity would recognize revenue for the proportion of transactions the entity expects not to fail, on the basis that the buyer has accepted the terms of the contract and has chosen to accept control of the good even though the right of return still exists. Consequently, under this view, an entity would continue to recognize inventory when that inventory has been transferred to the customer. This means the selling entity would recognize inventory for goods that are its customers' assets.

The next section of the paper illustrates how the sale of a product with a right of return would be accounted for if: (1) the right of return is treated as a performance obligation; and (2) the right of return is treated as a failed sale.

Examples: Sale of Good with Right of Return

The following examples are based on the facts and assumptions used in illustrative examples contained in Agenda Paper 2C; provided as *Information for Observers* of the January 2008 meeting of the IASB.

Facts and assumptions

Retailer sells 100 sweaters in December 2008. Each sweater sells for $25 and each costs $15. On average one sweater in a hundred is returned by a customer. The retailer estimates that it could sell sweaters without return rights for $24, suggesting that customers on average are willing to pay $1 for the right to return the sweater.

Return rights as performance obligations

If return rights are to be viewed as performance obligations, some portion of the total expected customer consideration to be received from these transactions should be allocated to the activities necessary to transact the return. The total expected customer consideration would be the $2,500 received up front minus the expected refund amount of $25, or $2,475. Based on the proportional

values of the sweater ($24) and the return right ($1), the amount of the total consideration allocated to the sweaters would be (24/25) x $2475 = $2,376 and the amount allocated to the return right would be (1/25) x $2,475 = $99. Based on this allocation, the following entries would be made when the sweaters are initially sold:

DR cash	2,500	
CR revenue		2,376
CR refund obligation		25
CR return service obligation		99
DR cost of good sold	1,485	
DR goods to be returned	15	
CR inventory		1,500

Assuming one sweater is returned, over the return period, the following entries would be made:

DR refund obligation	25	
DR inventory	15	
CR goods to be returned		15
CR cash		25
DR return service obligation	99	
CR revenue		99

As illustrated here, $99 of the expected customer consideration is allocated to the return right in addition to the anticipated refund amount of $25. When the right of return obligation is satisfied, the resulting decrease in contract liabilities results in the recognition of $99 in revenue. The total revenue recognized equals the amount of customer consideration actually received ($2,475), although $2,376 is recognized in one period and $99 is recognized in the next.

Return rights as failed sales

Proponents of treating return rights as failed sales think that the promise to transact a return simply represents the possibility that the customer can cancel the contract. They acknowledge that the right to return a good is an enforceable promise made by the entity. They do not, however, think that the

activities necessary to process the return transfer an economic resource of benefit to the customer. They hold that the activities required to process the return are provided as a normal part of doing business, and promising to continue to doing so that the customer can return a good for a refund does not transfer a benefit to the customer. As a result, they would not allocate any portion of the expected customer consideration to these promised activities. Based on the example above, supporters of the failed sale approach would allocate all of the expected customer consideration to the sweaters with the following entries being made:

DR cash	2,500	
CR revenue		2,475
CR refund obligation		25
DR cost of goods sold	1,485	
DR goods to be returned		15
CR inventory		1,500

Assuming one sweater is returned, over the refund period, the following entries would be made:

DR refund obligation	25	
CR cash		25
DR inventory	15	
CR goods to be returned		15

Since no consideration is allocated to the return transaction activities, more revenue is recognized when the sweaters are delivered. Although the total revenue recognized equals the amount of customer consideration actually received ($2,475), this full amount is recognized in the period when the sweaters are delivered and no revenue is recognized in the later period in which the return transaction is processed. Accounting for the right of return as a failed sale is consistent with current GAAP. Existing accounting for sales returns does not consider the "return activities" to be a performance obligation.

Conclusion

How much, if any, of the asset-liability revenue recognition principles contained in the Joint Boards' Discussion Paper will eventually end up being part of GAAP and IFRS? There is no clear answer to that question. As noted earlier, the general consensus of respondents to the Discussion Paper was to support the Boards' overall goal of creating a single revenue recognition standard that companies can apply

consistently across various industries and transactions. Unfortunately, a significant number of interested parties, including some members of the Boards, felt that the model proposed in the Discussion Paper, while fine for most contracts, would, for other contracts, provide less decision useful information than current practice does. Narrowing the scope of the analysis to accounting for the right of return, what does the future hold? Most of the respondents to the Discussion Paper support the identification of separate performance obligations based on when the goods and services are transferred to the customer. The majority did not, however, believe that this should apply to goods sold with a right of return. The following quote from Comment Letter No. 148 is indicative of the thinking of most respondents:

> We believe the current accounting for sales returns under FASB Statement No. 48 *Revenue Recognition When Right of Return Exists*, is consistent with the economics of transactions, provides decision-useful information to users and is generally straightforward, well understood and applied. (CLS 51)

In other words, the majority of respondents do not believe that the activities necessary to transact the return should be considered a separate performance obligation. Alternatively, they believe it should be accounted for as a failed sale.

At the December 16, 2009 meeting of the Joint Boards, the Boards issued additional clarification and some tentative guidance with respect to accounting for goods sold with a right of return. At this meeting the Boards tentatively decided that entities should not recognize revenue for goods that are expected to be returned. Instead, the expected amount of customer refunds should be accounted for as a refund liability. The refund liability should be updated for changes in the expected amount of refunds with a corresponding adjustment being made to the amount allocated to the performance obligation. In addition, the Boards decided that the seller should recognize an asset (and a corresponding adjustment to cost of goods sold) for its right to recover goods from customers on settling the refund liability, initially measured at the original cost of the goods. The tentative conclusions in these areas are consistent with and reinforce current practice with respect to the accounting for goods sold but expected to be returned.

The Boards also provided new tentative guidance with respect to accounting for the activities necessary to transact the return. The Boards have tentatively concluded that the promised return service should not be accounted for as a separate performance obligation. Therefore, one must conclude that the right of return will be accounted for in a manner identical to, or at least similar to, the failed sale example illustrated above; with none of the customer consideration being allocated to the activities necessary to transact the return. The Boards' tentative decision is hardly surprising given the following two factors. First, the Boards members have been divided over the issue of return rights; meaning that there is not a strong consensus in favor of treating return rights as a performance obligation. Second, the fact that a large majority of responses to the Discussion Paper expressed support for the failed sale approach to accounting for return rights made the Boards' tentative conclusion the more "generally accepted"

option. Perhaps the Boards' decisions in this area will help to garner support for their forthcoming proposal for a new revenue recognition model.

While it is unlikely, it is not impossible for the performance obligation treatment of return rights to be the approach that the Boards eventually recommend when they issue their new revenue recognition standard. The decisions reached at the December 16, 2009 meeting were noted to be tentative. While tentative, they will likely be the recommendations contained in the Boards' exposure draft on revenue recognition. However, comments received in response to the exposure draft may cause the Boards to revisit the issue of return rights. The exposure draft is scheduled for release in the second quarter of 2010. The target date for a new revenue recognition standard is June of 2011.

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PRINCIPLES BASED ACCOUNTING VERSUS RULES BASED ACCOUNTING

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ABSTRACT

The world is moving toward a single set of global accounting standards. Companies who are publicly traded are changing from local accounting rules to global accounting rules. The London based International Accounting Standards Board (IASB) has emerged as the premier global accounting standard setter. The IASB issues accounting standards that are called International Financial Reporting Standards (IFRS).Over 100 countries, including Europe, Japan, China, Australia, Canada and India are using IFRS or about to adopt them. At this time, the United States has not committed to using IFRS. The SEC has stated that it may require U.S. listed companies to convert to IFRS by 2014. The SEC has permitted nonpublic companies to use a simplified version of IFRS for small and medium sized enterprises.. It is critical for U.S accountants to grasp the fundamentals of IFRS in order to discuss the possible impact on their entities financial statements. The International Financial Reporting Standards are viewed as principles based. The U.S. accounting standards are viewed as rules based. If the U.S. adopts IFRS, accountants will need to make the transition from rules based accounting to principles based accounting. This paper compares principles based accounting versus rules based accounting.

Why the focus on principles based accounting?

The International Financial Reporting Standards (IFRS) prepared by the London-based International Accounting Standards Board (IASB) has become the primary form of financial reporting in the world. Over 100 countries, including Europe, Japan, China, Australia, Canada and India are using IFRS or are about to adopt them. It is estimated that nearly 150 countries will have adopted IFRS by 2012. The U.S. is likely to switch from U.S. GAAP (generally accepted accounting principles) to IFRS by 2014. The international accounting firms (big four), professional accounting organizations and industry are all in support of the IFRS. Many believe that the IFRS will soon become the only accounting pronouncements used by listed companies. The world is now learning IFRS. The International Financial Reporting Standards are viewed as principles-based. In the U.S., accountants will need to make a transition from rules-based accounting to principles-based accounting.

In the United States, the aftermath of the financial reporting scandals of the early 2000s resulted in Congress passing the Sarbanes-Oxley Act of 2002.One of the main intentions of the Act was to prevent scandals from recurring. One reason identified for the scandals was the rules-based nature of U.S. GAAP. Some U.S GAAP is based on following a list of rules. It was found that some managers would structure transactions to follow the rules but not report the economic substance of the transaction. The managers were able to find loopholes in the rules to report a transaction in such a way to as to show the company in an unrealistic favorable light (Goldberg, Grant, and Stovall 2006).

The Sarbanes-Oxley Act required the Securities & Exchange Commission (SEC) to study the feasibility of using principles-based accounting in the United States. The emergence of the IFRS as the primary accounting in the world and the SEC mandate to study the possibility of using principles-based accounting in the U.S. has brought principles-based accounting to the forefront. This paper will compare and contrast principles-based accounting with rules-based accounting.

Defining principles-based accounting

Shortridge and Myring (2004) explain that principles-based accounting provides a conceptual basis for accounting to follow instead of a list of detailed rules. This approach starts with establishing the main objectives of fair reporting in a particular area and then provides guidance explaining the objective and provides examples. American Institute of Certified Public Accountants (2008) explains that principles-based accounting provides much less detail than rules-based accounting. This can be easily visualized by looking at the publications. The IFRS publication fits into one book which is about eight inches thick. While there are 3-4 U.S. GAAP paperbacks which are nine inches thick which doesn't cover all the material. Gill (2007) explains the difference between the principles bases accounting and rules based accounting by using an example from our everyday lives. Ponder the difference between a parent telling their child to be home at a reasonable hour(principles based) and telling her to be at home at 11 P.M. and then providing for the 15 contingencies that might justify a different time(rules based).

Stuebs and Thomas (2009) point out that principles-based accounting requires judgment whereas rules-based accounting may not. The authors explain that in rules-based accounting the standards tell the preparer what to do, while principles-based accounting tells the preparer how to decide.

With much criticism about rules based accounting, the U.S. studied principles based accounting

The Financial Accounting Standards Board (FASB) is a private sector organization which prepares U.S. GAAP. The FASB performed a study in 2002 related to principles-based accounting prior to the study by the SEC. The FASB recommended the use of principles-based accounting in the U.S. The report delineated concerns about the current rules-based accounting used in the U.S. The report observed that the rules-based accounting had become too detailed and complex. The report also stated that there are too many exceptions to the principles which add significantly to the complexity. In addition, the FASB observed that there was too much implementation and interpretation guidance. This has added

significantly to the complexity and the excessive amount of detail (Financial Accounting Standards Board, 2002).

In the aftermath of the scandals that preceded the Sarbanes-Oxley Act, Congress ordered the Securities & Exchange Commission (SEC) to perform a study on the feasibility of principles-based accounting in the United States. The SEC uses the term objectives oriented standard setting rather than the term principles-based accounting. The SEC describes objectives oriented standard setting by delineating the recommendations that the new standards should have:

- The standards should clearly identify the accounting objective.
- The standards should be based on a conceptual framework.
- The standards should minimize the use of exceptions from the standard.
- The standards should avoid the use of bright line rules.

The report recommended the adoption of objectives-oriented standard setting. The SEC pointed out that the FASB has already begun the transition to objective-oriented standard setting Taub (2003).

Epstein (2009) observes that the SEC report recommends a modified version of principles-based accounting. The author refers to the SEC recommendation as a composite solution. The SEC did support principles-based accounting but also acknowledged the need for substantial implementation guidance. In other words, the SEC is supporting principles-based accounting with extensive rules for implementation.

An example of rules-based accounting (U.S. GAAP- FASB 13 compared to principles-based accounting (IAS 17)

Spiceland, Sepe, Nelson, and Tomassini (2009) explain that lease accounting provides a good example for contrasting the two approaches. If a lease contract is in-substance the purchase of the asset it is accounted for similar to an installment purchase. In rules-based accounting- FASB 13, there are four bright-line tests that determine if the transaction is an in-substance purchase. An asset is recorded and a liability is also recorded when one of the bright-line tests are met. This is known as a capital lease. If the lease does not meet one of the bright-line tests it is classified as a operating lease instead of a capital lease. An asset and a liability are not recorded in an operating lease. The authors identify this as the problem. Managers do not want to show liabilities on the balance sheet. As a result, they engineer the lease transaction so that they technically do not meet one of the bright-line tests. The concern is to follow the accounting rule which will show the company in a favorable light rather than to communicate the economic substance of the transaction (Benston et al. 2006).

On the other hand, IAS 17 employs a principles-based approach to lease accounting which has very little detailed guidance. In this standard the emphasis is on professional judgment rather than specific rules

to determine whether a lease is an in-substance purchase. It contains broad guidelines but has none of the bright-lines of FASB 13, IAS 17 requires the exercise of professional judgment. Smith and Von Bergen (2009) state that in order to decide whether to classify a lease as either capital(finance) lease or an operating lease, the economic effects of a lease on a company's operations are examined, rather than a specific bright line criteria being used. The authors point out that under IFRS, there is a need for more background information to eliminate the ambiguity in the decision.

Principles based accounting versus rules based accounting: Are they really different?

Katherine Schipper, a member of the Financial Accounting Standards Board (FASB), points out that the U.S. accounting rules can be considered to be principles based. The author explains that FASB standards are developed by following a conceptual framework. It is the inclusion of explanatory information such as implementation guidelines and scope exceptions and alternative treatments that make the principles based standard appear to be rules based Schipper (2003). Charles Niemeier, the former head of the PCAOB and a critic of adopting IFRS states that it is a myth that IFRS is based more on principles than U.S. GAAP. The IASB has not been in existence for very long. It is very possible that in time, the IFRSs will include the same explanatory information Leone (2008)..

The debate between rules-based accounting and principles-based accounting

Benston et al. (2006) provide the criticisms against both rules-based accounting (U.S. GAAP) and principles-based accounting(IFRS). The criticisms against rules-based accounting include:

- U.S. GAAP has exceptions to the principles and bright-line tests which provide loopholes that enable management to avoid reporting the economic substance of the transaction.
- U.S GAAP rules can become useless when the environment changes.
- U.S. GAAP rules are very detailed and complex.
- U.S. GAAP has numerous implementation guidelines which add to the complexity.

The criticisms against principles-based accounting include:

- IFRS lacks operational guidelines.
- The lack of operational guidelines causes a lack of comparability. This is the main argument against principles-based accounting.
- IFRS requires exercising judgment without sufficient structure.

FASB comment letters opposing principles based accounting

Ketz (2008) observes that many have called for the adoption of principles-based accounting in the United States. The list includes CEOs, management, auditors, attorneys, the staff of the SEC and

members of Congress. The Financial Accounting Standards Board (FASB) has a due process when proposing changes. Anyone is welcome to provide their opinion to the FASB through a comment letter. The author who is not a supporter of principles-based accounting read the 135 comment letters submitted to the FASB. He found that a majority of the letters were in support of principles-based accounting. A summary of notable comments against principles-based accounting are listed below:

- The Computer Science Corporation wrote that they did not believe that any accounting system could stop irresponsible managers from reporting misleading results. In addition, principles-based accounting lacks the bright-line tests which provide preparers with a safe harbor in a litigious environment.

- The international accounting firm- BDO Seidman believed that there would a significant lack of comparability among financial reports. The company was also concerned that principles-based accounting will cause a change in the legal and regulatory environment.

- R.G. Associates wrote that principles-based accounting may work in countries that do not have market participants who put significant pressure on managers to meet financial metrics each period. The U.S. is not such a country.

- Robert Anthony, a retired accounting professor wrote that principles-based accounting assumes ethical behavior by managers and others. He stated that this may be an unrealistic assumption. In addition he gave the analogy that rules based accounting gives the driver traffic controls such as red lights. Principles-based accounting would eliminate the red lights and provide principles that the driver is to follow. He hopes the drivers remember the principles (stop for ambulances) and would follow the principles.

- David Mosso, a former FASB board member, notes that the underpinning of principles-based accounting is professional judgment. He maintains that professional judgment is an euphemism for client choice. The motivation for professional judgment is the fair presentation of the financial reports. The motivation for client choice is self-interest and not the need for transparency.

Ketz (2008) laments that the SEC and the FASB are ignoring the above concerns. In addition he challenges the supporters of principles-based accounting to provide the evidence that principles-based accounting will improve usefulness for the users of financial statements.

Implications if IFRS is adopted

Smith& Von Bergen (2009) identified traits needed to apply principles based accounting. The authors state that when accountants use their professional judgment, it requires different skills when interacting with their clients:

- Ability to find undisclosed events. An accountant may need to take more energetic steps in identifying undisclosed economic events. This will also require the ability to discuss strategic changes without alienating the client.
- Ability to tolerate ambiguity. Accountants that can make effective decisions with acceptable level of ambiguity are needed in a principles based environment.
- Ability to identify inferred relationships. Accountants may need to rely on inferred information rather than data that is explicitly stated.
- Ability to work with uncertainty. In a rules based environment, uncertainty can be avoided by closely following the rules. The new accounting environment will probably favor accountants that can make decisions in uncertain situations.

Conclusion

Despite objections of a few, the U.S. appears to be moving forward with the adoption of IFRS and principles-based accounting. The actions of the standard setters, accounting profession and industry that were discussed in this paper show that the U.S is carefully studying the impact of principles based accounting.

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THE FINANCIAL STATEMENT IMPACT OF SFAS NO. 158

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ABSTRACT

The FASB, in conjunction with the IASB, is involved in a two phase review of accounting for pension plans. Results of the first phase suggested that footnote only disclosures concerning the funded status of pension plans and other post-retirement benefit plans lacked transparency, and thus reduced both the relevancy and reliability of financial statements. This finding led to the issuance of SFAS 158 and a requirement that companies report the over- or under-funded status of benefit plans on balance sheet. This study investigates the financial statement impact of SFAS 158 adoption by analyzing the statement of financial position of S&P 500 companies. Results indicate significant increases in leverage ratios, supporting one hypothesis, but also suggest that the greatest impact of standard adoption was not necessarily restricted to industrialized companies as hypothesized.

Keywords: Accounting Standards; Pensions; Transparency; Accounting Disclosures

Introduction

In September 2006, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards No. 158, "Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans—an amendment of FASB Statements No. 87, 88, 106, and 132(R)," (SFAS 158)[1]. This statement was issued in response to the Securities and Exchange Commission's (SEC) request to review the accounting for defined benefit plans.[2] This request was the result of two earlier initiatives by the SEC. First, on October 18, 2004, the SEC announced that it was investigating whether six (unnamed) large companies had manipulated earnings when calculating their costs for pensions and retiree health benefits. This investigation focused on the assumptions used in calculating pension expenses. It also examined how companies used qualified retirement plans to create "cookie jar reserves"[3] that could boost future earnings (Apostolou & Crumbley, 2006). Second, the Sarbanes-Oxley Act of 2002 charged

the SEC with studying off-balance sheet financing, special purpose entities and reporting transparency. The SEC completed its study on June 15, 2005, and pension accounting was a primary target of the report's standards-setting recommendations (Bryan, Lilian, & Mooney, 2007). The SEC suggested the pension project to the FASB because although it believed the quality of financial accounting had generally improved since Enron, there were still some problem areas, such as pension plan accounting (SEC, 2005).

SFAS 158 requires an employer that is a business entity and sponsors one or more single-employer defined benefit plans to:

a. Recognize the funded status of a benefit plan—measured as the difference between plan assets at fair value (with limited exceptions) and the benefit obligation—in its statement of financial position.
b. Recognize as a component of other comprehensive income, net of tax, the gains or losses and prior service costs or credits that arise during the period but are not recognized as components of net periodic benefit cost pursuant to FASB Statement No. 87, *Employers' Accounting for Pensions,* or No. 106, *Employers' Accounting for Postretirement Benefits Other Than Pensions.* Amounts recognized in accumulated other comprehensive income, including the gains or losses, prior service costs or credits, and the transition asset or obligation remaining from the initial application of Statements 87 and 106, are adjusted as they are subsequently recognized as components of net periodic benefit cost pursuant to the recognition and amortization provisions of those Statements.
c. Measure defined benefit plan assets and obligations as of the date of the employer's fiscal year-end statement of financial position
d. Disclose in the notes to financial statements additional information about certain effects on net periodic benefit cost for the next fiscal year that arise from delayed recognition of the gains or losses, prior service costs or credits, and transition.

The changes in pension accounting required by SFAS 158 have caused companies to be concerned that their leverage ratios will be negatively impacted and cause their earnings to appear unstable (Tergesen, 2006). Decreased leverage ratios may also affect the way equity and credit analysts perceive pension plan sponsors' risk profiles (Watson, 2007). However, due to a limited amount of empirical research to date, there is little evidence of the potential impact to companies' financial positions.

SFAS 158 became effective for all publicly traded companies in the United States with fiscal periods ending after December 15, 2006; consequently, December 31, 2006, was the first reporting date for most companies under its provisions. This study reports on a study of the financial statement impact of SFAS 158 for the first year that it became effective.

Background

Accounting for the cost of defined benefit pension plans has a long and evolutionary history. It first became an issue because of the rapidly increasing number of pension plans adopted by companies immediately after World War II. A major concern was the fact that many pension plans gave employees credit for their years of service before adoption of the plan. The point at issue was the most appropriate treatment of costs associated with this past service.

In *Accounting Research Bulletin No. 47,* "Accounting for Costs of Pension Plans," (ARB 47), the Committee on Accounting Procedure (CAP) expressed its preference that costs based on current and future service be systematically accrued during the expected period of active service of the covered employees and that costs based on past services be expensed over some reasonable period. The allocation of past service cost was to be made on a systematic and rational basis and was not to cause distortion of the operating results in any one year. However, this recommendation did not resolve the issue because ARB standards were not mandatory.

Later, the Accounting Principles Board (APB) observed that despite *ARB 47,* accounting for the cost of defined benefit pension plans was inconsistent from year to year, both among companies and within a single company. Sometimes, the cost charged to operations was equal to the amount paid into the pension fund during a given year; at other times no actual funding occurred. Moreover, the amortization of past service cost ranged up to forty years.

Accounting inconsistencies and the growing importance of pension plan costs prompted the APB to authorize *Accounting Research Study No. 8,* "Accounting for the Cost of Pension Plans" (APB, 1965). This study was published in 1965, and after careful examination of its recommendations, the APB issued *Opinion No. 8,* "Accounting for the Cost of Pension Plans" (APB, 1966).

APB Opinion No. 8 identified the four basic problems associated with accounting for the cost of defined benefit pension plans as (1) measuring the total amount of costs associated with a pension plan; (2) allocating the total pension costs to the proper accounting periods; (3) providing the cash to fund the pension plan; and (4) disclosing the significant aspects of the pension plan on the financial statements.

Prior to the issuance of *APB Opinion No. 8*, there was disagreement on the most appropriate measure of cost to be charged as an expense in each period. *APB Opinion No. 8* indicated that annual pension expense should be measured by an acceptable actuarial cost method, consistently applied, that produces an amount between a specified minimum and maximum.[4]

APB Opinion No. 8 narrowed the range of practices previously employed in determining the annual provision for pension expense. However, it should be noted that the defined minimum and maximum provisions were arbitrarily determined. Thus, the only theoretical justification for their use was a higher degree of uniformity. In addition, the APB decided that only the difference between the amount

charged against income and the amount funded should be shown in the balance sheet as accrued or prepaid pension cost. Under the provisions of *APB Opinion No. 8,* the unamortized and unfunded past service cost was not considered to be a liability and was not required to be disclosed on the balance sheet. This treatment caused a great deal of controversy and resulted in a debate over the proper amount of future pension costs to be disclosed on financial statements.

In 1981, in a release titled "Preliminary Views: Employers' Accounting for Pensions and Other Post Retirement Benefits (FASB, 1981) (PV), the FASB proposed a significant change in the method to account for pension cost. The additional guidelines were believed necessary because by 1979, there were 500,000 private pension plans in the United States, with total plan assets exceeding $320 billion. There had also been significant changes in laws, regulations, and economic factors affecting pension plans, not the least of which was the double-digit inflation that existed at that time.

The basic questions addressed in PV were:

1. Over what period should the cost of pensions be recognized? In 1981, pension costs could be recognized over a period of thirty to forty years, which was generally longer than the current workforce was expected to continue working.
2. How should pension costs be spread among or allocated to the individual periods? The basic question here was whether the practice of choosing among a variety of acceptable costs and funding methods met the needs of financial statement users.
3. Should information about the status of pensions be included in the statement of changes in financial position? This was undoubtedly the most controversial of the issues considered.

PV concluded that the amount of annual pension expense that an employer should recognize would be the sum of:

a. the increase in the pension benefit obligation attributable to employee service during the period;
b. the increase in the pension benefit obligation attributable to the accrual of interest on the obligation (resulting from the fact that the obligation is the discounted present value of estimated future payments);
c. the increase in plan assets resulting from earnings on the assets at the assumed rate (reducing the periodic pension expense); and
d. the amortization of the measurement valuation allowance, which may either increase or decrease the pension expense. Actuarial gains or losses would be included in the measurement of the valuation allowance.

After deliberating the issues addressed in PV for several years, the FASB reached a consensus in 1985 and issued SFAS 87, "Employers' Accounting for Pensions" (FASB, 1985). This release was a product of compromises, and resulted in several differences from positions expressed in PV. SFAS 87 maintained that pension information should be prepared on the accrual basis, with the intended result that

understandability, comparability, and the usefulness of pension information would be improved by narrowing the range of methods available for allocating the cost of an employee's defined benefit pension to individual periods of service. The FASB also maintained that the pension plan's benefit formula provides the most relevant and reliable indicator of how pension costs and pension benefits are incurred. Therefore, SFAS 87 required three changes in previous pension accounting:

1. A standardized method of measuring net pension cost. The FASB indicated that requiring all companies with defined benefit plans to measure net period pension cost, taking into consideration the plan formula and the service period, would improve comparability and understandability.
2. Immediate recognition of a pension liability when the accumulated benefit obligation exceeds the fair value of the pension assets. The accumulated benefit obligation is calculated using present salary levels. Because salary levels generally rise, the amount of the unfunded accumulated benefit obligation represents a conservative floor for the present obligation for future benefits already earned by the employees.
3. Expanded disclosures intended to provide more complete and current information that can be practically incorporated into the financial statements at this time.

The annual defined benefit pension expense reported by corporations under SFAS 87 will usually be different from the amount previously disclosed under the provisions of *APB Opinion No. 8.* The magnitude of these differences depends on such factors as the pension plan's benefit formula, employees' remaining service periods, investment returns, and prior accounting and funding policies. Companies that had underfunded pension plans with a relatively short future
employee service period were required to report significantly higher defined benefit pension expenses.

In 1990, the FASB issued SFAS 106, *Employers' Accounting for Postretirement Benefits Other Than Pensions* (FASB, 1990) that outlined the accounting treatment for health care benefits. SFAS 106 followed the precedents described in SFAS 87 for pension accounting and was issued because the FASB believed that this statement would fill a significant need for information about the financial effects of postretirement health care benefits that have been exchanged for an employee service. Previously, the financial effects of these benefits were not disclosed in the financial statements.

In 1998, the FASB issued SFAS 132, *Employers' Disclosures about Pensions and Other Postretirement Benefits* (FASB, 1998). This standard attempted to enhance the way pension plans were disclosed in the footnotes by making them more detailed. At the time SFAS 106 and SFAS 132 were issued, the FASB acknowledged that pension accounting was still in a transitional stage and that future changes might be necessary.

Subsequently, pension accounting was criticized because the mandated financial statement disclosures lacked transparency concerning how pension plans impact financial positions and earnings (Welsh & Wentzel, 2005). In response to this need, the FASB issued SFAS 132 Revised, *Employers' Disclosures*

about Pensions and Other Postretirement Benefits (FASB, 2003). The intended effect of SFAS 132(R) was to enable users to understand the economics of pension plans and to improve the transparency of reporting pension plans by expanding the disclosure of pension plan information (Shaw, 2005).

In 2005, the FASB, in conjunction with the International Accounting Standards Board (IASB), added a two phase review of accounting for pension plans to its agenda. The objective of the first phase was to address the fact that information about the financial status of a company's defined benefit pension plans (DBPP) and other postretirement benefits plans (OPRP) is reported in the notes to the financial statements but not on the balance sheet. The second phase of the project, currently under way, addresses a broad range of financial accounting and reporting issues in the area of postretirement benefits.

The FASB's phase one review revealed that existing standards on employers' accounting for DBPPs and OPRPs failed to communicate the funded status of those plans in a complete and understandable way. That is, the assets and liabilities of DBPPs and OPBPs were not disclosed on the benefit provider's balance sheet and were only reported in the footnotes. Specifically, current standards allowed an employer to:

a. Delay the recognition of events that affected the costs of providing postretirement benefits. Such as changes in plan assets and benefit obligations, and to recognize a liability that was sometimes significantly less than the underfunded status of the plan.
b. Recognize an asset in its statement of financial position, in some situations, for a plan that was underfunded.
c. Defer the recognition of actuarial gains and losses that have the potential to fluctuate significantly. That is, since the procedures outlined in SFAS 87 and 106 were designed to smooth the amounts reported for pension plans, financial statements often reported an asset on the balance sheet, giving the impression the plan was overfunded, when in fact a funding deficit was reported in the footnotes. Presenting this information in the footnotes notes makes it more difficult for users of financial statements to assess an employer's financial position and ability to satisfy postretirement benefit obligations.

The FASB's phase one review of pension accounting resulted in the issuance of SFAS 158. This pronouncement requires recognition of the overfunded or underfunded status of a DBPP or OPBP as an asset or liability in a company's statement of financial position, and to recognize changes in that funded status in the year in which the changes occur through comprehensive income.

These adjustments will probably result in a reduction of the book value of shareholder equity for many companies that have DBPPs or OPRPs. One study estimated a total reduction in shareholder equity at December, 31, 2006, of $217 billion or approximately 6%. (Merrill-Lynch, 2006). In essence, the impact of SFAS 158 is that information previously disclosed in the footnotes will be incorporated into the financial statements. As a consequence, the result may be changed leverage ratios. This result could have serious

consequences to those companies that have underfunded defined benefit pension plans and outstanding debt issues containing covenants that are tied to equity and leverage ratios (Silverblatt, 2005).

SFAS 158 is not without detractors. While the standard was being deliberated, many companies and individuals wrote comment letters voicing concerns about the proposed changes. A majority stated that they understood the reasoning behind the proposal yet believed that the requirements were somewhat idealistic and not beneficial to the companies (FASB, 2006). Additionally, some market analysts believed that the initial effect of the standard would be that billions of dollars will be removed from U.S. corporate financial statements. For example, David Zion, an analyst specializing in accounting and taxation for Credit Suisse First Boston, suggested "that if hypothetical returns were removed from companies in the Standard & Poor's 500 (S&P 500) in 2001 and 2002, comprehensive earnings would fall by 67 percent in both years. Furthermore, many S&P 500 companies had about $218 billion worth of underfunded pension obligations at the end of 2005" (Silverblatt, 2005).
Regardless of the impact of SFAS 158 on companies' financial statements, its provisions improve financial reporting in two ways. First, SFAS 158 requires companies that sponsor defined-benefit postretirement plans to report the funding status of these plans in their statement of financial position. This change eliminates the need for reconciliation of the footnotes to the financial statements, which will add to the transparency of financial information. Second, SFAS 158 also requires companies to measure their plan assets and plan obligations as of the end of their fiscal year, rather than as of a measurement date that can be up to three months before the end of their fiscal year. These changes should improve financial reporting by making the financial statements more complete and more representationally faithful. (Soroosh & Espahbodi, *2*007)

It also has been speculated that industrial companies with many unionized workers will be the most significantly impacted by SFAS 158. (Hurtt, Kreuze, & Langsam, 2007). These impacts may cause companies to eliminate, reduce, or modify benefits to employees, which actually was an economic consequence of SFAS 106 (Schroeder, Sevin, & Schauer, 2006).

Lenders, investors, donors, and others may view these postretirement benefit arrangements differently in the wake of this enhanced transparency. The purpose of this study is to examine the impact of SFAS 158 on a sample of companies for the first year it was effective.

Hypotheses

At the beginning of the 21st century, most defined benefit pension plans were 100% funded but many plans lost money when the stock market declined. As a consequence, a substantial number of defined benefit pension plans are now underfunded. (Zabihollah, 2006). This suggests that recording pension assets and liabilities on corporate financial statements will result in a decrease in assets and an increase

in liabilities. Therefore, we hypothesize that the effect of SFAS 158 will be an increase in companies' debt-to-asset and debt-to-equity ratios.

This potential outcome should be of interest to company stakeholders because it has several potential ramifications. First, the decline in these ratios could make companies appear more expensive and affect how the market values its stock. Second, as noted earlier, declining debt-to-equity ratios could impact loan covenants, resulting in defaults or covenant renegotiations. Third, the recognition of unfunded pensions liabilities on corporate balance sheets may make it more difficult for companies to access credit and have a substantial impact on capital expenditure decisions, Finally, because of the requirements of The Pension Protection Act of 2006[5], many companies may choose to fund their pensions by either borrowing to fund their plans or using available cash (Stockton, 2008; Zabihollah, 2006).

Additionally, there is an economic consequences aspect to the impact of SFAS 158. That is, what segment of the economy will be most impacted by this pronouncement? The economic consequences of accounting standards have been the focus of several studies (Schroeder et al., 2006; Guay, Kothari, & Sloan, 2003; Dechow, Hutton, & Sloan, 1996; Khurana & Loudder, 1994; Wasley & Linsmeier, 1992; Stone and Ingram, 1988). We hypothesize that the greatest impact of SFAS 158 will be on the most highly industrialized companies.

Sample

Our initial sample was the 500 companies included in the S&P 500 index. Firms with non-December 31 fiscal year ends were eliminated (52), as well as firms with no defined benefit pension plans (79) and those that did not provide adequate footnote disclosure for the analysis (102). Effective at the end of 2008, SFAS 158 requires firms to begin measuring pension plan assets and benefit obligations as of the date of the firm's fiscal year-end, and therefore, firms with pension plan measurement dates other than December 31 were also eliminated (70). Finally, one firm stated in its footnotes that the adoption of SFAS 158 did not have a material effect on its financial statements and provided no additional information. Therefore, it too was removed from the sample. Table 1 presents a summary of how the final sample was derived.

Methodology

The vast majority of firms provided tables in their footnotes that clearly identified the balance sheet effects of SFAS 158 adoption. An example extracted from Marathon Oil's 2006 10-K filing is included as Table 2. Table 2 indicates that the impact of SFAS 158 on Marathon's balance sheet was a reduction in assets of .8% and a reduction in stockholders' equity of 2.3%. A similar analysis was conducted for the other 195 firms in the sample.

Table 1. Sample Determination

Number of firms included in the S&P 500 Index	500
Less:	
Firms with inadequate footnote discloser	(102)
Firms with no defined benefit pension plans	(79)
Firms with non-12/31 pension plan measurement dates	(70)
Firms with non-12/31 fiscal year-ends	(52)
Firms for which SFAS 158 adoption was stated as immaterial	(1)
Final Sample	196

The implementation effect for the sample of firms was determined by calculating the debt to assets and debt to equity ratios twice, once using the information as reported in the financial statements (i.e., post SFAS 158 adoption) and subsequently "as if' the standard had not been implemented (i.e., pre SFAS 158 adoption).

Table 2. Marathon Oil
Incremental Effect of Applying SFAS 158 on Individual Line Items of the Balance Sheet as of December 31, 2006

(In millions)	Before Application of SFAS No. 158	Adjustments	After Application of SFAS No. 158
Prepaid pensions	$ 229	$(229)	$ –
Investments and long-term receivables	1,893	(6)	1,887
Total assets	$ 31,066	$ (235)	$30,831
Payroll and benefits payable	384	25	409
Defined benefit postretirement plan obligations	870	375	1,245
Long-term deferred income taxes	2,183	(286)	1,897
Deferred credits and other liabilities	397	(6)	391
Total liabilities	$15,598	$ 108	$15,706
Accumulated other comprehensive loss	(25)	(343)	(368)
Total stockholders' equity	$14,950	$(343)	$14,607

Results

The descriptive statistics for our sample of companies are presented in Table 3. The mean decrease in assets associated with SFAS 158 adoption was $222.3 million, with 121companies experiencing a decrease in assets and 52 experiencing an increase in assets. The total assets of 21 companies did not change. The mean increase in liabilities was $374.2 million, with 149 companies experiencing an

increase in liabilities and 49 experiencing a decrease. The mean decrease in stockholders' equity, which was due to increases in accumulated other comprehensive losses, was $596.6 million with 179 companies experiencing a decrease in stockholders' equity and 16 experiencing an increase. One company's stockholders equity did not change. All changes in the balance sheet components are significant at the 1% level. The median (unpresented) changes were a decrease in assets of $22.9 million, an increase in liabilities of $28.1 million, and a decrease in stockholders' equity of $103.5 million. The cumulative (unpresented) effect of the standard's adoption for the complete sample of 196 firms was a $60.6 (0.l4%) decrease in assets, a $56.4 billion (0.5%) increase in liabilities and a $117.0 (4.3%) decrease in stockholders' equity. These results support earlier speculations that many U.S. pension plans are substantially underfunded (Merrill Lynch, 2006; Silverblatt, 2005).

Table 3. Balance Sheet Effects of SFAS 158
Increase (Decrease) in Thousands
N = 196 Firms

	Assets	Liabilities	Stockholders' Equity
Mean	($222,374) (p<.0001)	$374,190 (p<.0001)	($596.565) (p<.0001)

Note: P is the significance level for a test of differences between the means.

Table 4 presents the mean calculations for the sample's 2006 debt-to-assets ratio. Column 1 presents the ratio results "as if' SFAS 158 had not been adopted, column 2 presents the ratio effects post adoption and column 3 presents the difference between the two results. The mean increase was 3.6% from 0.6528 to 0.6697, and is significant at the 1% level. The (unreported) median increase was 1.1 % from 0.6502 to 0.6595. Changes in the debt-to-assets ratio (unpresented) ranged from -12.0% to 118.2%.

Table 4. 2006 Debt-to-Assets Ratio
N = 196 Firms

	Pre-SFAS 158	Post-SFAS 158	Difference
Mean	0.6528	0.6697	3.6% (p<.0001)

Note: P is the significance level for a test of differences between the means.

Table 5 presents the mean calculations for the 2006 debt-to-equity ratio. Of the 196 firms, two had negative stockholders' equity from the adoption of SFAS 158. The adoption of the standard caused three additional firms to report negative stockholders' equity. Due to the interpretative issues posed by a negative denominator, these five firms were removed from the analysis of this ratio. For the remaining 191 firms, the mean debt-to-equity increase was 13.2% from 3.6637 to 4.4488, and is significant at the 1% level. The (unreported) median increase was 3.2% from 1.8126 to 1.9740. Changes in the debt-to-equity ratio (unpresented) ranged from 10.9% to 463.2%.

Table 5. 2006 Debt-to-Equity Ratio
N = 191 Firm

	Pre-SFAS 158	Post-SFAS 158	Difference
Mean	3.6637	4.4488	13.2% (p<.0001)

Note: P is the significance level for a test of differences between the means.

Table 6 presents the 10 companies whose debt-to-assets ratios showed the greatest impact. The range of impact on these 10 companies was 118.2% to 14.9%. Table 7 presents the 10 companies whose debt-to-equity ratios showed the greatest impact. The range of impact on these 10 companies was 463.2% to 63.5%.

Discussion

The results suggest that our hypothesis on the impact of SFAS 158 on debt ratios was supported. The impacted companies experienced a significant increase in both their debt-to-assets and debt-to-equity ratios. As expected, the change in the debt-to-equity ratio was greater than the change in the debt-to-assets ratio. This result is intuitive because although the numerator for both ratios is the same, the new standard impacts the denominators differently. When pension plans are underfunded, assets are reduced under the standard, and all previously recorded income from the underfunded plans must be removed from retained earnings by recording an accumulated other comprehensive loss; as a consequence, the reduction to stockholders' equity is much greater than the reduction in assets.

Table 6. Debt to Assets Ratio
Companies Most Impacted

Rank	Company	Percent Impact
1.	Dow Jones	118.2%
2.	Corning	93.1
3.	Unysis	34.5
4.	Teradyne	34.0
5.	3M	30.9
6.	Merck	19.8
7.	Ambac Financial	19.4
8.	Lockheed Martin	17.3
9.	Consol Energy	16.6
10.	Johnson & Johnson	14.9

Table 7. Debt to Equity Ratio
Companies Most Impacted

Rank	Company	Percent Impact
1.	Dow Jones	463.2%
2.	Ford Motor Company	277.3
3.	IMS Health	170.0
4.	Corning	106.9
5.	Pepsi Company	72.3
6.	Lockheed Martin	71.1
7.	Consol Energy	69.2
8.	Qwest Communications	68.5
9.	3M	66.2
10.	Ambac Financial	63.5

On the other hand, the hypothesis that SFAS 158 would have the greatest impact on industrialized companies was not fully supported. Tables 6 and 7 indicate that the highest impacted companies include such industrialized companies as Corning, Teradyne, 3M, Ford Lockheed Martin and Consol Energy but other highly impacted companies, such as Dow Jones, Unisys, Ambac Financial and IMS Health, do not fit that profile.

Conclusion

This study provides information on the impact of SFAS 158. The results suggest that implementing the standard will improve the transparency of pension cost as the FASB intended, in that the existence of underfunded pension plans is now reflected on the face of the balance sheet rather than being obscured in the footnotes. Additionally, the presentation of liabilities and equity is more accurately reflected, resulting in more reliable and relevant financial statements. This study reports that the adoption of SFAS 158 generally caused debt ratios to increase; the extent to which this increase in leverage ratios might cause companies to violate debt covenants is a question for further research.

Additionally, further research should be undertaken to determine the market reaction to SFAS 158. A search of the existing literature failed to detect any current research on this topic. Another potential

area of interest is how SFAS 158 affected managerial decision making. For example, management may wish to examine the nature of its pension plan liabilities, and how might they change over time. Management may want to assess how recent legislative changes, such as the Pension Protection Act of 2006, have impacted the current financial position of the company's pension plan. They may also want to determine how the company's pension plan and financial statements interact in different economic conditions, or to assess if the correlation of pension and business risk is a significant factor.

Endnotes

1 Effective September 15, 2009, all FASB standards are now contained in what is termed the Accounting Standards Codification. The guidance provided originally in SFAS 158 is now contained in Section 715-20 of the FASB Accounting Standards Codification. For purpose of historical accuracy, we will continue to refer to this and SFASs by their original pronouncement numbers.

2 Pension plans can be divided into two broad types: (1) defined benefit and (2) defined contribution. A defined benefit plan guarantees a retiree a certain payment per year. The amount is determined by a formula that can incorporate the employee's pay, years of employment, age at retirement, and other factors. As a result, accounting for these plans must charge an amount to the annual expense provision that takes these factors into consideration. A defined contribution plan provides for an individual account for each participant, and benefits are based solely on the amount contributed to the account, plus or minus income, gains, expenses and losses allocated to the account. As a result, the amount of pension expense to the employer is the amount contributed each year.

3 Creating cookie jar reserves is an accounting practice in which a company records extra expenses in good years thereby creating reserves to offset losses that might be incurred in bad years. The usual result of cookie jar accounting is a smoothing of net income over the course of several years.

4 In this context, an acceptable actuarial cost method should be rational and systematic and should be consistently applied so that the cost is reasonably stable from year to year.

5 The provision of the Pension Protection Act of 2006 generally require payment of the normal cost, which is the increase in obligation during the current year, and a seven-year amortization of any underfunding of the obligation incurred for employee service prior to the adoption of the plan or any amendments to the plan. This may impact future cash flows by requiring plan companies to contribute larger amounts to their pension plans (Hagan, Blais, and Gunning, 2006).

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DEBITS AND CREDITS THROUGH FINANCIALS: A VERY QUICK "NUTS AND BOLTS" INTRODUCTION/REVIEW OF THE ACCOUNTING PROCESS

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ABSTRACT

This reading and short case is designed to facilitate the rapid development of a basic understanding of the accounting process in motivated and mature students. The approach of merging case and textbook instruction has been used successfully with MBA students in a team-based program. This approach has eliminated the requirement for prerequisite coursework, or a leveler course, and has insured that all students have a relatively common basic understanding for more advanced subsequent coursework. For students who have completed a financial principles course, but do not use accounting in their career, the reading and case provide a good review. It also provides a useful tool, for students who have extensive accounting knowledge entering the class, to help team members learn the accounting model and basic accounting concepts.

We will take a very practical, "nuts and bolts" approach and progress rapidly from the beginning of the process: transactions and debits and credits, through a conceptual understanding of the types of accounts and their reflection in the financial statements. This will include cash revenue and expense transactions as well as deferral and accrual transactions. We will not repeat concepts or provide extensive explanations or examples. We will, however, explain, in plain, simple English, the financial accounting model from start to finish and we will do this in twenty pages or less.

Purpose and Goal of Reading and Short Case

It is commonly stated that business managers and investors, in general, need to know how to read financial statements. But, what is meant by "read" financial statements? You have known how to read for quite a few years. All of us learned to "sound-out" words and recognize numbers in elementary school. What we really want to be able to do is read, analyze, and interpret financial statements in order to make good business and investing decisions. The authors believe that you need to understand the process by which business activity is tracked, recorded, accumulated, and presented in financial statement form, in order to know what you are reading. In simple terms, the statements present a picture the business. The statements tell you the story of the company: where it has been, where it is,

and where it is going. You may have heard the phrase: accounting is the language of business. It is the method we use to communicate a company's financial position (balance sheet), the results of its operations (income statement), and its cash flows in and out (cash flow statement).

After completing this reading and case, you will be ready to start practicing reading, analyzing, and interpreting financial statements. This is the next step toward learning to effectively use financial information to make business and investing decisions.

Two Things to Memorize (Only Two) --- Everything Else Is Common Sense and Understanding Business Transactions

The accounting language utilizes a very simple mathematical model. There is a lot of confusion about the meaning and use of the basic components of the model: debits, credits, assets, liabilities, equity, revenue, and expense. This confusion results in a large number of people finding the study of accounting to be intimidating, difficult, or impossible, and extremely frustrating. If you are one of those people, let us put your mind at ease. If you learn, accept, internalize, and then use a few basic definitions, accounting becomes simple. Although many people believe that accounting requires a lot of memorization, there are two, and only two, things that must be memorized. The remainder of the model, then, makes sense intuitively.

DEBIT = LEFT

(Abbreviated DR) (Put it on the left side.)

The relative weight of debt and equity is represented by the accounting equation: Assets = Liabilities + Equity. Thus, the percent of debt is simply Total Liabilities divided by Total Assets, and the percent of equity is Total Equity divided by Total Assets. *The weights should be based on the market value of the assets, liabilities, and equity.*

For publicly-traded companies, the best measure of current market value of equity is the current stock price times the number of shares outstanding. *Recall that the outstanding shares are those that have been issued by the company and have not been reacquired as treasury stock.* This is the company's market capitalization and should be used to determine the percent of equity in the WACC calculation. *For non-public companies, the share price of recent stock issuances or trades may be used as a proxy for market value. In cases where there has been no stock activity, a subjective estimate of stock value or historical values may be used.*

Total Equity = Market Price per Share * Number of Shares Outstanding

For debt, the best measure of current value would be the discounted present value of future payments due (both interest and principal) at current interest rates (using the company's current bond rating to adjust for risk). It may be necessary to consider this approach under certain conditions (e.g.: companies in financial distress). However, for most companies, this (more accurate) calculation of the market value of debt produces a result very close to the current book value of debt. Thus, absent unusual conditions and for ease of computation, the book value of total liabilities9 is most often used *as a proxy for the market value of debt* in the WACC calculation.

Total Debt = Book Value *(Proxy for Market Value)* of Total Liabilities

Thus, the *market* value of total assets used in the WACC calculation is equal to total debt plus total equity.

Total Assets = Total Debt + Total Equity

*T*he debt percentage and equity percentage can be computed *as follows*.

Debt % = Total Debt / Total Assets

Equity % = Total Equity / Total Assets

Once the appropriate percentages for debt and equity have been determined, it is necessary to determine the cost of debt and the cost of equity.

Cost of Debt: The After-Tax Interest Rate on Debt

9 It can be argued that this should only include interest-bearing debt, since it is only such debt that incurs an interest expense for the firm. However, it also can be argued that non-interest-bearing debt should be included in the total. While doing so does lower the company's total cost of debt, it better represents the actual impact on the firm from holding all types of debt. Consider two firms: A holds only non-interest-bearing debt and B holds only interest-bearing debt. Does it not follow that the market value of firm A's equity should be higher than for firm B?

The cost of debt represents the net interest expense to the company for its borrowed resources. Since interest expense is tax deductible, the cost of debt is the company's after-tax interest expense, which is the total interest expense times one minus the company's tax rate. *For example: Assume a company has a 5% average interest rate before tax and is in a 40% tax bracket. If the average debt is $100 million, interest expense will be $5 million. Deducting the interest from taxable income will result in a tax savings of $2 million (40%). The after-tax cost of financing is$3 million or 3%.*

Cost of Debt = Interest Rate * (1 – Tax Rate)

When computing the cost of debt, two issues must be addressed: what interest rate and what tax rate should be used? As to interest rate, one approach would be to determine the company's marginal interest rate – the rate it would pay if additional debt was incurred. While this may be appropriate to evaluate whether the company should make additional capital investments, it does not capture the *current* debt relationship for the company as a whole. Another approach would be to compute a *weighted average* rate based on the stated interest rate for each of the interest-bearing debt instruments. However, this approach does not recognize the benefit from the use of non-interest-bearing debt. An *effective and simple* easy way to address both of *these* issues is to *estimate* the interest rate as total interest expense divided by total liabilities. *For most companies, this will yield an interest rate which appears to be very low, because it factors in both interest bearing and non-interest bearing debt.*

Interest Rate = Total Interest Expense / Total Liabilities

Similarly, for the tax rate, while the marginal tax rate could be used *to evaluate whether the company should make additional capital investments*. *Our* present use of WACC will be to compute the value of the company as a whole. The tax rate used should represent the tax cost to the company as a whole. This *is* the company's average tax rate, which is most easily computed as the company's tax expense divided by its reported income before taxes.

Tax Rate = Total Tax Expense / Income before Tax

Cost of Equity: The Capital Asset Pricing Model (Capm)

That last item to be determined*, to compute WACC,* is the cost of equity, for which we use the Capital Asset Pricing Model (CAPM). This model states that the expected return to a company's equity holders is equal to the risk-free rate of return plus the *risk* premium for the market as a whole adjusted for the company's individual riskiness. The company's individual riskiness is measured by the beta coefficient in the CAPM regression model (more fully explained below).

Expected Return (Cost of Equity) = Risk-Free Return + (Beta * Market *Risk* Premium)

Historically, U.S. Treasury securities have had the lowest risk of default of any securities available for investment. Thus, U.S. Treasury bond rates *typically* are used to measure the risk-free return. *T*he bond's term ~~is~~ *should be* matched to the investment holding period*. S*ince valuation models assume an indefinite holding period, *we use the longest available term bond rates,* 30-year*. The risk-free rate is, in theory, composed of a "fair" or "true" return plus expected inflation.*

Risk-Free ~~Rate~~ *Return* = 30-Year U.S. Treasury Bond Rate

The market r*isk* premium is the expected return on the market as a whole less the risk-free return. It is a measure of the additional return that equity holders require because of the higher riskiness of the market as compared to *a* risk-free investment. Historically, the market *risk* premium has been 5% - 7%.

Market ~~Return~~ *Risk* Premium = Market Return – Risk-Free Return

The beta coefficient is the covariance of a company's stock returns over time relative to the market as a whole. That is, it is the regression coefficient from a linear regression of the company's stock returns on an appropriate market index (the S&P 500 Index or the NYSE Composite Index are often used). Beta is a proxy for the company's individual riskiness relative to the market. Since a regression of a market index to the same market index produces a beta of 1.0, then a beta of 1.0 indicates that a company has the same level of riskiness as the market. A beta greater than 1.0 indicates a higher level of risk, and a beta less than 1.0 indicates a lower level of risk – as compared to the market as a whole. Beta for any particular company is available from a variety of public sources, such as Yahoo Finance *or MSN Finance*.

Beta = Proxy for Individual Company's Riskiness Relative to the Market

The weighted average cost of capital (WACC) is the rate that this company must earn on its assets in order to satisfy the expectations of both debtors and investors. If the Company earns this return on assets, the stock value will not be expected to change. Earnings in excess of WACC would be expected to increase share value and earnings below WACC would be expected to decrease share value.

EQUITY VALUATION OF PUBLICLY-TRADED COMPANIES

Finance theory *suggests that* the value of *any asset is* ~~as~~ the discounted present value of its future cash flows. *This is certainly is true for the value of a share of a company's stock. In order to calculate discounted present value of a company* you *need to* know three things:

1. The projected (future) annual cash flows of the company.
2. The time horizon over which the company will earn those future cash flows.
3. An interest rate appropriate for discounting the cash flows to their present value.

Absent information that suggests differently10, the best estimate of a company's future cash flows is its current cash flows. But which cash flows? Cash dividends paid to stockholders? The change in cash from last year to this year? Cash flows from operating activities?

To compute equity value, *a good* measure of future cash flows *can be obtained by* multiply*ing* the company's income from operations before tax times one minus its tax rate and add*ing* depreciation expense. This represents the cash generated by the company's productive assets available to meet the needs of all resource providers (both debt and equity).

Projected Annual Cash Flows = [Income from Operations before Tax * (1 – Tax rate)] + Depreciation

Once future cash flows have been measured, an appropriate time horizon also must be determined. But what time horizon should be used? A relatively short term of 5 to 10 years? A longer term of 20 to 50 years? Indefinitely?

The purchase of a company's stock is the ownership of all of its future cash flows in existence as the time of the purchase. Likewise, the sale of a company's stock relinquishes the ownership of all of its

10 There may be circumstances when it is not wise to use current cash flows as a predictor of future cash flows. In those times, analysts must specifically forecast future cash flows. Examples include firms in financial distress or firms that have acquired or created a new line of business.

future cash flows in existence at the time of the sale. Both of those events suggest an indefinite time period.

A benefit of an indefinite time period is that the present value of the cash flows can be based on an economic perpetual bond, which is the recurring payment to be received divided by the interest rate used to discount those cash flows. *This makes sense intuitively: Assume cash flows of $10 million and a 10% interest rate. The present value of the future cash flows will be $100 million ($10 / 10% = $100). Reversing the math: if you have $100 million invested at 10% interest, the investment will yield $10 million in perpetuity.*

Present Value of Future Cash Flows = Projected Annual Cash Flows / Interest Rate

That leaves the question: what interest rate to use? Remember, projected annual cash flows were defined as *the cash generated … to meet the needs of all resource providers (both debt and equity)*. ***(These italics are David's – keep.)*** This suggests that the interest rate should be a blended rate that includes the return on investment required by both debt providers and equity holders. The weighted average cost of capital (WACC) is such a blended interest rate. Substituting WACC in the above formula, the value of a company's assets (the present value of its future cash flows) is equal to the company's projected annual cash flows divided by WACC.

Company Assets Value = Projected Annual Cash Flows / WACC

The general form of the valuation model assumes no growth. A (constant) growth rate can be easily incorporated in the model by adjusting both the projected annual cash flows and WACC. The cash flows are increased for the expected growth, and WACC is decreased by the growth rate. *This will result in a higher asset value. This makes sense intuitively: If cash flows are increasing due to growth, the required return from earnings can be reduced by the amount of that growth. Note that growth in cash flows can be positive or negative. A negative growth rate will result in lower projected cash flows, a higher discount rate and a resulting lower asset value.*

Company Assets Value = (Projected Annual Cash Flows * (1 + Growth Rate)) / (WACC – Growth Rate)

Using Equity Value to Evaluate Current Stock Price

Both forms of the valuation model compute the market value for the company as a whole. We know from the accounting equation that assets equal liabilities plus equity.

Assets = Liabilities + Equity

From which we can confidently state that the company's market value equals the market value of its debt plus the market value of its equity.

Company Assets Value = Debt Value + Equity Value

Since we now *have made an independent estimate of* the value of the company assets, and we know the value of its debt from the WACC calculation, we can easily compute the value of its equity as company assets value less debt value.

Equity Value = Company Assets Value – Debt Value

Once we determine equity value, it can be divided by the number of shares of stock outstanding to compute the value of the company's stock.

Stock Value per Share = Equity Value / Number of Shares Outstanding

This estimated market value *per share* can be compared to the current market value of the company's stock to determine if the company is appropriately valued, undervalued, or overvalued.

EXHIBIT 1: WACC CALCULATION EXAMPLE

Total Assets (Book Value)	$ 350 Million
Total Liabilities (Book Value)	$ 220 Million
Total Equity (Book Value)	$ 130 Million
Sales	$ 340 Million
Depreciation Expense	$ 35 Million
Interest Expense	$ 15.4 Million
Tax Expense	$ 19 Million
All Other Expenses	$ 240.9 Million
5 year treasury bond	2.8%
10 year treasury bond	3.9%
30 year treasury bond	4.6%
Beta	1.40
Market Return Premium	6%
Shares issued & outstanding	32 million
Market value per share	$ 17.00

Total Equity	= $17 per share * 32 million shares =	$ 544.0 Million
Total Debt	=	$ 220.0 Million
Total Assets	= $220 million + $544 million =	$ 764.0 Million
Debt %	= $220 million / $764 million =	28.8%
Equity %	= $544 million / $764 million =	71.2%
Interest Rate	= $15.4 million / $220 million =	7.0%
Tax Rate	= $19 million / $(340 – 35 – 15.4 – 240.9) million =	39.0%
Cost of Debt	= 7% * (1 – 39%) =	4.27%
Cost of Equity	= 4.6% + (1.40 * 6%) =	13.0%
WACC	= (29% * 4.27%) + (71% * 13%) =	10.49%

The 10.5% value for WACC is the rate that this company must earn on its assets in order to satisfy the expectations of both debtors and investors. If the Company earns 10.5% return on assets, the stock value will not be expected to change. Earnings in excess of 10.5% would be expected to increase share value and earnings below 10.5% would be expected to decrease share value.

EXHIBIT 2: EQUITY VALUATION OF A COMPANY

***Valuation* Assuming No Growth in Cash Flows**

Income from Operations before Tax	= $(340 – 35 – 15.4 – 240.9) million =	$ 48.7 M
Projected Annual Cash Flows	= ($48.7 million * (1 – 39%)) + $35 million =	$ 64.7 M

Company Value	= $64.7 million / 10.5% =	$ 617.0 M
Equity Value	= $617.02 million – $220 million =	$ 397.0 M
Equity Value per Share	= $397.02 million / 32 =	$ 12.41

Since the computed value per share ($12.41) is less than the stock price ($17.00), you might conclude that the company is overvalued by the market. However, that is true only if you accept the no growth assumption. Alternatively, if you reject the no-growth assumption, this result suggests that the stock price includes an implicit growth rate. The questions then are: (1) what growth rate is included in the stock price, and (2) do you agree with the market's assumed growth rate?

***Valuation* Assuming 5% Growth in Cash Flows**

Growth Adjusted Cash Flows	= 64.70 million * (1 + 5%) =	$ 67.94 M
Growth Adjusted WACC	= 10.5% - 5.0% =	5.5%
Company Value	= 67.94 million / 5.5% =	$ 1,238.37 M
Equity Value	= 1,238.37 million – 220 million =	$ 1,018.37 M
Equity Value per Share	= 1,018.37 million / 32 =	$ 31.82

To address the above questions, you might first test a particular growth rate, say 5%. Since the computed value per share ($31.82) is more than the stock price ($17.00), you might conclude that the company is undervalued by the market – if you accept the assumption that the growth rate is at least 5%. Alternatively, if you reject the 5% assumption, this result suggests that the stock price includes an implicit growth rate between 0% and 5%. We can use the valuation model to solve for the implicit growth rate.

***Approximating* the Implicit Growth Rate**

Actual Growth Adjusted WACC	= 64.70 million / 764 million =	8.47%
Implicit Growth Rate	= 10.5% - 8.47% =	2.02%

The implicit growth rate is computed by (1) dividing projected annual cash flows by total assets, and (2) subtracting the resulting percent from WACC. *(The cash flows should be adjusted by the growth rate prior to dividing by the total assets to obtain the actual implicit growth rate.)*

To test the implicit growth rate, we compute the value of the company:

Valuation* Assuming 2.02% Growth in Cash Flows *(Proof)

Growth Adjusted Cash Flows	= 64.70 million * (1 + 2.02%) =	$ 66.01
Growth Adjusted WACC	= 10.5% - 2.02% =	8.47%
Company Value	= 66.01 million / 8.47% =	$ 779.41
Equity Value	= 779.41 million – 220 million =	$ 559.41
Value per Share	= 559.41 million / 32 =	$ 17.48

Since that value ($17.48) is *approximately* equal to the stock price ($17.00) we are confident *with our estimate* that the growth rate used by the market to value the company is approximately 2.02%.

WACC / CAPM PROBLEM

With the knowledge necessary to use the CAPM model to calculate WACC, and to use WACC to calculate a company's value, it is time to apply that knowledge. Assume that you find the following information in Waacky Company's financial statements and at Yahoo Finance. Use the information to answer the questions listed below.

(all amounts in 000)	12/31/2009	12/31/2008
Total Assets	$ 210,000	$ 190,000
Total Liabilities	$ 100,000	$ 90,000
Total Equity	$ 110,000	$ 100,000
Sales	$ 140,000	$115,000
Depreciation Expense	$ 35,000	$ 30,000
Interest Expense	$ 6,000	$ 5,400
Tax Expense	$ 9,000	$ 2,400
All Other Expenses	$ 75,000	$ 70,000
5 year treasury bond	2.8%	3.1%
10 year treasury bond	3.9%	4.0%
30 year treasury bond	4.7%	4.9%
Beta	1.35	1.30
Shares issued & outstanding	50 million shares	50 million shares
Market value per share	$10.00	$14.00

1. What is the before tax cost of debt? % _____
2. What is the cost of equity? % _____
3. What is the weight of debt? % _____

4. What is the weight of equity? %

5. What is the WACC? %

6. What is the annual cash flow? $ total

7. What is your estimate of the total market value of the assets? $ total

8. What is your estimate of the market value per share? $ / share

9. What were dividends for 2008? $ total

10. Assuming 3% future growth, what is your per share value estimate? $ / share

11. What is the implied growth rate? (Based on the current market value.) %

Please contact authors for references

USING AN UNUSUAL DATA SET TO INTRODUCE STUDENTS TO TIME-SERIES FORECASTING IN A COLLEGE-LEVEL STATISTICS COURSE

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ABSTRACT

Sometimes it happens that data sets arise from activities not usually associated with professional or academic areas of research. Throughout modern history there have been people who have kept phenological records of events that occur periodically. Weather records during our nation's colonial period come to mind. This paper describes the use of an unusual data set in introducing students to time-series forecasting. The data set consists of a continuous record, from 1917 until 2009, of the dates and times of ice breakup in the Tenana River near the town of Nenana, Alaska. This paper will describe how regression, both simple and polynomial, and moving average methodologies can be taught using this data set. An assessment of these two methodologies, regression and moving averages is presented. Suggested ideas of how this time series analysis can be used to spark a discussion of possible climatic change is included. The historical background and significant social events surrounding the Tenana River ice breakup tradition will augment the technical discussions.

INTRODUCTION

Teachers of statistics are constantly on the lookout for data sets that help make their classes interesting to their students. The two themes developed in this paper are, that the data set will provide a useful and interesting example that can be used to introduce students to time-series forecasting, and that teachers may find the data set helpful in discussing the topic of possible climatic change. The data set provides teachers with both these opportunities.

Theme one will illustrate the use of least squares regression (simple and polynomial) and the use of the moving average method in analyzing the time series.

The second theme will briefly outline how the time-series equations illustrate periods of possible warming and cooling in this region of Alaska.

Readily accessible sources of the ice-breakup data for professors , researchers, and students include the web site of the National Snow and Ice Data Center (NSIDC) located at the University of Colorado at Boulder, CO and the web site of the ice-classic itself. The data file from NSIDC covers the period 1917 to 2003 inclusive. The dates and times for ice breakup from 2004 to 2009 inclusive were obtained from the ice classic log at http://www.nenanaakiceclassic.com/current.html. The data set is also available from the author. The data set consists of the following variables: year, Julian date, and calendar date and

time of the ice breakup. Note that the use of the 'Julian date' as used by the Nenana Ice Classic personnel refers to the number of days since January 1st of each year.

Using regression to analyze the time series

The first illustration of analyzing a time-series makes use of least squares regression, specifically applying simple linear, quadratic, cubic, and fourth-degree models. Figures 1 - 4 in the appendix show the time series charts along with their respective prediction equations and coefficients of determination, R^2. These equations and R^2 values are listed in Table 1.

Table 1. Prediction equations and coefficients of determination for four regression analyses.

Model	Prediction Equation	Coefficient of Determination
Linear	y = -0.0723x + 128.63	R^2 = 0.1077 p-value = 0.001
Quadratic	$y = -0.0011x^2 + 0.0336x + 126.96$	$R^2 = 0.1227$
Cubic	$y = -2E\text{-}05x^3 + 0.0021x^2 - 0.0892x + 127.94$	$R^2 = 0.1262$
Fourth-degree	$y = 2E\text{-}06x^4 - 0.0005x^3 + 0.0297x^2 - 0.6715x + 130.81$	$R^2 = 0.1473$

Discussion of the regression results

The question of whether regression is the best tool to analyze this ice-breakup data is hard to answer. Regression is but one tool that can be utilized. The results of the regressions listed in Table 1 show a weak R^2 for all of the four models. However, for the statistics teacher interested in teaching the concept of model building, the increase in this coefficient from the simple linear model to the fourth degree model offers an illustration of model improvement.

Graphs of the time-series with their respective regressions are included in the appendix. When one looks at the time series charts the up and down oscillations certainly mask any discernable trends but the regression lines offer hints of a gradual change to earlier dates of ice breakup. Indeed the p-value for the slope in the simple linear regression is 0.001.

There is a statistically significant decrease in the Julian date of the ice breakup. Is this evidence of climatic warming? One cannot say for sure, but this data seems to lend support to the idea. Can we see periods of cooling or warming? The graph showing the cubic equation gives us a hint. The regression line decreases slowly from time period 1 (1917) until roughly time period 30 (1946 or so.) Then a period of relatively constancy persists until about time period 50 (1966.) From that time forward until the present, the regression curve shows a steady decrease in the date of breakup occurs. However, the

chart with the fourth-degree equation provides evidence that the recent few years have seen a gradual increase in the dates.

While these charts and their equations suggest periods of warming and cooling, they are not conclusive. But the point of this paper and its analyses is to offer the statistics professor some food-for-thought for a classroom exercise or homework assignment.

Using moving averages to analyze the time series

The moving averages method or tool represents another way to smooth a time-series and to forecast a future value. The context of the data and the experience of the analyst, together, offer a guide as to which time span might be used? The present data set contains data recorded once per year. Without prior guidance, this paper will compare two smoothing methods, one using a three-year moving average and the other with a five-year moving average.

Forecast accuracy is typically assessed by computing any one or more of three commonly used measures: the mean square deviation, MSD, the mean absolute deviation, MAD, and the mean absolute percentage forecast error, MAPE. The mean square deviation, MSD, was calculated for each of the two moving averages and are displayed in table 2.

Table 2. Values of the Mean Square Deviation, MSD for two moving average smoothings.

Time span	MSD
Three-Year Moving Average	40.727
Five-Year Moving Average	38.984

Since the MSD for the five-year moving average is the lower of the two values, one would conclude that its forecast would be the more accurate one. Of course, the statistics teacher may want to try other time periods in addition to a three- and a five-year moving average. This paper means to show two examples that could be supplemented in the classroom.

The forecasts

Each method discussed herein enables the analyst to make a forecast of next year's date of ice breakup. Table 3 lists the forecasted dates for each method.

Table 3. Forecasted dates of ice breakup an the 95% prediction interval for each time-series analysis.

Method	Predicted date	95% prediction interval
Simple Linear Regression	121.8339	110.3690 – 133.2988

Quadratic Regression	120.1573	108.4150 – 131.8996
Cubic Regression	119.1698	106.9337 – 131.4059
Fourth-Degree	122.0382	109.2802 – 134.7963
Three-Year Moving Average	122.4913	N A
Five-Year Moving Average	121.7408	N A

The predicted dates all fall within two to three days of each other. The 95% prediction intervals are widest for the fourth degree regression and narrowest for the linear regression. yet the R^2 is highest for the fourth degree regression. Of course, this paper is not an exhaustive study of all possible methods. Missing is an analysis of the data using single, double, and triple exponential smoothing methods. Suffice it to remember that the purpose of this paper is illustrate the use of an unusual data set that may be used by statistics teachers as they introduce their students to time-series analysis and forecasting.

A note about Phenology

Phenology derives from the Greek word phainoma which expresses the notion of appearing or coming into view. It is a scientific study of recurring events like the annual date of flower blooming, the first appearance of certain birds in the spring. Historical records of crop harvests, such as grapes, have enabled investigators to determine climate changes. This paper illustrates how a reliable, well-kept record of ice breakup may provide useful evidence to the debate over climatic change.

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Figure 1

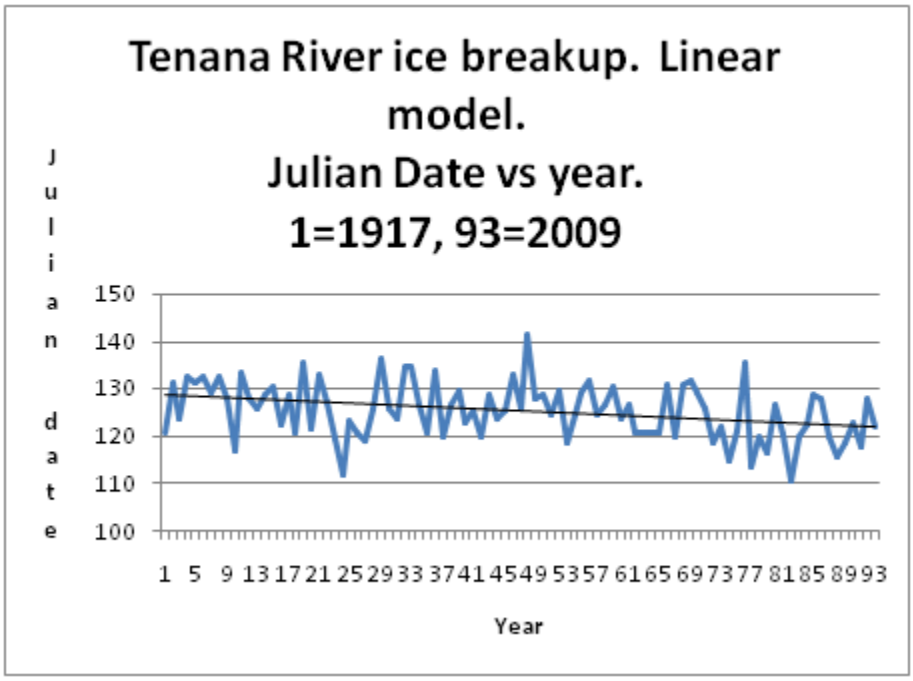


Figure 2

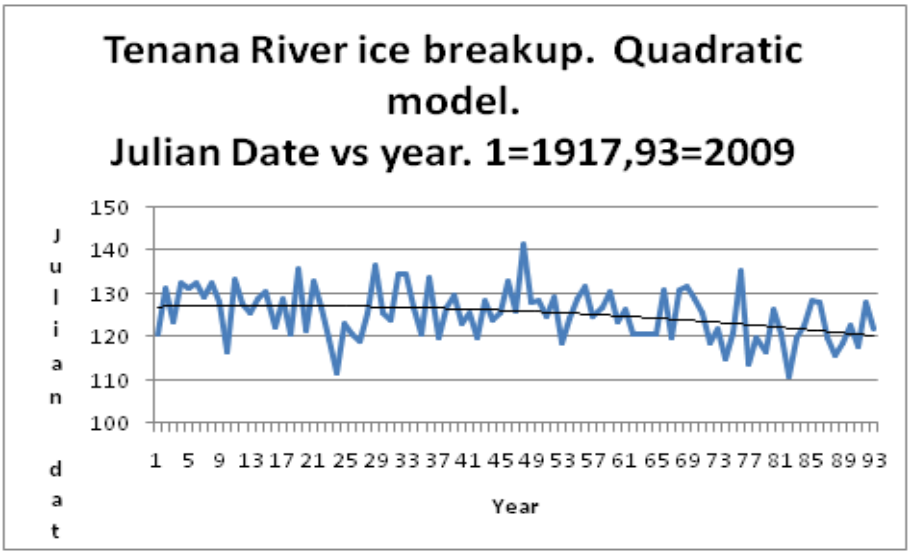


Figure 3

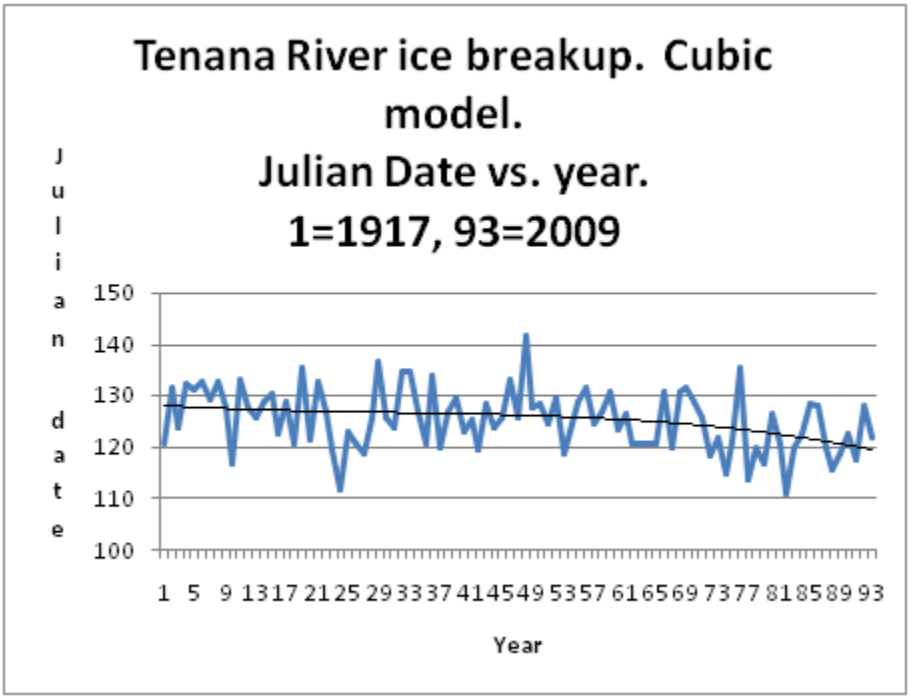
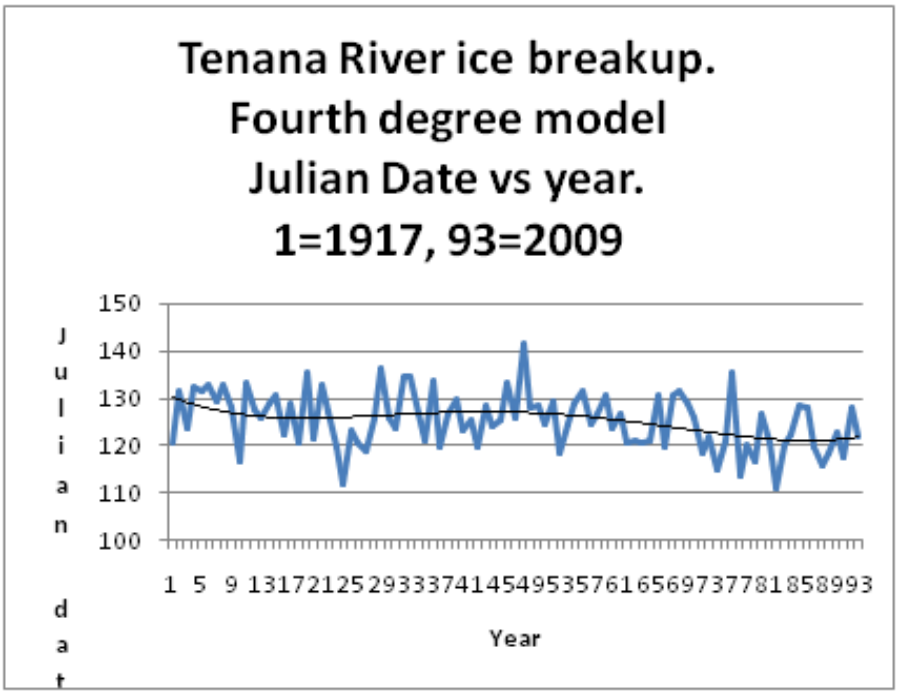


Figure 4



BUSINESS COURSE DESIGN PREFERENCES: ARE FACULTY AND STUDENTS EVER ON THE SAME PAGE?

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ABSTRACT

Prior to every term, students make decisions regarding the courses they wish to take. Some of these courses are required and some are electives, while some have only one instructor and others offer a choice of instructors. As registration proceeds, students make judgments about the specific courses and specific teachers using grapevine information regarding course design and presentation style. Registration demand thus serves as an indirect measure of preference in course design. When the course is nearly complete, students typically have the opportunity to provide feedback on the course evaluation. However, as one of the important stakeholders in the decision process, the student seems to have little direct input into the course design process. While some would argue that students shouldn't have direct input, others would argue that some of the decisions about the course could be moved more into the student stakeholder arena. Meanwhile, the faculty members also have expectations regarding the content and rigor of the courses they teach. As faculty reflect on the educational process that prepares students for employment they routinely make course design choices that have the potential to impact student perceptions of content, rigor, and instructional quality. Some

of these expectations would be reflected in the academic courses that students have taken and the strength and variety of student talents developed during their academic training.

In this paper, fourteen controllable course design features are ranked using survey data from large samples of business students and business faculty. Features such as attendance policy, delivery style, test format, grade expectations, group work requirements, grading weights, etc. are ranked according to perceived value by both students and faculty along with intensity preferences for implementing each course design feature. The analysis is intended to provide input for faculty with respect to course design procedures that have the potential to improve student satisfaction, while also balancing student and faculty goals.

STUDENT VIEWPOINTS TOWARD THE CHARACTERISTICS OF EXCELLENT COLLEGE PROFESSORS: A DEMOGRAPHIC ANALYSIS

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ABSTRACT

Qualities/characteristics of excellent, face-to-face, full-time, undergraduate, four-year college professors cited in the empirical literature were compared to qualities/characteristics identified by a focus group of 10 professors who had won a campus-wide teaching excellence award and were found to be remarkably similar. The results of a survey of 293 students revealed many of the same qualities as being good indicators of excellent college teaching. Student demographic characteristics were cross-tabulated with qualities gleaned from the secondary research and focus group and analyzed via chi-square analysis. Numerous significant differences ($p < .05$) were found between gender, religious preference, home state, major, age, academic classification and athletic status. Specific qualities for particular target student segments were provided for educators to move toward becoming more "excellent" professors.

Keywords: College teaching excellence characteristics

Introduction

Much has been written about teaching excellence. However, a large portion of the published research has been centered on qualities of excellent teaching as related to specific categories of students (i.e., K – 12, community college, commuter, graduate, online), particular fields (especially health, mathematics, science, education) and explicit situations (i.e., online teaching, adjunct or part-time instructors). Surprisingly, only a small number of empirical articles have appeared in the academic literature regarding the qualities/characteristics of excellent, face-to-face, full-time, undergraduate, four-year college professors.

Literature review

An extensive review of the literature revealed fewer than 10 recent "scholarly" articles which specifically examined the characteristics of teaching excellence by face-to-face, full-time, undergraduate, four-year college professors. The popular press did contain a significantly larger number of articles though most were anecdotal or referred to the empirical studies already cited.

A content analysis was performed on these secondary data gleaned from these seven scholarly articles. Holsti (1969) defined content analysis as "any technique for making inferences by objectively and systematically identifying specified characteristics of messages." Each article was meticulously read and each characteristic of excellent teaching was noted. Arnon and Reichel (2007) listed 58 qualities; Onwuegbuzi et al 46 and Azer (2005) 44. Moreover, Helterbran (2008) noted 26 characteristics of excellent teaching while Vallance (2000) found 19. In his classic article, Loadman (1976) found 19 characteristics ordered by importance. Sander, King and Coates (2007) found five characteristics (in order of importance – teaching skills, approachableness, knowledge, enthusiasm and organization) that contributed most to excellent college teaching.

As can be seen in Table 1, the characteristic "knowledgeable" was contained in all seven articles. Being "prepared and organized" was noted by six of the authors as a quality of excellent teaching. Being "passionate," "approachable" and a professor who "communicates effectively" were contained in five of the seven articles. It is interesting to note that the content analysis revealed that the "top" four were also four of the five identified by Sander, King and Coates (2007). As noted above, Sander, King and Coates found that the most important characteristic of an excellent teacher was "teaching skills." While the other six articles did not list "teaching skills" as a distinct trait, it would seem reasonable that "teaching skills" would include "communicates effectively" which was in the top five!

Over thirty years before the Sander, King and Coates study, Loadman (1976) had explicitly identified a similar top three – "knowledge of the subject matter," "ability to communicate knowledge," and "good course organization." One could argue that Loadman's "ability to interest and motivate students" was the same concept as being "passionate." Loadman did differ from Sander et al in that he listed "approachability" as number 16 while Sander et al had the characteristic at number five.

Table 1. Top 17 Characteristics of Excellent Professors from the Literature Review

RANK	# of Articles	Characteristic of Excellent Professor (in # of articles then alphabetical order)
1	7	Knowledgeable
2	6	Prepared and Organized
3	5	Passionate
3	5	Approachable
3	5	Communicates Effectively
6	4	Caring
6	4	Encouraging
6	4	Enthusiastic

6	4	Interesting
6	4	Love Teaching
6	4	Motivated
12	3	Committed to the Growth of their Students
12	3	Good listener
12	3	Have a sense of humor
12	3	Knowledgeable of teaching methods
12	3	Leader
12	3	Respect

Purpose of the study

The purpose of this study was to ascertain the viewpoints of four-year, full-time college students regarding the characteristics that constitute excellent teaching by college professors and to analyze the difference in viewpoints based on the following student demographic variables – (1) gender, (2) age, (3) marital status, (4) academic status (full or part-time), (5) ethnic background, (6) athletic status, (7) personal annual income, (8) year in college, (9) employment status, (10) religious preference, (11) home residence, (12) current living situation, and (13) academic major.

Exploratory/qualitative research – The focus group

To determine questions for this survey instrument (in addition to those identified in the literature review) and to ascertain that the salient characteristics of excellent teaching were accurately determined in the literature review, a focus group was conducted. A focus group may be defined as a group of six to twelve participants lead by a moderator (using a discussion guide – a written outline of topics to be covered) in an in-depth discussion of a particular topic. The 10 participants in this focus group were professors who had previously won a campus-wide Excellence in Teaching Award.

Ten of the characteristics identified by the focus group participants matched directly with 10 of the top 17 characteristics of "excellent" professors as noted in the articles – (1) knowledgeable, (2) organized, (3) passionate, (4) approachable, (5) excellent communication skills, (6) encouraging, (7) enthusiastic, (8) motivating, (9) committed to students, and (10) respectful toward students. Five other characteristics identified by the focus group matched somewhat with those found in the articles – (1) caring = helpful/trusting, (2) interesting = engaging, (3) love teaching = love/committed to discipline, (4) good listener = excellent nonverbal and listening skills, and (5) leader = integrity. Additional characteristics identified by focus group participants included (1) always learning, (2) excellent presentation skills, (3) truthful, (4) fairness in grading, (5) realistic expectations, (6) rigorous, (7) dedicated, (8) flexible, (9) friendly, (10) open-minded, (11) personality (relationships), and (12) ability to say "I don't know."

Table 2. Comparison of Characteristics of Excellent Professors from Articles and Focus Group

Characteristics from Articles (in order of most to least)	Characteristics from Focus Group that Match those from Articles
Knowledgeable	Knowledge
Prepared and Organized	Organization
Passionate	Passionate
Approachable	Approachable
Communicates Effectively	Excellent Communication Skills
Caring	(Helpful) (Trusting)
Encouraging	Encouraging
Enthusiastic	Enthusiastic
Interesting	(Engaging)
Love Teaching	(Love) (Committed to Discipline)
Motivated	Motivation
Committed to the Growth of their Students	Commitment to Students
Good listener	(Excellent Nonverbal and Listening Skills)
Have a sense of humor	
Knowledgeable of teaching methods	
Leader	(Integrity)
Respect	Respect for students

The research instrument

The final questionnaire was compiled into a small booklet. The cover contained the title, "5-Star Professors: A Study on Excellent Teaching," a picture of a professor making a presentation to a class and the logos of the research sponsors. The first 42 questions were Likert-type (strongly agree to strongly disagree scale) statements and the next 45 questions were "characteristics" of excellent teaching (very important to not important at all scale) identified in the secondary research and by the focus group participants. Additionally, 13 demographic variables were collected – (1) gender, (2) age, (3) marital status, (4) academic status (full or part-time), (5) ethnic background, (6) athletic status, (7) personal annual income, (8) year in college, (9) employment status, (10) religious preference, (11) home residence, (12) current living situation, and (13) academic major. Finally, there was an open-ended question on the last page: "Using the space below, please tell us anything you wish about your experiences with excellent college teaching or characteristics you expect excellent college professors to possess."

The survey was pre-tested with a class of actual university students and changes were made based on that pre-test. More than 400 copies were printed, collated, folded and stapled.

Methodology, data collection and data entry

A modified stratified random sampling technique was utilized. Stratified random sampling may be defined as the process of separating the target population (N = 1,818 "traditional" students) into different groups (a large group of "undeclared" and 13 majors at the University), and selecting samples from each group. Of the 1,818 full-time, undergraduate students in the target population, 740 students or 41 percent had not officially declared a major. There were 1,078 members of the target population majoring in the 13 disciplines – Nursing had the most with 26 percent (N = 277), Business second with 12 percent (N = 128), Education third with 11 percent (N = 115) all the way to 13th place (Mathematics) with three percent (N = 31). In the next step, the number of students to survey in each major (and undecided) was determined. For instance, 26 percent of the Nursing majors (N = 277) or 72 should be sampled (277 X .26 = 72.02) followed by 16 Business majors, 13 Education majors and so forth to one Mathematics major (31 X .03 = .93). The majority of students surveyed would be the "undeclared" stratum which was found to be primarily freshmen and sophomores.

It was determined that 14 classes would be sampled (N = 293) – all of which would be freshman and sophomore courses (which had a proportionally number of juniors and seniors) – over a period of four days (Monday/Wednesday & Tuesday/Thursday classes) during the Fall 2009 semester. These classes included two in Nursing and Religion (all students required to take) and one in History, Biology, Mathematics, English and six others in various disciplines. Class size ranged from 14 students to more than 40 with the mean class size being about 25.

After the data were collected, the data were entered and checked. A simple test was utilized to determine if the data entry was done properly. The SPSS statistical package was utilized for data analysis.

Data analysis

A frequency distribution of the demographic data was conducted to ascertain representativeness of the sample and to determine if sufficient data existed for chi-square analysis (cross-tabulations of the Likert statements and characteristics of excellent teaching by demographics). Actual University data regarding six demographics were available including (1) gender, (2) ethnic background, (3) religious preference, (4) home residence, (5) declared major, and (6) athletic status. These were compared against the percentages from the sample and the two groups were remarkably similar suggesting high representativeness of the sample (see Table 3).

Table 3. Representativeness of the Sample

DEMOGRAPHIC CHARACTERISTIC	ACTUAL UNIVERSITY PERCENTAGES	PERCENT IN SURVEY
Gender		
Male	40%	37.9%
Female	60%	60.9%

Ethnic Background		
White (Caucasian)	75%	81%
African American	15%	14.6%
Other	9%	3.2%
Religious Preferences		
Baptist	51%	54.5%
Methodist	5%	4.3%
Catholic	4%	3.2%
Nondenominational	4%	19.9%
Other	28%	15.8%
Home Residence		
North Carolina	68%	67.2%
South Carolina	7%	7.5%
Georgia	5%	5.5%
Florida	4%	3.2%
Virginia	3%	4%
Other	11%	11.5%
Major		
Nursing	26.0%	26.1%
Business	12.0%	15.8%
Education	11.0%	9.1%
Physical Education, Wellness and Sports Studies	9.0%	9.5%
Fine Arts	7.0%	2.8%
Social Sciences	6.0%	4%
Athletic Status		
Athlete	25%	31.6%
Non Athlete	75%	66.4%

As can be seen from Table 3, males represented about 40 percent of the university's population and the sample had about 38 percent. Caucasian students were a bit overrepresented in the sample (81 percent compared to the university's 75 percent). However, African Americans were exactly represented (15 percent actual; 14.6 percent sample).

Religious preference was astonishingly similar between actual university percentages and the percent in the survey. Only nondenominational was significantly overrepresented. When "nondenominational" is added with "other" religious preference, the resulting combined percentage is quite similar to the university's calculation. The percentages for home (state) residence were extremely comparable for the top five states. Business and fine arts majors were somewhat overrepresented, but the other majors'

percentages in the sample were exceptionally alike actual university percentages. Finally, about one-third of the respondents were athletes. Therefore, athletes were overrepresented in the sample because the actual university percentage was 25 percent.

The remaining demographics of the sample (see Table 4) were typical of "traditional" college students. Only a few demographics differ from what was expected. For instance, about 13 percent of the respondents were 23 years old or older, less than two percent part-time students, a bit more than four percent employed full-time with about the same percentage with personal annual incomes over $30,000. Interestingly, more than two percent admitted to living with a significant other and almost six percent were married. A little more than half of the sample lived in the dorms.

Table 4. Remaining Demographics in the Sample

DEMOGRAPHIC CHARACTERISTIC	PERCENT IN SURVEY
Age	
18 OR YOUNGER	28.1%
19	28.5%
20	13.8%
21	9.5%
22	5.1%
23	4.7%
24 AND ABOVE	9.1%
Education	
Freshman	37.2%
Sophomore	22.5%
Junior	21.3%
Senior	13.0%
Fifth Year Senior	3.2%
Other	1.2%
Academic Status	
Full Time	96.8%
Part Time	1.6%
Employment Status	
Unemployed	37.2%
Part Time	33.6%
Full Time	4.3%
Seasonal Worker	16.2%
Other	6.3%
Personal Income	
$0 - $4,999	73.9%
$5,000 - $9,999	10.3%
$10,000 - $14,999	2.4%
$15,000 - $19,999	2.4%
$20,000 - $29,999	2.4%
$30,000 AND ABOVE	3.6%
Marital Status	
Single	88.5%
Living With Significant Other	2.4%
Married	5.5%
Divorced, Separated, Widowed	2.4%
Living Situation	
Dorm	51%
On-campus Apartment	23.7%
Off Campus Alone	14.2%
Off Campus with Roommate	14.2%

A statistical analysis could not be performed on four of the 13 demographic variables due to a single category containing the overwhelming majority of all respondents. These were (1) academic status with about 97 percent being full-time students, (2) marital status with about 89 percent of the respondents being single, (3) ethnic background with 75 percent White/Caucasian, and (4) personal income with about 74 percent earning less than $5,000 annually.

Findings

Frequency distributions were done and the top ten determined for the Likert statements (see Table 5) and the characteristics of excellent teaching (see Table 6).

Table 5. Frequency Distribution of the Top 10 Likert Statements

	Please circle the number to indicate the extent to which you believe each statement is characteristic of excellent college teaching.	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
1	I respect professors who respect me.	82.90%	13.90%	1.20%	2.00%
2	The best professors show a love for and a commitment to teaching.	80.50%	16.30%	1.60%	1.60%
3	When I go to class, I expect the professor to offer a productive learning experience.	79.60%	17.60%	1.60%	1.20%
4	A well-organized class is something I value.	64.50%	30.70%	4.40%	0.40%
5	I learn better when my professor has a sense of humor.	63.60%	32.00%	4.00%	0.40%
6	Enthusiasm is contagious, even if it is a class in which I have little interest.	63.30%	31.50%	3.60%	1.60%
7	An excellent professor challenges me to live up to my full potential.	60.90%	34.30%	4.00%	0.80%
8	Performing well in the classroom can carry over to success in life.	60.60%	34.10%	4.00%	1.20%
9	I admire professors who allow me to express my opinions even when he/she disagrees.	60.60%	36.90%	2.00%	0.40%
10	If I feel that I can trust a professor, I will express my opinions and questions freely in class.	58.80%	35.60%	4.40%	1.20%

As shown in Table 5, the top 10 “characteristics” of excellent professors as appraised (via agreement with Likert statements) by the student respondents were (1) showing respect for students, (2) showing a love for and a commitment to teaching, (3) offering a productive learning experience, (4) having a well-organized class, (5) having a sense of humor, (6) being enthusiastic, (7) challenging students, (8) preparing students for success in life, (9) allowing students to express opinions, and (10) trusting students so they would feel comfortable to ask questions.

These 10 "characteristics" were compared with those identified in the literature review (See Table 2) and six matched - #1, #2, #4, #5, #6 and #7. It seems reasonable that #3 – "When I go to class, I expect the professor to offer a productive learning experience," may be the same as "being prepared and organized" (#2 on Table 2). Likewise, #8 – "Performing well in the classroom can carry over to success in life," could be considered the same as #12 – "committed to the growth of their students" (See Table 2). Finally, both #9 and #10 (Table 5) could be analogous to #17 from Table 2 – respect.

Table 6. Frequency Distribution of the Top 10 Characteristics/Qualities

	Please circle the number to indicate the extent to which each characteristic is important to you in judging excellent college teaching.	Very Important	Somewhat Important	Not Very Important	Not Important At All
1	Cares about students as individuals	86.70%	10.80%	2.00%	0.40%
2	Helpful	84.90%	13.10%	1.60%	0.40%
3	Approachable	84.40%	13.20%	1.60%	0.80%
4	Intelligence	83.30%	13.50%	2.80%	0.40%
5	Positive attitude	81.30%	15.90%	2.00%	0.80%
6	Understanding	79.70%	17.50%	2.00%	0.80%
7	Reliable	78.40%	18.40%	2.40%	0.80%
8	Sees all students as equal	76.90%	19.50%	2.40%	1.20%
9	Motivating	75.30%	18.70%	5.60%	0.40%
10	Patient	74.80%	20.00%	4.80%	0.40%

As can be seen from Table 6, the top 10 "characteristics" of excellent professors rated as very important by students were (1) cares about students as individuals, (2) helpful, (3) approachable, (4) intelligent, (5) positive attitude, (6) understanding, (7) reliable, (8) sees all students as equal, (9) motivating, and (10) patient. These 10 "characteristics" were compared with those identified in the literature review (see Table 2) and eight of the 10 characteristics matched. Only #6 – "understanding" and #10 – "patient" did not have a precise counterpart identified in the articles.

Chi-square analysis was performed on the data to ascertain any significant differences between the viewpoints of (1) male and female students, (2) Baptist students and students expressing other religious preferences, (3) North Carolina students and students from other states, (4) students in different academic majors, (5) students of different ages, (6) students in different classes – freshman, sophomore, junior, senior, (7) athletes and non athletes, (8) employed and unemployed students, and (9) students residing in the dorms/on-campus apartments or off campus.

There were no significant differences between employed and unemployed students or students residing in the dorms/on-campus apartments and off campus. Below are the findings vis-à-vis the remaining seven demographic variables.

Table 7. Significant Cross-Tabulations of Gender and Characteristics of Excellent Teaching

Females Indicating the Characteristic of Excellent Teaching as VERY IMPORTANT		
Characteristic	Chi-Square Statistic	p-value (p < .05)
Good Listener	19.254	.000
Attentive	15.963	.001
Christian	14.814	.002
Humane	12.336	.006
Continuously Seeking Ways to Improve	10.952	.012
Cordial	10.805	.013
Receptive to Students	10.573	.014
Provides Non-threatening Environment	10.508	.015
Positive Attitude	10.459	.015
Friendly	9.965	.019
Caring About Students	9.753	.021
Helpful	9.385	.025
Hardworking	9.345	.025
Reliable	8.541	.038
Idealistic	8.189	.042
Understanding	7.866	.049
Females Indicating the Characteristic of Excellent Teaching as IMPORTANT		
Characteristic	Chi-Square Statistic	p-value (p < .05)
Approachable	10.511	.015
Females More Likely to AGREE that this IS a Characteristic of Excellent Teaching		
Characteristic	Chi-Square Statistic	p-value (p < .05)
Fair in grading work	12.043	.007
Let students express opinions even when professor disagrees	9.905	.019
Has a well-organized class	8.660	.034
Use technology effectively	7.887	.048
Males Indicating the Characteristic of Excellent Teaching as NOT VERY IMPORTANT		
Characteristic	Chi-Square Statistic	p-value (p < .05)
Motivating	18.382	.000
Patient	14.316	.003

As can be seen from Table 7, male students differ from female students. Male students view the characteristics of being "motivating" or "patient" as not very important (p = .000 and p = .003). Female students, on the other hand, rate as very important (p < .05) professors being "good listeners," "attentive," "Christian," "Continuously seeking ways to improve," "cordial," "receptive to students," "providing a non-threatening environment," "positive attitude," and "friendly." It is interesting to note

that all but three of these "top 10" match the literature review and focus group findings. Finally, female students are more likely to agree that the following are characteristics of excellent teaching ($p < .05$) – having "a well-organized class" and using "technology effectively," being "fair in grading work," and "letting students express opinions even when the professor disagrees." Only two of these were not specifically identified in the secondary research and focus group as being important characteristics of excellent professors.

Table 8. Significant Cross-Tabulations of Religious Preference and Characteristics of Excellent Teaching

Baptist Students Indicating the Characteristic of Excellent Teaching as VERY IMPORTANT		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Christian	36.043	.000
Baptist Students More Likely to AGREE that this IS a Characteristic of Excellent Teaching		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Respect Professors Who Respect Them	25.507	.013

Those students identifying themselves as Baptist (see Table 8) consider their professors being "Christian" as very important ($p = .000$). This may be due to the university being associated with the Baptist faith. Moreover, Baptist students were more likely to agree that the characteristic of "respect" was a trait of excellent teaching ($p = .013$). The characteristic of being "Christian" was not specifically identified in the secondary research. This may be due to this study being conducted at a "Christian" university. Beyond these two findings, there were no additional significant differences between the Baptist students and students of other faiths.

Table 9. Significant Cross-Tabulations of Home State and Characteristics of Excellent Teaching

North Carolina Residents Indicating the Characteristic of Excellent Teaching as VERY IMPORTANT		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Christian	57.405	.000
Experienced	39.363	.001
Cordial	37.155	.001
Caring	36.259	.002
Well-organized Class	36.242	.002
Self-Confident	32.991	.005
Professional	32.408	.006
Receptive to Students	30.290	.011
Calm	29.931	.012
Attentive	28.693	.018
Allow Students to Express Opinions Even When Professor Disagrees	28.043	.021
Continuously Seeks Ways to Improve	27.904	.022
Extending Grace	27.065	.028

Too Flexible Can End Up "Giving Away" Grades	27.031	.028
Funny	26.973	.029
Confident	26.540	.033
North Carolina Residents Indicating Characteristic of Excellent Teaching as SOMEWHAT IMPORTANT		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Sensitive	29.331	.015
Inquisitive	27.381	.026
North Carolina Residents Indicating Characteristic of Excellent Teaching as NOT IMPORTANT		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Approachable	32.369	.006

As can be seen from Table 9, the number one characteristic students who are North Carolina residents expect from their professors is that he/she be "Christian" ($p = .000$). Again, this may be due to this study being conducted at a "Christian" university. Being "Christian" was followed by "experienced" ($p = .001$, same as #1 from literature review – knowledgeable), "cordial" ($p = .001$), "caring" ($p = .002$), and "well-organized class" ($p = .002$) – all identified in the literature review as top 10 qualities of an excellent professor.

Table 10. Significant Cross-Tabulations of Major and Characteristics of Excellent Teaching

Nursing Majors Indicating the Characteristic of Excellent Teaching as VERY IMPORTANT		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Stays Up-to-Date	41.128	.016
Role Model	40.007	.021
Forgiving	38.578	.030
Idealistic	37.703	.037
Nursing Majors Indicating the Characteristic of Excellent Teaching as IMPORTANT		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Attentive	39.427	.025
Business Majors More Likely to DISAGREE that this IS a Characteristic of Excellent Teaching		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Hands-On Experiences in the Classroom	49.571	.002
Communication Majors Most Likely to DISAGREE that this IS a Characteristic of Excellent Teaching		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Professor Too Flexible Ends Up "Giving Away" Grades	44.207	.007

None of the significant findings between majors were identified as "important" characteristics in the literature or focus group. But as can be seen, nursing majors differed considerably from other majors. The number one characteristic nursing students viewed as very important in "excellent" professors was "stays up-to-date" ($p = .016$). This may be due to nursing being very dynamic profession. Moreover, nursing majors were the only demographic to designate "role model" "forgiving," and "idealistic" as very

important characteristics of excellent professors. Finally, the data seemed to indicate that business majors were more likely to disagree (p = .002) that "hands-on experiences in the classroom" were characteristics of excellent teaching and that communications majors were more likely to disagree (p = .007) that "professors who are too flexible end up giving away grades" were characteristics of excellent teaching.

Table 11. Significant Cross-Tabulations of Age and Characteristics of Excellent Teaching

Students Age 19 More Likely to AGREE that this IS a Characteristic of Excellent Teaching		
Characteristic	Chi-Square Statistic	p-value (p < .05**)**
Respect Professors Who Respect Them	39.588	.002
Appreciate Professors Who Talk to Them Outside of Class	28.947	.049

The "respect" characteristic of excellent teaching found significant (p = .002) by students age 19 was identified as an important quality by the literature review (see Table 1) and the focus group (see Table 2). Moreover, the characteristic – "appreciate professors who talk to them outside of class" (p = .049) was implied.

Table 12. Significant Cross-Tabulations of Class Level and Characteristics of Excellent Teaching

Freshmen Students Indicating the Characteristic of Excellent Teaching as SOMEWHAT IMPORTANT		
Characteristic	Chi-Square Statistic	p-value (p < .05)
Motivate Through Love of His/Her Discipline	30.018	.012
Christian	28.675	.018
Attentive	26.357	.034
The Professor is the Best Audio-Visual Aid That a Student Can Have	26.267	.035
Freshmen Students More Likely to DISAGREE that this IS a Characteristic of Excellent Teaching		
Characteristic	Chi-Square Statistic	p-value (p < .05)
Have Brilliant Professors With Very Little Communication Skills	26.213	.036
Sophomore Students Indicating the Characteristic of Excellent Teaching as NOT IMPORTANT		
Characteristic	Chi-Square Statistic	p-value (p < .05)
Approachable	26.092	.037

As can be seen from Table 12, freshman rated professors who "motivate through love of his/her discipline" (p = .012), who are "Christian" (p = .018) and who are "attentive" (p = .034) as "somewhat" important characteristics of excellence. These characteristics were identified as important in the literature as well as the focus group.

Table 13. Significant Cross-Tabulations of Athletic Status and Characteristics of Excellent Teaching

Non-Athletes Indicating the Characteristic of Excellent Teaching as VERY IMPORTANT		
Characteristic	Chi-Square Statistic	p-value (p < .05)

Attentive	15.224	.002
Experienced	12.053	.007
Helpful	10.458	.015
Good Listener	9.854	.020
Available	8.964	.041
Caring About Students	7.962	.047
Non-Athletes Indicating the Characteristic of Excellent Teaching as SOMEWHAT IMPORTANT		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Memorable	15.491	.001
Hardworking	12.582	.006
Approachable	10.650	.014
Christian	9.894	.019
Authoritative	9.683	.021
Sensitive	9.648	.022
Non-Athletes More Likely to AGREE that this IS a Characteristic of Excellent Teaching		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Professor Too Flexible Ends Up "Giving Away" Grades	16.210	.001
Non-Athletes More Likely to DISAGREE that this IS a Characteristic of Excellent Teaching		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Had Knowledgeable Professors Who Did Not Apply It to His/Her Field of Study	7.900	.048
Athletes Indicating the Characteristic of Excellent Teaching as NOT IMPORTANT		
Characteristic	Chi-Square Statistic	p-value ($p < .05$)
Motivating	19.813	.000

The six characteristics that non-athletes identified as very important were also contained in the "top 16" of the scholarly research. Interestingly, athletes did not consider "motivating" ($p = .000$) as a characteristic of excellent teaching. This perhaps was due to the athletes considering "motivating" a characteristic of an excellent coach rather than professor.

Conclusion

There was substantial agreement regarding the most important characteristics of teaching excellence between the scholarly literature, a focus group of professors who had won a campus-wide teaching award, and a survey of college students. Specifically, there were only two characteristics that differed between the secondary research/focus group and the "top 20" as identified by students in the survey (being "understanding" and "patient" wasn't identified in the literature or focus group). However, there were considerable differences according to demographics especially between male and female students and the different majors. Students of different ages/class levels and athletes and non-athletes disagreed somewhat while Baptist students and students from North Carolina differed the least. In sum,

while students collectively show agreement regarding the "top" characteristics that represent excellent college teaching, there's very little concurrence when segmented by demographic variables.

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THE STOCK MARKET REACTION TO THE UNEXPECTED COMPONENT OF LAYOFF ANNOUNCEMENTS

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ABSTRACT

Utilizing the largest data set ever collected to study layoffs, we conduct a two-stage regression to analyze the market reaction to the unexpected component of layoff announcements. After controlling for economy-wide and firm specific factors, our findings suggest that abnormal returns are directly related to the percentage of the workforce reduced and the deviation of the actual layoff level from the expected level. The statistically significant abnormal returns, both positive and negative, among the categories of healthy and distressed firms indicates that more complex forces are at work than either the Financial Distress or Potential Benefit Hypotheses can encompass.

Introduction

Work force layoffs averaged nearly five percent of the total annual payroll for firms that worker reductions between 1979-1987 (Worrel, Davidson and Sharma, 1991). Accordingly, there is an economic incentive for firms and individuals to better understand the information that layoffs convey to the market. Asquith and Mullins (1986) conclude that a layoff is a signal that a firm's financial troubles are real, while layoffs signal lower future returns according to Worrell et al. (1991). John, Lang and Netter (1992) suggest that the financial conditions associated with financial distress can foretell of future layoffs for a firm. While there are many arguments as to what information is conveyed in the layoff announcement, prior layoff studies typically fall into two different theoretical arguments.

Worrell et al. (1991) put forth the Financial Distress Hypothesis (FDH) where the market has no prior expectation that the firm will layoff employees or that the health of the firm is changing. A layoff announcement is therefore, confirmation of a firm's financial health and previously healthy (distressed) firms will have a more positive (negative) stock price reaction. They provide empirical support this theory by finding a -7.7 percent abnormal return for distressed firm layoffs. The Potential Benefit Hypothesis (PBH), outlined in Iqbal and Shetty (1995), suggests that the potential benefit of layoffs is greater for the stockholders of financially weaker firms. By eliminating employees, a financially troubled firm can better enhance its future performance, relative to healthy firms, by reversing or lessening its level of financial distress. A positive 1.5 percent abnormal return for distressed firms in their study supports the PBH and clouds the issue of what information a layoff announcement actually provides the market. The apparent conflicting results occur in large part because the FDH and PBH may jointly exist

across all layoff environments. By ignoring the market expectations prior to the layoff announcement, both studies tacitly assume the level of expected workforce reductions for any given economic condition is zero.

This paper provides a more robust examination of the impact of layoffs by examining a longer time period, a broader cross-section of firms, the simultaneous use of firm-specific and macro-economic variables, and a two-stage estimation process that separately examines investors' reaction to anticipated and unanticipated components of the layoff announcement. In the first-stage, we estimate a model of the expected fraction of employees to be laid off for each firm-year in the sample period for the universe of Compustat firms. In the second-stage, this expected value is then compared to the actual value using several metrics and regressed in cross-sectional tests against the abnormal announcement returns. We find support for both hypotheses and that they are neither mutually exclusive, nor exhaustive in explaining the possible outcomes. The stock market reactions are negatively related to the size of the layoff as a percentage of the workforce with larger layoffs announcement generally experiencing more negative abnormal returns. Abnormal returns are positively related to the frequency of layoffs within a moving twelve-month window as well as the size of the unexpected component of the layoff announcement.

The remainder of this paper is as follows. Section II presents the research objectives for the two hypotheses covered above. Section III discusses the empirical designs used in prior research and how this new investigation will help better address the research questions. Section IV includes an extended replication of previous research, as well as separate tests aimed at addressing more recent issues associated with testing financial distress. Section V presents the results and Section VI contains suggestions for future research in this area and provides a conclusion.

Prior Research

Worrell, Davidson and Sharma (1991) find support for the Financial Distress Hypothesis with the stockholder reactions to layoff announcements, as measured by abnormal returns, being negative for firms that are financially weak prior to the announcement. Financially weak firms are described as those having negative earnings per share in the year prior to the layoff announcement or those for whom earnings per share decreased thirty percent or more in the two years prior to the layoff announcement. They conclude that the stock market views the layoffs as a signal or confirmation of the firm's current financial condition. Comment and Jarrel (1995) provide further support for the Financial Distress Hypothesis, concluding that the stock market perceives downsizing as signaling either poor future prospects or poorer than expected current financial conditions for distressed firms.

Iqbal and Shetty (1995) find positive stock market returns for their sample of distressed firms that announce layoff, offering support for their formalization of the Potential Benefit Hypothesis. They suggest that the potential benefits of a layoff are greatest to the stockholders of financially weak firms. By downsizing the number of employees, a financially troubled firm can avoid a further deterioration of its already poor performance. They also recognize that their positive results could be due to the use of different measures for financial distress or agency problems that might arise for the healthy firms due to the creation of excess financial slack. Bailey and Sherman (1988) support the Potential Benefit Hypothesis indirectly by noting that downsizing is virtually synonymous with an increase in profitability.11

There are three primary differences between the empirical designs of Worrell et al. (1991), and Iqbal and Shetty (1995) that might explain the observed conflicting support for the two theories; different measures for financial distress, different sample selection criteria, including different time periods, and different empirical designs, particularly with respect to the calculation of abnormal returns.12

We address the issue of a measure for financial distress by utilizing a developed by Hovakimian and Titman (2003) and Asquith, Gertner and Scharfstein (1994). They classify a firm as financially distressed if EBITDA is less than 80 percent of interest expense. Though this measure would exclude firms without debt, it avoids some of the earnings pitfalls of the Worrell et al. (1991) measure while including many of the non-public debt firms excluded by Iqbal and Shetty (1995).

The time period for the Worrell et al. (1991) study is from 1979-1987, a period that include the recession of 1983-1984. Iqbal and Shetty's data set covers from 1986-1989, during which there were no recessions. Lev (1974) finds that corporate failures rates rise sharply during economic downturns. This suggests that there might be different overall levels of financial distress between studies that include recessions and those that don't. Additionally, if firms are more likely to downsize during recessions or their access to capital markets is restricted, requiring operational adjustments like layoffs to create financial slack, then results found for studies during recessions versus those not including recessionary periods might differ due to the differences in the macro-economic environment.

The empirical designs are different as well. Ebla and Shetty (1995) screen for confounding results while screening is not mentioned in Worrel et al. (1991). Worrell et al. (1991) divide the sample into three different groups based on the size of the layoff as a percentage of the total work force; 0 to 0.98%, 0.99% to 4.49%, and more than 4.5%. If the characteristics of firms within these three work reduction levels are different, which could introduce bias into the results. For instance, if smaller firms dominate the largest proportional layoff category, then the results might be picking up a small firm effect, not an effect related to the size of the layoff. Iqbal and Shetty (1995) do not mention the size of the layoff as a factor in their study. Iqbal and Shetty (1995) show that for firms in financial distress, more firms qualify

11 Lasfer et al. (1996) reached similar conclusions, but companies in their sample divested assets as well.
12 Ofek (1993) is not a cross-sectional paper but is included due to the different market measure for financial distress. I employ this measure to add richness to the tests.

as distressed during recessions and that layoffs are more likely if all firms are performing poorly. To the extent that financial distress is a step in the process between a healthy firm and bankruptcy, it might be expected that all firms would act differently during a recession as opposed to economically healthier times if a poor economy increases the probability of financial distress.13 Wood and Piesse (1987) establish that accounting data representing firm characteristics tend to have different volatility levels during different phases of the business cycle. These findings lead to the conclusion that the state of the economy at the time of the layoff announcement needs to be explicitly incorporated to accurately model firm distress and the impact it has on the market's reaction to layoff announcements.

Empirical Design

We employ a two-stage Tobit hazard model to estimate the expected portion of the workforce to be laid off for all firms with data reported by Compustat during the 1980-2002 periods. Utilizing all the data for all firm-years allows us to predict the expected layoffs utilizing the coefficient estimates for firms in the year they layoff.

Abnormal returns are generated using the market model suggested by Brown and Warner (1980) and followed by Worrell, Davidson and Sharma (1991), and Iqbal and Shetty (1995). In this model, the return to a given stock on day *t* is calculated as:

$$R_{it} = \alpha + \beta R_{mt} + \varepsilon$$

Where:

R_{it} = the return for firm i on day t

R_{mt} = the market return on day t

ε = a disturbance term

The coefficients $\hat{a}_i$ and $\hat{b}_i$ are the estimated values of the market model parameters for the 220 day period [from day t = –250 to day t = – 30] prior to the announcement of the layoff, with the layoff announcement day denoted as day t = 0.14 The abnormal return is the actual return on t = 0 less the forecast return for firm i on day t = 0 or:

13 Mensah (1984) supported the inclusion of macro-economic variables for the type of testing used in this paper. He concluded that while multivariate statistical analysis may correctly identify common characteristics of distressed firms, there is a need to couple the firm specific observations with economic events to best determine accurate coefficients.

14 Given the nature of the announcements that are collected from daily national newspapers, there are no time stamps associated with the collection dates.

$$AR_{it} = \text{R}_{it} - \hat{}_i + \hat{}_i(R_{mt}),$$

Where:

AR_{it} = the abnormal return for firm i on day t, and

R_{it} = the actual return for firm i on day t.

To initially estimate abnormal announcement period returns, we use the standard market model with three alternative market proxies: the CRSP value-weighted index, the CRSP equal-weighted index, and the return on the relevant CRSP size decile portfolio.15 Brown and Warner (1980) show that detection of abnormal returns is more robust when an equal-weight index is used to proxy for the market model. The CRSP value-weighted index is employed for comparison to previous studies and robustness. As an additional robustness check to account for the size factor in returns, CRSP size decile portfolios are used as the reference market model index, where each size decile is equally weighted.

Estimated abnormal returns are examined over event windows ranging from -3 to 3 days in event time with abnormal returns for –2,0 reported in Table 2.16 Further, we estimate a new cross-sectional model of abnormal returns that includes both macro-economic and firm-specific factors to evaluate possible previous model misspecifications.

Summary of Testing Processes

Because testing the exhaustive list of variables previously examined in the literature is impractical, this paper uses only those variables best supported by theory or that were found to be statistically significant based on macro-economic and firm financial or operational characteristics in previous research.17

The new estimation model is:

$$AR_{it} = \alpha + \beta_1 DISTRESS + \beta_2 WFPCT + \beta_3 LVG + \beta_4 UP + \beta_5 SIZE + \beta_6 FREQ + \varepsilon \quad (1)$$

Where:

AR_{it} = the abnormal return for firm i over period t;

15 With the size decile portfolio it adjusts based on the decile within the CRSP index the individual stock falls.
16 Similar results are found for virtually all the time periods from [-3,3] and results are available upon request.
17 Giroux and Wiggins (1984) test more than one hundred fifty variables.

DISTRESS = an indicator variable taking a value of one if a firm is in distress based on each model specific measure,18 zero otherwise;

WFPCT = the number of people laid off for each announcement divided by the total firm's workforce;

LVG = the ratio of debt to total assets;

UP = an indicator variable taking the value of one during a trough to peak economic period, zero otherwise;

SIZE = the natural logarithm of the book value of assets;

FREQ = an indicator variable for frequency of layoffs equal to zero if there was not another firm-specific layoff within a twelve month period prior to the layoff announcement, one otherwise.

A continuous variable calculated as the size of the layoff divided by the total workforce (*WFPCT*) is used to test if the size of the layoff as a percentage of the workforce is related to the market reaction to the announcement. Larger percentage layoffs that lead to negative stock market reactions lend support to the Financial Distress Hypothesis while positive reactions to increasingly large layoffs would support the Potential Benefit Hypothesis.19

The ratio of total debt to total assets (*LVG*) is a control variable that is statistically related to financial distress in previous research and thus is included here (Flagg and Giroux, 1991).20 Highly leveraged firms react faster to distress (Ofek, 1993 and Jensen, 1989), improving their odds of survival and lessening the time spent in financial distress. If previous research holds, the coefficient estimate for *LVG* for all hypotheses is expected to have a positive sign so that firms that downsize and have more debt should experience a less negative stock market reaction than less leveraged firms who announce layoffs.

A peak to trough binary variable, *UP,* signifies economic growth verses economic declines. This control variable is necessary to determine if the stock market reactions to layoff announcements differ during expanding (contracting) economic cycles. *UP* takes on a value of one during economic expansions, and a zero otherwise, with NBER providing the source of the turning point data. Ofek (1993) determines that firms are not disciplined the same for operational actions in up verses down economic markets. 21 Nohria and Gulati (1996) conclude that there are fewer positive net present value projects available and

18 Distress is measured according to each of the studies being replicated and for the purpose of this study as in Hovakimian and Titman (2003).
19 It is in this context that the difference between analyzing the percentage of the workforce laid off and the percentage of the workforce that the market expects to be laid off becomes particularly pertinent. By using the total percentage laid off, the market's prior expectation is inferred to be zero. For firms in financial distress, this is particularly unlikely to be the case.
20 Higher levels of debt lead to an increased probability of distress, bankruptcy or both.
21 Operational actions included in Ofek (1993) were; (1) changing the asset structure by selling assets, divesting divisions, and discontinuing unprofitable operations, (2) changing the size and scope of operations by consolidating production facilities and laying off employees, and (3) changing top management.

that operational leverage adjustments are more common for firms during a down economy. The coefficient estimate for *UP* is expected to have a positive sign indicating that firms who announce layoffs during expanding economies experience a less negative or more positive market reaction than firms who announce layoffs during down economies (Chan, Chen and Hsieh, 1985).

A continuous independent variable to measure firm size (*SIZE*) is calculated as the natural logarithm of the book value of total assets at the beginning of each period. The natural logarithm of size is used to capture potential non-linearities in the market reaction to the layoff announcements. Evidence by Burgess, Lane and Stevens (2000) indicates that the size of the firm impacts the probability of a layoff during an economic downturn. They find that early lifecycle or small firms and late lifecycle or large firms contributed disproportionately to the layoff flows. Once macro-economic factors are controlled for, the predicted sign for *SIZE*, β , could be positive or negative depending on the hypothesis.

An indicator variable is included for frequency of layoffs (*FREQ*) with a zero indicating a single layoff within a moving twelve-month period and a one otherwise. Companies that frequently announce layoffs experience different stock market reactions than firms who downsize infrequently (Ursel and Stassen, 1995). They find a statistically significant negative reaction for the first layoff announcement of a firm within a twelve-month time period and a negative but statistically insignificant reaction for subsequent layoffs within the same twelve-months.22 It is anticipated that more frequent layoffs will lead to less negative or less positive stock market returns, depending on the hypothesis, making it possible for the sign of the coefficient estimate to be either plus or minus.

First-Stage Estimation

Since at any given point in time, market participants are likely to have an expectation regarding both the likelihood and the magnitude of a layoff for each firm, it is necessary to control for these expectations. There should be no market reaction if a firm reduces the investors' expected fraction of the workforce. We first estimate a model of the anticipated fraction of the workforce laid off in order to estimate the unanticipated fraction of the workforce being reduced. The percentage of the workforce actually reduced (WFPCT) is regressed against all firms in the Compustat database for firm specific and macro-economic variables within a Tobit hazard model framework. Evaluating firm distress, Shumway (2001) finds that the most accurate expectation models use both market and firm specific data. Studies in top executive turnover (Denis, Denis and Sarin, 1997), IPO's (Pogani, Panetta and Zingles, 1998), and the impact of bankruptcy on systematic risk (Dichev, 1998) have all used similar logistic analysis to derive an expected probability of the unexpected release of information for the event being examined. The method we employ differs in that none of the prior studies use the unexpected layoff results as a second stage variable in subsequent cross-sectional regressions.

22 Worrel et al (1991) and Ofek (1993) did not separate out temporary verses permanent layoffs while Iqbal and Shetty (1995) dropped layoff observations that were within 6 months of each other to eliminate noise.

Because the percentage of the workforce reduced is bounded zero to one, a hazard model utilizing a Tobit regression is employed to better utilize all the information available and as a means of adjusting for the large number of firms that don't layoff during the sample period. Hazard models fit parametric accelerated failure, cross-sectional data that may be right, left or interval censored. The baseline distribution on the error term can be specified as one of several possible distributions, including normal, log normal, log logistic, Weibull and exponential. The logistic distribution is chosen because it gives robust parameter estimates in the sense that the estimates have a bounded influence function while other possible distributions like the normal or Weibull distributions are unduly influenced by outliers.

The model assumed for the response y is

$$Y= X\beta + \sigma\varepsilon \qquad (2)$$

Where Y is the vector of response values (fraction of the workforce reduced), X is a matrix of covariates or independent variables, β is a vector of unknown regression parameters, σ is an unknown scale parameter, and ε is a vector of errors assumed to come from a know distribution as specified. The parameters are estimated by maximum likelihood using a Newton-Raphson algorithm.23

The classic Tobit model (Tobin, 1958) also fits into this class of models, but with data that is usually censored to the left. Because the vast majority of observations in this data set have a value of zero for the response variable, a Tobit procedure is used such that:

$$Y= \max(x\beta+\varepsilon, 0). \qquad (3)$$

In determining the expected percentage of the workforce to be laid off, we test three different estimations; in the first estimation, we include only firm-specific variables to estimate the fraction of workers investors expect to be eliminated. Only macro-economic variables are considered in the second estimation while both types of variables are considered in the third analysis. The rationale for using the first two tests is to provide evidence on the relative contribution of economy-wide versus company-specific characteristics in the determination of layoff expectations. A complete sample of all firms with the required accounting data totaling 168,900 firm-years are used in the three Tobit regression estimations in order to provide a more complete picture of firms preparing to layoff employees.

The three models are:

23 When no censoring is used, the ordinary least squared regression and tobit hazard model regression procedures yield the same result.

$$E(L1) = \alpha_i + \beta_1 SIZE + \beta_2 LVG + \beta_3 RTEARN + \beta_4 CURRENT + \beta_5 SLACK + \beta_6 DIV + \beta_7 DIVEST + \beta_8 FREQ + \beta_9 DISTRESS + \varepsilon \quad (4)$$

$$E(L2) = \alpha_i + \beta_{10} PRIME + \beta_{11} PROGRO + \beta_{12} UNEMP + \beta_{13} TRES + \varepsilon \quad (5)$$

$$E(L3) = \alpha_i + \beta_1 SIZE + \beta_2 LVG + \beta_3 RTEARN + \beta_4 CURRENT + \beta_5 SLACK + \beta_6 DIV + \beta_7 DIVEST + \beta_8 FREQ + \beta_9 DISTRESS + \beta_{10} PRIME + \beta_{11} PROGRO + \beta_{12} UNEMP + \beta_{13} TRES + \varepsilon \quad (6)$$

Where:

$E(L_i)$ = the actual percentage of the workforce downsized as collected from Lexis-Nexis.

Variable definitions are as follows with all variables measured at the beginning of the year:

SIZE = the natural logarithm of the book value of assets;

LVG = the debt to total assets ratio;

RTEARN = the retained earnings to total assets ratio for the firm;

CURRENT = the current assets to current liabilities ratio for the firm;

SLACK = the earnings before taxes, interest expense, depreciation and amortization to total asset ratio for the firm as a proxy for available cash flow;

DIV = a binary variable equal to one if the dividend reduction is announced during the event window for the layoff announcement, zero otherwise;

DIVEST = a binary variable equal to one for an announced divestiture of assets during the event window, zero otherwise;

FREQ = a binary variable equal to one if a firm layoff falls within a moving twelve-month window of a previous layoff by the same firm, zero otherwise;
DISTRESS = one if the earnings before interest, taxes and depreciation (EBITDA) divided by the interest expense is < .8, zero otherwise;

MACRO-ECONOMIC VARIABLES:

RECESS = a binary variable equal to one if the economy is in a contraction defined by NBER as occurring between and peak and trough during the year in which a layoff announcement occurred, zero otherwise;

PRIME = the average prime lending rate during the year of the layoff announcement;

PROGRO = the average productivity growth rate during the year within which the layoff announcement was made;

UNEMP = the unemployment rate during the year within which the layoff announcement was made;

TRES = the yearly average of the monthly yields for the 10-year U.S. treasury bond.

The macro-economic variables are meant to better represent the economic expansion variable UP.

A continuous variable based on firm size (*SIZE*), measured as the natural logarithm of the market capitalization of the firm's stock, is used to evaluate the impact firm size has on layoffs. The coefficient estimate for *SIZE* represents the impact firm size will have on the expected level of workforce reductions. Gertler and Gilcreast (1994) noted that larger firms had more developed networks resulting in a better ability to survive financial downturns. It is expected that the coefficient estimate on β will be negative indicating that larger firms will have a lower expected percentage layoff.

A high total debt-to-total-equity ratio, a measure of leverage, is found by Zmijewski (1984) to significantly increase the expected probability of layoffs. Variations of this ratio including total debt, debt scaled by assets, and the natural log of debt to equity, are all found to be weakly significant or statistically insignificant in previous studies (Beaver, 1966, Altman, 1968 and Theodossious, 1996). The leverage of a firm (*LVG*) measured as the natural logarithm of total debt to total assets ratio is expected to significantly impact the expected percentage of layoffs due to the constant fixed interest payments and principal payments required to meet this obligation. Leverage also represents the difference between internal and external capital costs for both small and large companies, since the agency cost of issuance should be positively related to the degree of leverage. The coefficient estimate for *LVG* is expected to be positive indicating a higher degree of leverage increases the market's expectation of the percentage of the workforce to be laid off.

Rather than use negative retained earnings or accumulated deficits as a filter for distressed firms, as has been done in previous studies, retained earnings are included as a continuous variable (*RTEARN)* after being scaled by total assets, as is done by Zmijewski (1984) and Altman (1968). To the extent that retained earnings represent a financial buffer against tough times that might otherwise require layoffs to survive, the coefficient estimate for *RTEARN* is expected to be negative indicating that a higher level of retained earnings as a percentage of total assets would lead to a lower expected percentage of the firm being laid off.

The current ratio (*CURRENT*), measured as total current assets divided by total current liabilities, has a negative impact on the probability of bankruptcy in three different studies (Flagg and Giroux, 1991, Zmijewski, 1984, and Altman, 1977). Thus, the coefficient estimate for *CURRENT* is expected to be negative so that a higher current ratio indicates a lower expected workforce layoff.

Nearly every item on the income statement, from sales to EBIT to net income, has been tested as others have analyzed the relationship between distress, sales and the assets it takes to create sales. These income statement measures are attempts to represent a firm's financial cash flow and profitability. The most common finding among the statistically significant relationships has been between earnings before interest, taxes, depreciation and amortization (*EBITDA*) scaled by total assets, a measure providing a proxy of the cash flow per dollar of assets, and known in many studies as $SLACK$ (Flagg and Giroux, 1991, and Altman, 1968). Slack is critical to a firm's ability to meet current obligations while also being less subject to management manipulation than other accounting earnings measures. The coefficient estimate for *SLACK* is expected to be negative such that higher levels of slack decrease the expected percentage of the workforce to be eliminated for a firm.

Other operational or financial activities, such as dividend reductions or divestitures, can also provide operating slack and therefore would be expected to lessen the probability of a firm initiating layoffs. Hovakimian and Titman (2003) note that healthy and distressed firms sell assets for different reasons as the marginal dollar of cash flow from asset sales is less likely to be invested if a firm is in financial distress. Dividend cuts are a common method employed to conserve funds by firms in distress according to DeAngelo and DeAngelo (1990). The coefficient estimate for dividend reductions (*DIV*) and the coefficient estimate for divestitures (*DIVEST*) are both expected to be negative, suggesting that these actions are associated with a decrease in the expected percentage of workforce laid off for a given firm.

Ursel and Stassen (1995) find a statistically significant negative reaction for the first layoff announcement of a firm within a twelve-month time period and a negative but statistically insignificant reaction for subsequent layoffs within the same twelve-months. The coefficient estimate for *FREQ* is expected to be negative so that more frequent layoffs would decrease the expected percentage of the layoff announcement for the firm.

Hovakimian and Titman (2003) and Asquith, Gertner and Scharfstein (1994) use an accounting measure to classify firms as financially distressed if earnings before interest, taxes, depreciation and amortization are less than 80% of interest expense. The coefficient for *DISTRESS* is expected to be negative so that firms that have greater EBITDA interest coverage would have lower expected levels of workforce reductions.

Macro-economic variables that have been shown to impact the level of distress experienced by a firm include productivity growth, the level of unemployment, whether the economy is in a recession or not and the prime-lending rate (Sharpe, 1994, and Platt and Platt, 1990). The prime lending rate (*PRIME*)

identified by Rose, Andrews and Giroux (1982) is also included to help control for changes in the business environment. The coefficient estimate for *PRIME* is expected to be positive so that higher prime lending rates lead to higher levels of firm-specific layoffs. The amount of productivity growth, *PROGRO,* likely impacts the level of employment required by businesses, which would also impact the aggregate level of unemployment (*UNEMP)* (Schreft and Singh, 2003). The coefficient estimate for *PROGRO* represents the impact productivity growth has on the expected percentage of layoffs for individual firms. This relationship is expected to be positive so that higher productivity growth leads to higher levels of employee reductions for firms overall, due to productivity rates rising when hiring is limited and a decreased need for employees. The coefficient estimate for *UNEMP* represents how levels of unemployment affect the expectation that a firm will reduce its workforce. A positive relationship is predicted indicating higher expected percentage layoffs for higher overall levels of unemployment due to the reduced product demand associated with higher unemployment. All of these macro variables are measured using government figures from the National Bureau of Economic Research (NBER) and the Department of Labor Statistics.

As the level of the ten-year Treasury yield rises, it is expected to adversely impact general business activity and therefore have an undesirable impact on the level of employment for the economy overall. During a recession, however, all interest rates, including Treasury rates, would fall even while the level of unemployment generally rises. The coefficient estimate for *TRES* is expected to be positive if the layoffs occur during a recession or negative relative to the expected reductions in workforces if the reductions are during stronger economic expansion.

The first tobit estimation, E(L1), assesses the impact of firm-specific measures on the announced layoffs as a percentage of the workforce. The second tobit estimation, E(L2), only considers the impact of macro-economic variables, providing the β_i through $\beta_{i\,2}$ coefficient estimates as they relate to the percentage of the workforce reduced. The third tobit test uses the E(L3) specification, where firm-specific and macro-economic variables are both used to explain the percentage of the workforce eliminated.

To find out if the market reacts to the unexpected part of a layoff announcement, three possible permutations of unexpected workforce reductions are examined. They are:

$$WFPCT1=WFPCT - E(L_i) \quad (7)$$

$$WFPCT2= (WFPCT- E(L_i))/ E(L_i) \quad (8)$$

$$WFPCT3= WFPCT/ E(L_i) \quad (9)$$

WFPCT1 from equation (7) represents the raw difference between the actual percentage reduction of the workforce from the Lexis-Nexis announcement and the expected percentage of the workforce forecast from the tobit regression estimation for E(L3). It signifies the part of the layoff announcement the market did not expect. WFPCT2 is the same relationship as WFPCT1, standardized by the expected

percentage of the workforce from the first-stage estimation. This corresponds to how much the actual layoff varied from what the market expected measured as a percentage departure from the anticipated component. WFPCT3 represents another means of evaluating a standardized measure of how much the actual layoff varied from what was expected.

A final model specification is evaluated that includes the original new model with the new unexpected workforce variable. The last model estimated is:

$$AR_{it} = \alpha + \beta_1 DISTRESS + \beta_2 WFpct + \beta_3 LVG + \beta_4 UP + \beta_5 SIZE + \beta_6 FREQ + \beta_7 WF_I + \varepsilon \quad (10)$$

Where all variables are as previously defined except for $WFPCT_i$ which is the unanticipated layoff component as previously discussed. This analysis addresses whether it is the unexpected layoff announcements that impacts the market's reaction to layoff announcements in concert with the actual level of layoff.

Finally, abnormal returns for the event period [-2,0] are compared between healthy and distressed firms based on the Hovarkimian and Titman (2003) measure for the unexpected portion of the workforce reduced. The WFPCT1 or unexpected portion of the workforce reduced measure is divided into quartiles, from smallest to largest, and the average abnormal return is calculated for each quartile to better see how the returns are affected by the size of the unexpected portion of the layoff.

Data and Sample Selection

The total firm years in the Compustat Data base from 1980-2000 numbered 214,601. As is the case in all the data sets utilized in this research area, firms in the utilities and financial services industries were eliminated due to data restrictions and the difficulty in comparing financial ratios. For each firm-year for all the firms, an indicator variable, *Distress,* is coded as a 1 for years in which the firm is financially distressed and a zero otherwise. In a departure from previous literature, this allows us to provide a more robust sample by allowing firms to enter and exit financial distress. All firms without data available in both CRSP and Compustat are also dropped.

Following the Asquith, Gertner and Scharfsein (1994) method, the current study classifies a firm as financially distressed if the earnings before interest expense, taxes, depreciation and amortization are less than 80% of interest expense. There are 48,452 distressed firm years and 56,514 healthy firm years, or 46.2 percent distressed and 53.8 percent healthy in this data sample.

Layoff announcements are hand collected using Lexis-Nexis to avoid any Wall Street Journal Index bias (Denis and Denis, 1995) for the time period from January 1980 through December 2002. A total of 4,646 data points are then screened for contaminating events within +/- 3 days around the layoff

announcement date. Specific contaminating factors resulting in the elimination of data points include: divestitures (897), earnings announcements (816), mergers and acquisitions (96), turnover of top management (CEO, CFO or COO, 32), moving jobs overseas (33), stock issuance (10), bond issuance (4) and dividend reductions (7). Contaminating events associated with announcements of accounting fraud, lost contracts or other unusual but potentially material information eliminates 55 more data points. Finally, another 575 data points are not covered in either Compustat or CRSP, or provide insufficient data to calculate firm-specific ratios or abnormal returns. This left a total of 2,127 layoff announcements. When utilizing the predictive estimation process as part of the two-stage regression, the sample is limited to 804 observations due to hazard model requirements for estimating layoffs using complete financial information for all years from 1980-2002.

Data for the Tobit regressions is collected during the original Compustat analysis. All available firm-years (168,900) are evaluated to determine the expected percentage layoff as a forecast of the actual level of layoff. The prime lending rate, productivity growth rate, unemployment rate and ten-year treasury rate data are obtained from the United States government, St. Louis Federal Reserve web site (http://research.stlouisfed.org/fred2/).

Results

A. Univariate

Table 1 gives summary statistics for the years 1980-2002 taken from Compustat, CRSP and Lexis-Nexis partitioned by healthy and distressed firms. The univariate statistics suggest that the differences between healthy and distressed firms are consistently statistically significant. Healthy firms, on average, are larger, less leveraged, announce layoffs more frequently but lay off fewer workers, and layoff more during up markets than down.24

The cumulative average abnormal return for days [-2,0] are generally negative, statistically significant and economically large (Table 2). These results are consistent with the Financial Distress Hypothesis. For those observations without contaminating announcements (Clean Data Ste), we find an abnormal announcement period return of -0.45 percent. This is more negative and has a higher level of statistical significance than the average abnormal return found in any of the prior studies. When cumulative abnormal returns are compared for both the full and clean data sets the average return for the full sample is more negative, -0.91 percent, suggesting that the additional information that firms are imparting around the time of the layoff announcement also conveys, on average, negative information to the stock market.

B. Stage-One Tobit Regressions

The first step in analyzing the abnormal returns is to model the expected fraction of the workforce to be laid off. The coefficient estimates for a hazard model estimation that relates the percentage of the workforce reduced against firm-specific and macro-economic variables, are contained in Table 3. For

24 These results are qualitatively and statistically the same for the median tests.

the firm-specific model estimations, E(L1), all of the coefficient estimates are statistically significantly different from zero except for those on the variables capturing the effects of the leverage ratio and simultaneous divestiture announcements. The current ratio coefficient estimate is statistically significant, though the sign (+) is opposite of what was expected. This implies that a higher current ratio is associated with higher levels of layoffs. While a higher current ratio might suggest the ability to cover your current liabilities more easily, it could also include firms experiencing slow inventory or accounts receivable turnover, which would be directly related to financial distress.

All of the macro-economic variables when tested independently in estimation E(L2) are statistically significant. The extremely low R^2 would suggest, however, that macro-economic variables do not add significantly to our ability to explain the level of workforce reductions.

While the coefficient estimates on most of the firm-specific variables are still statistically significant in the full-model, E(L3), the coefficient estimate for the frequency of layoffs is not. Among the macro-economic variables, the level of productivity growth, the prime lending rate and the treasury rate all lose statistical significance with only the rate of unemployment remaining statistically significant. The combined model has a higher R^2 than the firm-specific model, but only slightly, which comes from adding the macro-economic variables. From the estimated coefficients in Table 3, we use the actual values of the independent variables to extract the level of workforce reductions the market expected as predicted by the estimation of E(L3).

C. Actual verses expected layoffs

Table 4 is constructed utilizing the coefficient estimates from the hazard model as contained in Table 3 to estimate the level of layoffs that was expected given the financial condition and state of the economy for each of the 804 firms with complete financial information. Categorizing the firms by the actual percentage of the workforce reduced with Q1 being the smallest quartile of departure from expectations, we can see the distribution of layoffs as a percentage of the workforce. For every category in Table 4, the difference between the actual and expected layoffs is positive, implying that, based on the estimation, the predictive model systematically under-anticipates the size of the layoffs. Firms, whose actual level of layoffs is below the median level for the entire population, experience an unexpected percentage of layoffs that is relatively small (Panel A), barely one percent. The upper half of firms in the layoff population have unexpected layoffs that are significantly larger, nearly eleven percent more of their total workforce than what was forecast. Breaking down the actual layoffs into quartiles, it becomes clear that firms in the smallest actual layoff quartile (Q1) have very small-unexpected layoffs averaging less than 0.31% of their workforce. Firms in the largest quartile of layoffs (Q4), on the other hand, have extremely large unexpected layoffs that average nearly one-sixth of the entire firm's labor force.

Separating the firms into healthy and distressed categories (Panels B and C) yields similar unexpected layoff results. While distressed firms with the highest quartile of actual layoffs are associated with

larger layoffs than healthy firms in the same quartile, the market expects higher layoffs among these firms and the unexpected layoffs vary by less than one percent between these types of firms. To the extent that the difference represents the unexpected component of layoffs by the market, healthy and distressed firms surprise the market nearly equally across all levels of firm workforce reductions. This suggests that it isn't the firm's status as healthy or distressed relative to the size of the unexpected layoffs that leads to the difference in the abnormal returns between these two categories of firms.

D. Univariate analysis of the conditional CARS

Table 5 evaluates the stock market returns based on the size of the unexpected portion of the layoff announcements as a percentage of the workforce. When the unexpected portion of the layoff is in the smaller half of the observations (Panel A), the market reaction is economically zero and statistically undetectable. The cumulative average abnormal return for the larger half of the unexpected layoffs is negative and highly significant, a finding that supports the Financial Distress Hypothesis. This suggests that what causes the market to react may not be the characteristics of the firm alone, but that the announcement is worse than what is expected.

When the sample is divided into quartiles based on the unexpected percentage of layoffs in Panel A, a pattern emerges where layoffs less than expected have a slightly negative to zero abnormal return that is not statistically significant at conventionally accepted levels, while unexpected layoffs in the third quartile are positive and significant (0.46 %), providing support for the Potential Benefit Hypothesis. For the fourth or largest unexpected layoff quartile, the average abnormal return is negative and significant (-2.75%), a finding that provides further support for the Financial Distress Hypothesis. This suggests that the market either prefers unexpected layoffs of a certain size, or that attributes of firms in these statistically significant quartiles are such that the market likes or extremely dislikes the unexpected component of their workforce reduction announcement relative to these attributes. The statistically insignificant and economically small abnormal returns for the first and second quartiles could suggest that within this group, the perceived signal of an increase in the likelihood of financial distress is balanced off against the benefits of workforce reductions encapsulated as the Potential Benefits Hypothesis or against some other perceived benefit. It could also be that no material new info was released. That is, the FDH and PBH effects have either occurred in the past when the expectations of the layoff were formed or are not considered to sufficiently change expectations of the firms' future performance and value. Thereby, the effect from either hypothesis is unobservable at the announcement.

When the below and above median unexpected fraction of the workforce laid off is divided among healthy and distressed firms (Panel B), the statistically significant negative abnormal return for the above median unexpected layoffs is attributable on average to the distressed firms. The distressed firms with the above median unexpected layoff component experience an abnormal return that is more than double the statistically significant reaction for the full population above median unexpected layoff category (Panel A). The positive but statistically insignificant reaction for the below median unexpected

portion of the distressed layoff sample helps to explain the neutral reaction for the lower unexpected workforce reduction for the entire population. For the healthy firms, the below median unexpected layoffs return is negative and statistically insignificant. This provides support for the Wertheim and Robinson (2000) finding that the most negative and most positive returns are among the layoffs for distressed firms.

The division of the quartiles into distressed and healthy firms (Panel C) provides further evidence for the possibility of an optimal layoff size. The pattern of a particular quartile being positive and significant is still present for both types of firms, though the positive reaction for distressed firms occurs at a much lower level of unexpected workforce reductions. Whereas the positive return for distressed firms occurs at an unexpected workforce reduction of approximately two percent, for the healthy firms it averages nearly six percent within the third quartile of unexpected layoffs based on the averages for those quartiles from Table 4. By the time distressed firms achieve the third quartile level of layoffs, the positive abnormal return is nearly gone and for the highest level of layoffs for both types of firms, the market reaction is statistically significant and strongly negative. Supporting evidence for the Potential Benefit Hypothesis, as defined in Iqbal and Shetty (1995), is found by the statistically significant positive return in the second quartile for distressed firms. We believe the market is reacting to the possibility that the layoffs are perceived as necessary to increase the efficiency of the firms, though this hypothesis would not be exclusive to healthy or distressed firms. The different market reactions among healthy and distressed firms, as well as the possibility that the stock market reacts to something other than increased efficiency (PBH) or increased assessments of financial distress (FDH), represents a major contribution of this paper.

F. Cross-sectional regression results

The second stage regressions are examined to accurately incorporate the role of expectations into the analysis of cumulative abnormal returns. Table 6 contains coefficient estimates for these regressions that are estimated using the unexpected layoffs (actual – expected) predicted by the model contained in Table 3. By failing to model the unexpected layoff component, prior studies are in essence assuming that the market's expected workforce reduction is zero. The firm-specific model, E(L1), is used to calculate the variables WFPCT1, WFPCT2, WFPCT3 as additional separate independent variables, which are then added to the cross-sectional abnormal return models previously estimated. Among the three methods for calculating the difference between the expected and announced workforce layoffs, we report WFPCT1, calculated as the non-standardized or raw difference between the two percentages25.

Both the size of the layoff announcement as a percentage of the workforce (WFPCT) and the unexpected portion of the layoff (WFPCT1) are found to be highly statistically and economically

25 WFPCT2 and WFPCT3 produced statistically and economically similar results.

significant.26 The negative coefficient estimate for the WFPCT variable suggests that larger layoffs as a percentage of the workforce are associated with more negative abnormal returns, an assertion that supports the Financial Distress Hypothesis. This suggests that once we control for all other influences, particularly for the impact of the increased probability of financial distress, the market interprets an unexpectedly large layoff (WFPCT1) announcement as a positive indicator of future prospects. This implies that, once the impact of layoff size is taken into account, larger unanticipated layoffs are perceived as a signal that there will be benefits to the layoff process either through increased efficiency of operations or fewer claims in bankruptcy. This is generally supportive of the Potential Benefit Hypothesis, though it is not specific to either healthy or distressed firms.

The frequency of layoff announcements is also statistically significant in determining the stock market reaction to layoff announcements. The coefficient estimate is positive suggesting that more frequent announcements lead to more positive (less negative) stock market returns. We attribute this reaction to a lower level of information asymmetry at the time of the announcement due to expectations created from previous announcements.

The coefficient estimate for distress shows up as statistically insignificant across all the time frame of the study when WFPCT1 is included. This suggests that distress, when evaluated separately, has at best a marginal role in determining the market reaction on the date of the average layoff announcement.

Size, which had been significant in all the previous new model estimations, is now no longer a significant variable in the multivariate model with the unexpected layoff variable. Within the context of layoff announcements, this provides evidence contrary to that of Gertler and Gilcrest (1994) who find that larger firms have more developed networks and access to capital, thereby leading to less negative stock market returns.

The quality of the model also appears to have improved significantly in the second-stage regressions. The adjusted correlation coefficient (R^2) increases dramatically with the addition of the WFPCT1, or unexpected layoff variable, relative to the stage-one tests. The adjusted R^2 measure more than doubles.27

Conclusion

The size of the layoff as a percentage of the workforce is related to the financial distress level of the firm. The positive coefficient estimate for the unexpected layoff portion suggests that the market isn't reacting to just the size of the layoff announcement, but to the extent to which the reduction is different than its prior expectations. While the current study confirms prior findings that the overall reaction of the stock market to layoff announcements is negative (Worrell et al., 1991, Ofek, 1993, and Iqbal and

26 Variance inflation factor analysis is done for the WFPCT and WFPCT1 variables due to their high correlation and is found to be less than 10, indicating no serious multi-collinearity issues.

27 When the study is restricted to the original study years, it climbs to greater than .20 for the Iqbal and Shetty (1995) model.

Shetty, 1995), distressed firms tend to experience a more negative reaction than healthy firms among firms that layoff the largest percentage of their workforce and a more positive result for firms that layoff between 0.5% and 2% of their workforce.

Our findings suggest that the two hypotheses proposed in prior literature, the Financial Distress and Potential Benefit Hypotheses, are insufficient in evaluating all the possible market reactions to layoff announcements. Distressed firm shareholders may react positively to a layoff announcement if it is perceived to signal that management is taking steps to alleviate the distress (PBH), if the layoff is lower than expected (FDH), or if it lessens the perceived probability of bankruptcy. For financially healthy firms, where the probability of financial demise may be negligible, a positive reaction could indicate an expectation for an improvement of future productivity, an increase in the confidence of management's willingness to deal with the firm's problems, or if it is believed that the cuts will increase financial slack allowing for the implementation of future positive net present value projects. On the other hand, for the same workforce reductions, a negative reaction could be expected if excess cash flows already exist and the risk of future agency conflicts is perceived to increase. None of these arguments include how the size of the layoff impacts the strength of the market's reaction to this asymmetric release of information. While we believe the positive and negative statistically significant reactions among healthy and distressed firms are due to a combination of financial slack, improved efficiency and increased probability of bankruptcy arguments, further testing will be required to determine what different effects may dominate across firms and through time.

Table 1. Summary Statistics 1980-2002

Table entries represent summary statistics for the years 1980-2002 taken from Compustat, CRSP and Lexis-Nexis. SIZE is the natural logarithm of the book value of assets at the beginning of the period for each firm-year announcement. WFPCT is the percentage of the work force laid off according to the announcement. LVG is the ratio of total debt to total assets. FREQ takes a value of one when the firm has announced more than one layoff in the prior twelve months and a value of zero otherwise. UP takes a value of one during an expansionary economy, defined by NBER as the trough to peak period of the economic cycle.

Mean	Firm-yrs	SIZE		WFPCT		LVG		FREQ		UP		POP
Healthy	991	8.6144		0.0507		0.2391		0.5041		0.8471		0.0728
Distressed	349	7.8816		0.0947		0.3257		0.4463		0.7881		0.0678
p-value		<0.0001	***	<0.0001	***	<0.0001	***	0.0589	*	0.0159	**	0.7508
Median												
Healthy	991	8.6984		0.0230		0.2238		1.0000		1.0000		0.0000
Distressed	349	8.2311		0.0500		0.3149		0.0000		1.0000		0.0000
p-value		<0.0001	***	<0.0001	***	<0.0001	***	0.0589	*	0.0100	***	0.7508

*** Statistically significant at the .01 level or better, **Statistically significant at the .05 level or better, * Statistically significant at the .10 level or better

Table 2. Layoff Announcement Effects

This table contains the cumulative average abnormal return for days t=[-2,0] calculated using the market model as in Patel (1976) and data from the Center for Research in Security Pricing (CRSP). P-values from the Patel (1976) test are contained in parenthesis. We also report the cumulative average abnormal returns for the full sample period for all announcements (Total Data Set) and for uncontaminated announcements (Clean Data Set).

	Full Sample Period	
	1980-2002	
Total Data Set	-0.91	***
	(<0.0001)	
Firm-year obs.	4570	
Clean Data Set	-0.45	***
	(<0.0001)	
Firm-year obs.	1680	

*** Statistically significant at the .01 level or better, ** Statistically significant at the .05 level or better, * Statistically significant at the .10 level or better

Table 3. Model of Expected Layoff Level - First-stage Tobit Estimation

This table contains coefficient estimates for a hazard model where the dependent variable is the actual fraction of the workforce that has been laid off during any given firm-year for all firms in the Compustat universe during the sample period 1980 – 2002. $E(L_1)$ contains coefficient estimates using only firm-specific independent variables. $E(L_2)$ contains coefficient estimates using only macro-economic independent variables and $E(L_3)$ contains estimates using both firm-specific and macro-economic independent variables. P-values are contained in parenthesis. SIZE is the natural logarithm of the book value of assets. LVG is the natural logarithm of the ratio of total debt to total assets. RTEARN is the ratio of retained earnings to total assets. CURRENT is the ratio of current assets to current liabilities. SLACK is the natural logarithm of earnings before interest and taxes. DIV is an indicator variable taking a value of 1 if a dividend announcement coincides with the layoff announcement and zero otherwise. FREQ is an indicator variable taking a value of 1 if the firm has another layoff announcement in the prior 12

months. DIVEST is an indicator variable taking a value of 1 if a divestiture announcement coincides with the layoff announcement and zero otherwise. HEALTHY is an indicator variable taking a value of 1 if the firm's EBITDA is less than 80% of interest expense as in Hovakimian and Titman (2004). PRIME is an annual prime lending rate during the year. PROGRO is the productivity rate during the year. UNEMP is unemployment rate during the year. TREASRATE is treasury rate during the year.

	$E(L_1)$		E(L2)		E(L3)	
Intercept	-0.7104	***			1.3052	***
	(<0.0001)				(0.0075)	
SIZE	-0.3469	***			-0.3882	***
	(<0.0001)				(<0.0001)	
LVG	-0.2475				-0.1490	
	(0.1722)				(0.3984)	
RTEARN	-0.0758	***			-0.0434	**
	(0.0002)				(0.0315)	
CURRENT	0.0628	***			0.0433	**
	(0.0014)				(0.0248)	
SLACK	-0.0012	***			-0.0007	***
	(<0.0001)				(0.0018)	
DIV	0.8699	***			0.9485	***
	(0.0019)				(0.0005)	
FREQ	-0.1707	***			-.0694	
	(0.0048)				(0.2474)	
DIVEST	0.0795				-0.0588	
	(0.1937)				(0.3252)	
DISTRESS	0.3786	***			0.2238	***
	(<0.0001)				(0.0005)	
PRIME			0.0999	***	-0.0306	
			(0.0078)		(0.5613)	
PROGRO			0.1126	***	0.0291	
			(<0.0001)		(0.2780)	
UNEMP			-0.1394	***	-0.1794	***
			(0.0068)		(0.0089)	
TRES			-0.1371	***	-0.0703	
			(0.0074)		(0.2411)	
No. Obs.	113,341		168,937		113,341	
Adj. R^2	0.2905		0.0072		0.2942	

*** Statistically significant at the .01 level or better, ** Statistically significant at the .05 level or better, * Statistically significant at the .10 level or better

Table 4. Actual vs. Expected Level of Layoffs

This table contains a comparison of the means and medians of the realized percentage of workforce reduction versus the expected percentage of workforce reduction as predicted by the first-stage tobit estimation for those firms that had a workforce reduction. All numbers are in percentages. The unexpected workforce reduction is defined as the difference between the realized reduction and the expected reduction forecast by application of $E(L_3)$ as contained in Table 3. Panel A contains the sample means and medians for the sample as divided into halves and quartiles according to the level of the unexpected workforce reduction. Panel B partitions each half of the sample from Panel A according to each observation's classification as healthy or distressed as in Hovakimian and Titman (2004). For example, of the 402 firm-years that had a below median unexpected level of workforce reduction in Panel A, 79 were classified as distressed and 323 were classified as healthy. Panel C partitions each quartile of the sample from Panel A according to each observation's classification as healthy or distressed as in Hovakimian and Titman (2004). For example, of the 201 firm-years in the Panel A quartile with the smallest unexpected level of workforce reduction (Q1), 34 were classified as distressed and 167 were classified as healthy. The quartiles are presented in ascending order of departure from

expectations.

Panel A

		Means			Medians		
	Obs.	Actual	Expected	Difference	Actual	Expected	Difference
Below Median	402	1.1717	0.1007	1.0710	0.8375	0.0415	0.7960
Above Median	402	12.805	2.0531	10.7520	10.7727	0.2277	10.5450
Q1 (smallest)	201	0.3802	0.0707	0.3095	0.3659	0.0280	0.3379
Q2	201	1.9554	0.1304	1.8250	1.8800	0.0605	1.8195
Q3	201	6.0067	0.4520	5.5547	5.7633	0.0963	5.6670
Q4 (largest)	201	19.603	3.6541	15.9493	15.7413	0.5677	15.1736

Panel B

		Means			Medians		
Distressed	Obs.	Actual	Expected	Difference	Actual	Expected	Difference
Below Median	79	1.3384	0.1636	1.1748	1.0357	0.0853	0.9504
Above Median	149	15.924	4.0847	11.8393	12.50000	0.7895	11.7105
Healthy							
Below Median	323	1.2907	0.4159	0.8748	0.7895	0.0367	0.7528
Above Median	253	10.635	0.4439	10.1919	7.8926	0.0911	7.8015

Panel C

		Means			Medians		
Distressed	Obs.	Actual	Expected	Difference	Actual	Expected	Difference
Q1 (smallest)	34	0.4184	0.1552	0.2632	0.4148	0.0492	0.3656
Q2	39	2.1406	0.1710	1.9696	2.0200	0.1070	1.9130
Q3	54	5.9622	0.9580	5.0042	5.7143	0.2317	5.4826
Q4 (largest)	95	21.586	5.8620	15.7245	18.1818	1.6496	16.5322
Healthy							
Q1 (smallest)	167	0.3723	0.0533	0.3190	0.3642	0.0210	0.3432
Q2	162	1.9109	0.1206	1.7903	1.7929	0.0464	1.7465
Q3	147	6.0230	0.2675	5.7555	5.8063	0.0776	5.7287
Q4 (largest)	106	17.842	1.6938	16.1490	14.0555	0.2744	13.7811

Table 5. Abnormal Returns Partitioned by Actual vs. Expected Level of Layoff

This table presents the cumulative average abnormal returns for days t=[-1,0] categorized by the unexpected percentage of workforce reductions (actual less expected layoff percentages) where the expected workforce reductions are calculated using the results of the Tobit estimation procedure presented in Table 3. Panel A presents the equal and value-weighted cumulative average abnormal returns for the halves and quartiles separated by the level of unexpected workforce reduction. Panel B partitions each half of the sample from Panel A according to each observation's classification as healthy or distressed as in Hovakimian and Titman (2004). For example, of the 402 firm-years that had a below median unexpected level of workforce reduction in Panel A, 79 were classified as distressed and 323 were classified as healthy. Panel C partitions each quartile of the sample from Panel A according to each observation's classification as healthy or distressed as in Hovakimian and Titman (2004). For example, of the 201 firm-years in the Panel A quartile with the smallest unexpected level of workforce reduction (Q1), 34 were classified as distressed and 167 were classified as healthy. The quartiles are presented in ascending order of departure from expectations. Results that support either the Financial Distress Hypothesis or Potential Benefits Hypothesis are indicated by the use of the initials FDH and PBH, respectively.

Panel A

		Equal-Weighted			Value-Weighted		
	Obs.	**CAR [-1,0]**		Hyp.	**CAR [-1,0]**		Hyp.
Below Median	402	-0.02			-0.18		
Above Median	402	-1.14	***	FDH	-1.20		
Q1 (smallest)	201	-0.16			-0.22		
Q2	201	0.00			-0.15		
Q3	201	0.46	*	PBH	0.29		
Q4 (largest)	201	-2.75	***	FDH	-2.70		

Panel B

		Equal-Weighted			Value-Weighted		
Distressed	Obs.	**CAR [-1,0]**		Hyp.	**CAR [-1,0]**		Hyp.
Below Median	79	0.27			0.12		
Above Median	149	-2.54	***	FDH	-2.63		
Healthy							
Below Median	323	-0.15			-0.25		
Above Median	253	-0.33			-0.37	***	FDH

Panel C

		Equal-Weighted			Value-Weighted		
Distressed	Obs.	**CAR [-1,0]**		Hyp.	**CAR [-1,0]**		Hyp.
Q1 (smallest)	34	-0.70			-0.69		
Q2	39	1.11	**	PBH	0.83		
Q3	54	0.14			-0.12		
Q4 (largest)	95	-4.06	***	FDH	-4.05	***	FDH
Healthy							
Q1 (smallest)	167	-0.05			-0.12		
Q2	162	-0.26			-0.38		
Q3	147	0.58	**	PBH	0.44	*	PBH
Q4 (largest)	106	-1.58	***	FDH	-1.50	***	FDH

*** Statistically significant at the .01 level or better, ** Statistically significant at the .05 level or better, * Statistically significant at the .10 level or better

Table 6. Unanticipated Layoff Announcement Effects

Second-stage Estimation

This table presents coefficient estimates that account for the inclusion of the unexpected component of the layoff announcement. Table entries are coefficient estimates for a cross-sectional regression where the dependent variable is the abnormal return for days t=[-1,0] around the layoff announcement. SIZE is measured as the natural logarithm of book value of total assets at the beginning of the year of the layoff announcement. WFPCT is the size of layoff stated as a percentage of the total workforce. LVG is the natural logarithm of total firm debt to total assets. FREQ takes a value of 1 for those firms that have multiple firm observations within a twelve-month calendar period and a value of zero otherwise. WFPCT1 represents the unanticipated fraction of the workforce laid off and is calculated as the difference between actual percentage laid off and the expected percentage layoff using the Tobit model from the first stage estimation. UP takes a value of 1 for those layoff announcements that occur during an expansionary economy and zero otherwise. The state of the economy is as determined by NBER with an expansionary economy covering the trough to peak months.

Intercept	0.01420	
	(0.3459)	
DISTRESS	-0.00157	
	(0.7946)	
SIZE	-0.00129	
	(0.4385)	
WFPCT	-0.44972	***
	(<0.0001)	
LVG	-0.00242	
	(0.8766)	
FREQ	0.01106	**
	(0.0399)	
WFPCT1	0.37906	***
	(<0.0001)	
UP	0.00006	
	(0.1641)	
Sample Size	1203	
F-Statistic	20.50	
Adj. R^2	0.1627	

*** Statistically significant at the .01 level or better ** Statistically significant at the .05 level or better * Statistically significant at the .10 level or better

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COLLEGE STUDENTS' ATTITUDES AND BEHAVIORS TOWARDS THEIR PERSONAL FINANCIAL RESPONSIBILITIES

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ABSTRACT

Current literature review has indicated that college freshmen are not good money managers and often ended in financial crisis during their first year of campus life. Hence, the primary purpose of this research is to investigate (1) if a relationship exists between college freshmen's ability to manage their personal finance successfully; (2) the factors (determinants) that impact the college freshmen's financial management skills; and (3) the possibility that personal financial technology tools play a significant role in assisting college freshmen to manage their money issues.

A survey questionnaire was designed to solicit useful data to investigate the relationship between personal financial technology tools and the achievement of personal financial management responsibilities by college freshmen. This survey instrument also collected demographics information such as, gender, age, family background, and the participant's intended field of study at the college. The research results identified several differing effects determined by gender of the use of technology (as defined by the use of software program and the Internet) upon financial responsibility. Continuous research will focus on determining if, and how, the use of personal financial technology should be

incorporated into the college course curriculum in much the same way as computer literacy has been incorporated.

In conclusion, this research utilizes a quantitative instrument to determine whether adopting technology can assist college freshmen in successfully managing their financial responsibilities.

Introduction

A 2005 annual survey conducted by Visa USA indicated that parents are seriously concerned with the development of their children's personal money management skills. Undoubtedly, making the major transition from high school to college, accepting the pressing responsibilities of maturity, and learning to accept personal financial responsibility is a huge task that all college freshmen must face. These college freshmen are tomorrow's financial decision makers, who desperately need the information and opportunities to build their personal financial skills. Financial skills are more than just budgeting; it includes budgeting and using credit and protecting oneself from phishing and identity theft. College freshmen need to be prepared so they can avoid scams and rip offs. Accepting financial responsibilities also means deciding if, and how, they are going to use credit and whether they will be able to manage debt.

In many higher-level educational institutions in this country, freshman orientation sessions are conducted to help students maintain a smoother transition from high school to college life. However, an important aspect of personal development that seems to have been overlooked in these offerings is helping students manage their financial responsibilities.

This study will commence with a review of the existing literature regarding the personal money management skills of college students. The next major section will describe the research methodology, the survey questionnaire, the participants, and the environment of the participants. Findings from the survey questionnaires are tabulated and summarized, as well as the research limitations, are discussed in the third section. The study will conclude with a summary of the research findings and several practical implications and recommendations derived from this study.

Literature Review

Previous studies had examined the various independent variables and their relationship to the personal financial management responsibility of college students (Norvilitis, et al., 2006; Joo, Grable, & Bagwell, 2003; Mansfield, Pinto, & Parente 2003; Roberts & Jones, 2001). Many of the empirical studies conducted in this literature review reveal a wide variety of behaviors among college students, and that students do not have a monthly budget, often spend more than they earned, and were unable to discuss their personal financial responsibilities and obligations with their peers. Additionally, other research investigated the relationship between college freshmen and their money management issues (Masuo, et

al., 2004; Murphy & Archer, 1996; Kidwell & Turrisi 2004; Schachter, 1997). These studies offer insights about college students' needs, attitudes, and knowledge about money management. For instance, the study results indicated that freshmen students spend more money on food and entertainment because of the social adjustment during the first year of college (Norvilitis, et al., 2006). A survey conducted at a regional Texas University by James et al. (2002) revealed that the juniors and seniors in the Introductory Finance classes lack the basic financial knowledge regarding their own finances and retirement. This conclusion is further supported by several earlier studies by Hamemesh, et al. (1993) and Richman (1993). A recent pilot study conducted by Borden, Lee, Serido, and Collins (2008) observed that financial education seminar has a positive impact on the students' attitudes towards managing their financial responsibilities.

Several studies have indicated that gender plays a significant role in the management of college students' financial obligations (Carpenter & Moore, 2008; Chen & Volpe, 1998, 2002; Harris/Scholastic Research, 1993). Chen and Volpe (2002) stated that female college students tends to have less financial knowledge (financial literacy), have less enthusiasm for, lower confidence, and less willingness to learn about personal finance topics as compared to English or humanity subjects. Basically, the study concluded that the female students' preference for English and humanity subjects led to their decreased enthusiasm for financial topics, which subsequently resulted in a decrease in their financial knowledge. Further, Carpenter and Moore's (2008) investigation of the relationship between gender and college students' credit behavior concluded that the male students tend to have a higher level of financial independence than the female students. On the contrary, Hayhoe et al. (2000) argued that there is no significant difference in the financial confidence between the male and female students.

Besides gender, current literature also cited culture as a significant player in the development of personal financial responsibilities. In their multi-dimensionality, cross-cultural research, Masuo, et al. (2004) concluded that the Japanese and Korean college students held different and often contrasting viewpoints regarding money issues from the American students. The most recent cross-cultural study by Grable, Park, and Joo (2009) concluded that Koreans in general are financially more responsible than the Americans and that financial knowledge does play an important part in the participants fulfilling their financial responsibility. According to a 2006 survey administered by MasterCard to a group of Taiwanese college students, 50% of all the students surveyed claimed that they have good financial skills, the females, however, seems to possess better financial management skills than their male counterparts. The survey further revealed that twice as many male students (14.7%) compared to the female students (7.6%) found themselves in financial crisis.

Classic behavioral studies have suggested that the knowledge and use of technology has become a necessity in all aspects of our society (Nelson, Wiese, & Cooper, 1991; McMillan & Forsyth, 1991). Research conducted by Woodrow (1991) using Gressard and Loyd's (1985) Computer Attitude Scale (anxiety about computers, liking towards computers, and confidence with computers) suggested that attitudes towards the use of computer technology can in fact differ based upon gender. Research

conducted by McDonald (1996), on the other hand, reviewed that an individual's positive attitude is negatively correlated with technology and individual achievement.

Although there were tons of research that examine the relationship between college students and their ability to manage their financial responsibilities, there were, however, relatively few studies investigating the impact of using personal financial technology tools to manage personal financial responsibilities. As early as 1963, Campbell and Stanley conducted a qualitative study using control and treatment groups to investigate the relationship between college freshmen's financial responsibility, technology, attitudes, and gender. Stern (2004) suggests that now is a good time to utilize software programs for personal finances. However, Whitehouse (2004) insists that using financial computer programs can be time consuming. Henry (2006), on the other hand, argues that "technology issues" are really just other issues in disguise. While these studies provide some much needed guidance to the usefulness of financial management tools, additional studies are still needed. Therefore, this study attempts to further investigate the relationship between the use of financial technology tools by college students and their abilities to manage their personal finances.

This informative review summarizes the current research on college students' financial management skills and their inability to manage their personal finances. This study intends to examine both the impact of gender and the use of personal financial management tool(s) on the college freshmen's ability to make better financial decisions.

Research Methodology

The purpose of this research is to determine the relationship between the usage of personal financial technology tools and the freshman's attitudes towards his/her financial responsibilities. Therefore, this research is conducted to full-time students enrolled at a four-year higher education institution.

Participants

This study was conducted at a medium-sized, four-year university located in central Virginia. The survey questionnaire was administered to 104 first-year freshmen during the first week of their freshman orientation class.

Survey Instrument

A survey questionnaire was developed to solicit data that would help to investigate the relationship, directly or indirectly, between various independent factors and the dependent variable. The survey questionnaire was divided into four major sections:

1. The first section, titled Demographics, as illustrated in Figure 1, solicited personal information from the participants, such as their age, gender, and number of siblings.

2. The second section, titled Education, as illustrated in Figure 2, requested information relating to the self-perception of the respondent of their academic achievement as well as their placement within one of the three colleges at the university where the study was conducted.
3. The third section, titled Financial Tools, as illustrated in Figure 3, collected information from the respondent regarding the use of technical financial tools such as software program and/or Web-based applications.
4. The last section, titled Personal Finance and Financial Management, as illustrated in Figure 4, gathered information pertaining to the self-reported personal financial management responsibility and knowledge of the respondent.

Demographics
☐☐ Age (enter age in years)
☐ Male ☐ Female (check one)
☐☐ Number of older siblings
☐☐ Number of younger siblings
☐☐ Number of siblings of same age
Check one of the following regarding your household during the prior four years:
☐ Had both male and female parents in household
☐ Had only female parent in household
☐ Had only male parent in household
☐ Head of household was not a parent (i.e. was Aunt, Uncle, Grandparent, etc.)

Figure 1. Section I of Survey Questionnaire: Demographics

Education

Check one of the following:

☐ My math and verbal SAT scores were within 50 points of each other

☐ My math SAT scores were more than 50 points greater than my verbal scores

☐ My verbal SAT scores were more than 50 points greater than my math scores

Check one of the following:

☐ I was considered a straight A student

☐ I was considered a straight A/B student

☐ I was mostly a B student

☐ I was mostly a B/C student

☐ I was mostly a C student

Check one of the following regarding your intended course of study:

☐ I plan on pursuing a major in the College of Business & Economics

☐ I plan on pursuing a major in College of Arts & Sciences

☐ I plan on pursuing a major in the College of Education & Human Services

Figure 2. Section II of Survey Questionnaire: Education

Financial Tools

Check all the software programs that you currently use to track your bank accounts and/or expenses:

☐ Quicken

☐ Microsoft Money

☐ Microsoft Excel

☐ Other Enter _____

☐ Other Enter _____

Check all of the following that you currently use to track your bank accounts and/or expenses:

☐ Bank Account Website

☐ Debit Card Website

☐ Credit Card Website

☐ Bill Payment Website

Figure 3. Section III of Survey Questionnaire: Financial Tools Used

Personal Finance & Financial Management
Check all of the following that you currently have:
☐ Checking account
☐ Debit card account
☐ Credit card account
Check one of the following:
☐ I reconcile my accounts monthly
☐ I sometimes reconcile my accounts
☐ I never reconcile my accounts
☐ I do not know what reconciling an account means
If you have a credit card, check one of the following:
☐ I always pay off my balance when my statement arrives
☐ I sometimes carry a balance
☐ I always carry a balance
If you have a checking account or debit card, check one of the following:
☐ In the past 6 months, I have never over drafted
☐ In the past 6 months, I have over drafted once or twice
☐ In the past 6 months, I have over drafted more than 3 times

Figure 4. Section IV of Survey Questionnaire: Personal Financial Management

Dependent and Independent Variables

The dependent variable in this study is the freshman's personal financial management responsibility, which is defined by self-reported behaviors such as not overdrawing a personal checking account or reconciling their bank accounts on a monthly basis.

Potential independent variables in this study include the use of personal financial technology tools and the participant's gender and age. Personal financial technology tools include the utilization of software programs such as Intuit's Quicken, Microsoft Money, Microsoft Excel, or online banking.

Specifically, the research also attempts to determine if the use of financial technology tools is an independent variable, a dependable variable, or a modifier.

Survey Findings and Research Results

After the survey questionnaire was administered to the participants, the data were collected, consolidated, and summarized. The survey findings and research results were discussed in this section.

Participants

This study was conducted at a medium-sized, four-year university located in central Virginia. There were three colleges: Business and Economics, Education and Human Services, and Liberal Arts and Sciences. The survey questionnaire was administered to a group of 104 first-year freshmen during the first week of their freshman orientation class. Majority of the freshmen participated in this study were enrolled into the Business College,76 respondents versus 17 from the College of Arts and Science and 6 from the College of Education and Human Services. Five participants did not indicate their academic area of discipline. A total of 86 freshmen -- 38 female and 48 male participants -- reported that they have a bank and/or debit account. Eighteen surveys were eliminated since the responses did not have a bank account. The collected data also show that, of the 104 respondents, 25 male and 14 female participants have a credit card.

The study also collected additional information about the demographic, educational, family background, and other attributes which might have acted as independent variables or as modifiers.

Technology Usage (Table 1)

Table 1 summarized the utilization of the various financial technology tools by the participants. These personal financial technology tools include Intuit's Quicken, Microsoft Money, and Microsoft Excel. The data is broken down by gender.

Information Regarding Technology Usage			
	Female	**Male**	**Total**
Use Intuit's Quicken	2	5	7
Did Not Use Intuit's Quicken	45	52	97
Total	47	57	104
Use Microsoft Money	5	2	7
Did Not Use Microsoft Money	42	55	97
Total	47	57	104
Use Microsoft Excel	13	34	47
Did Not Use Microsoft Excel	13	44	57
Total	26	78	104

Table 1. Information Regarding Technology Usage

Study Results

This section summarizes the findings of this research based on the collected data.

Summarized Data for Account Reconciliation and Bank Overdraft (Table 2)

The data for account reconciliation are divided into two major categories. The first category consists of participants who reconcile their bank accounts monthly. The other category, labeled as "Other", includes all participants who are not familiar with account reconciliation, who sometimes or never reconcile their bank accounts. The data for bank overdraft are classified into the following two major categories: participants who did not overdraft on their bank accounts during the last six months, and participants who have one or more bank overdrafts during the last six months.

The data in Table 2 revealed that 39.5% of the female participants who have a bank account, compared to 45.8% of their male counterparts, tend to reconcile their bank accounts monthly. This data clearly shows that slightly more than 6% of the male students reconcile their bank accounts monthly more than their female counterparts. On the contrary, Table 2 also reveals that 78.9% of the female freshmen, compared to 75% of the male freshmen, did not have any bank overdrafts in the past 6 months. These differences are clearly illustrated by the chart in Figure 5. This finding supports earlier research that female college students are less likely to experience a financial crisis than their male counterparts (AsiaPulse, 2006).

Surprisingly, it appears that the female participants in the study have fewer bank overdrafts than their male counterparts, although they did not reconcile their bank accounts as often as the male respondents. Hence, the empirical data collected in this study seems to imply that the female participants' frequency of reconciling their bank accounts might not be directly related to their personal financial management skills.

Account Reconciliation Information			
	Female	Male	Total
Monthly Reconciliation	15	22	37
Other	23	26	49
Total # of Respondents	38	48	86
Monthly Reconciliation (in %)	39.5%	45.8%	43.0%
Other (in %)	60.5%	44.2%	57.0%
Bank Overdraft Information			
	Female	Male	Total
No Overdrafts in Last 6 Months	30	36	66
One or More Overdrafts	8	12	20
Total # of Respondents	38	48	86
No Overdrafts (in %)	78.9%	75.0%	76.7%
One or More Overdrafts (in %)	21.1%	25.0%	23.3%

Table 2. Data for Account Reconciliation and Bank Overdraft

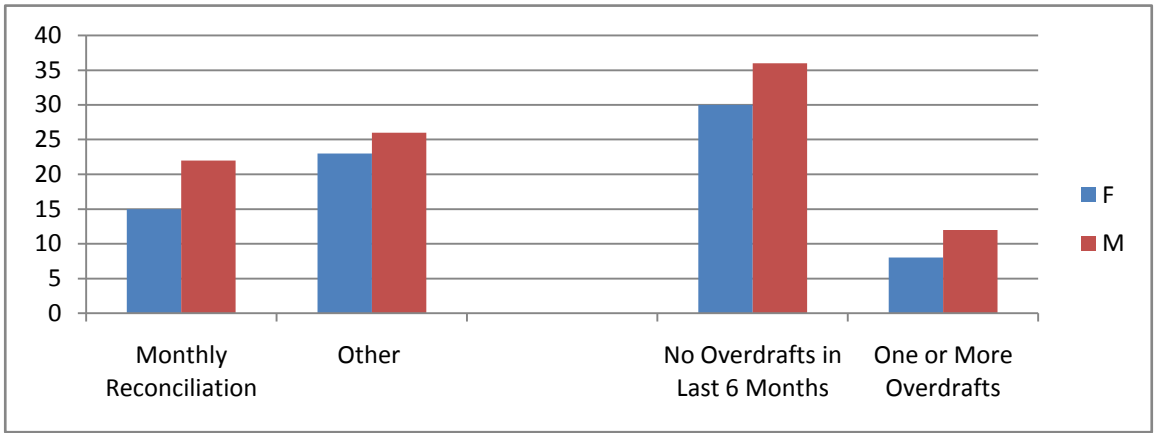

Figure 5. Account Reconciliation and Bank Overdraft

Relationship between Account Reconciliation and Software Program Utilization (Table 3)

This study attempts to investigate the use of financial software programs by college freshmen and the relationship between financial software programs usage and the fulfillment of personal financial

responsibilities. From Table 3, the researchers found that 42.9% of the female bank account holders who utilize a personal financial software program will reconcile their bank accounts monthly, while only 38.7% of their female counterparts who did not utilize a personal financial software program will reconcile their bank accounts monthly. While the use of personal financial software program seems to coincide with an increase in the female participants who reconcile their accounts monthly, Table 2 also demonstrates that 42.9% of the male bank account holders who utilize a personal financial software program will reconcile their bank accounts monthly while 46.3%, an increase of 3.4% compared to their male counterparts who did not utilize any personal financial software program, reconciled their bank accounts monthly.

In conclusion, while the use of personal financial software program would coincide with an increase in the female participants reconciling their bank accounts monthly, there is a decrease in the number of male software program users who reconcile their bank accounts.

Account Reconciliation versus Software Program Usage			
	Female	**Male**	**Total**
Monthly Reconciliation	3	3	6
Other	4	4	8
Total # of Respondents	7	7	14
Monthly Reconciliation (in %)	42.9%	42.9%	42.9%
Other (in %)	57.1%	57.1%	57.1%
Account Reconciliation versus None Software Program Usage			
	Female	**Male**	**Total**
Monthly Reconciliation	12	19	31
Other	19	22	41
Total # of Respondents	31	41	72
Monthly Reconciliation (in %)	38.7%	46.3%	43.1%
Other (in %)	61.3%	53.7%	56.9%

Table 3. Relationship between Account Reconciliation and Software Program Utilization

Relationship between Account Reconciliation and Online Banking (Table 4)

Table 4 shows the results from the survey demonstrating that 41.7% of the female participants who utilize online banking reconcile their bank accounts monthly while only 35.7% of their female

counterparts who did not utilize online banking reconcile their bank accounts monthly. While the use of personal financial software program seems to coincide with an increase in the females reconciling their bank accounts monthly, Table 4 also shows that 45.7% of the male bank account holders who utilize a personal financial software program did reconcile their bank accounts monthly while 46.2%, a slight increase of 0.5% of their male counterparts who did not utilize a personal financial software program, reconciled their bank accounts monthly.

In conclusion, the collected data seems to indicate that the use of online bank would coincide with an increase in the female freshmen reconciling their bank accounts monthly, but a slight decrease in the number of male freshmen reconciling their bank accounts.

Account Reconciliation versus Online Banking Usage			
	Female	**Male**	**Total**
Monthly Reconciliation	10	16	26
Other	14	19	33
Total # of Respondents	24	35	59
Monthly Reconciliation (in %)	41.7%	45.7%	44.1%
Other (in %)	58.3%	54.3%	55.9%
Account Reconciliation versus None Online Banking Usage			
	Female	**Male**	**Total**
Monthly Reconciliation	5	6	11
Other	9	7	16
Total # of Respondents	14	13	27
Monthly Reconciliation (in %)	35.7%	46.2%	40.7%
Other (in %)	64.3%	53.8%	59.3%

Table 4. Relationship between Account Reconciliation and Online Banking

From Tables 3 and 4, it appears that female participants who used some kind of technology tools reconcile their bank account more often than the female students who do not use any kind of financial technology. We can also conclude that the male participants who use some kind of technology tools tends to reconcile their bank account somewhat less than the male students who do not use any kind of technology. From the same tables, it also appears that when the utilization of software program is concerned, the female students tend to reconcile their accounts as often as the male participants.

Relationship between Account Reconciliation and Technology Usage (Table 5)

Because the data in Tables 3 and 4 could possibly represent overlapping data where a respondent might utilize both a financial software program and online banking, Table 5 provided data for college freshmen who reconciled their accounts monthly and who may or may not use any kind of personal financial technology tool(s). The results now show that the frequency of monthly account reconciliation for both the female and male participants decrease when the usage of either a software program or online banking is involved.

Account Reconciliation versus Technology Usage			
	Female	**Male**	**Total**
Monthly Reconciliation	10	16	26
Other	17	20	37
Total # of Respondents	27	36	63
Monthly Reconciliation (in %)	37.0%	44.4%	41.3%
Other (in %)	63.0%	55.6%	58.7%
Account Reconciliation versus None Technology Usage			
	Female	**Male**	**Total**
Monthly Reconciliation	5	6	11
Other	6	6	12
Total # of Respondents	11	12	23
Monthly Reconciliation (in %)	45.5%	50.0%	47.8%
Other (in %)	54.5%	50.0%	52.2%

Table 5. Relationship between Account Reconciliation and Technology Usage

Comparing the summarized data in Table 5, female participants who utilize some kind of software programs and/.or online banking tends to reconcile their bank accounts monthly less often than the

female freshmen who did not use any kind of financial technology tools. Again, comparing the data in Table 5, the male participants perform somewhat less monthly account reconciliation than other male participants when the use of technology tools is considered. It would appear from Table 5 that, generally speaking, the female participants will reconcile less than their male counterparts. However, the data in Tables 3 and 4 show that perhaps the use of a software program and/or online banking might have a modifier effect -- partially based on gender -- on a participant's frequency of reconciling his/her bank account monthly.

4.2.5 Relationship between Bank Overdraft and Software Package Usage (Table 6)

Table 6 demonstrates that the use of personal financial software program tends to yield better financial management among the female participants but not among the male counterparts. When taking into account the use of personal financial management software program, the number of females not overdrawing on their bank accounts increased from 77.4% to 85.7%, while the percentage for their male counterparts who did not overdraw on their bank accounts actually decreased from 75.6% to 71.4%.

Bank Overdraft versus Software Program Usage			
	Female	**Male**	**Total**
No Overdrafts in Last 6 Months	6	5	11
One or More Overdrafts	1	2	3
Total # of Respondents	7	7	14
No Overdrafts (in %)	85.7%	71.4%	78.6%
One or More Overdrafts (in %)	14.3%	28.6%	21.4%
Bank Overdraft versus None Software Program Usage			
	Female	**Male**	**Total**
No Overdrafts in Last 6 Months	24	31	55
One or More Overdrafts	7	10	17
Total # of Respondents	31	41	72
No Overdrafts (in %)	77.4%	75.6%	76.4%
One or More Overdrafts (in %)	22.6%	24.4%	23.6%

Table 6 Relationship between Bank Overdraft and Software Program Usage

Relationship between Bank Overdraft and Online Banking (Table 7)

Table 7 again demonstrates that the use of online banking results in better financial management among the female respondents, but not in the male counterparts. When taking into account the use of online banking, the number of female respondents not overdrawing on their bank accounts increased from 71.4% to 83.3%, while the percentage for the male participants who did not have a bank overdraft actually decreased from 84.6% to 73.5%.

Bank Overdraft versus Online Banking Usage			
	Female	**Male**	**Total**
No Overdrafts in Last 6 Months	20	25	45
One or More Overdrafts	4	9	13
Total # of Respondents	24	34	58
No Overdrafts (in %)	83.3%	73.5%	77.6%
One or More Overdrafts (in %)	16.7%	26.5%	22.4%
Bank Overdraft versus None Online Banking Usage			
	Female	**Male**	**Total**
No Overdrafts in Last 6 Months	10	11	21
One or More Overdrafts	4	2	6
Total # of Respondents	14	13	27
No Overdrafts (in %)	71.4%	84.6%	77.8%
One or More Overdrafts (in %)	28.6%	15.4%	22.2%

Table 7. Relationship between Bank Overdraft and Online Banking Usage

Relationship between Bank Overdraft and Technology Usage (Table 8)

Because the prior tables could represent overlapping data where a participant might utilize both a software program and online banking, Table 7 was developed to present the frequency of overdrawing on a bank account by the two groups of participants based on the usage of a financial technology tool to manage their financial accounts.

The data in Table 8 demonstrates that the use of online banking results in better financial management among the female participants but not the male counterparts. When taking into account the utilization of online banking, the number of female participants not overdrawing on their bank accounts increased from 72.7% to 81.5%, while the percentage for the male participants who did not overdraw on their bank accounts actually decreased from 83.3% to 72.2%.

The results for Table 8 are consistent with the conclusions from Table 7 and again show that the frequency of overdrawing on a bank account decreases for female participants but yet increases for the male participants when the utilization of a financial technology tool is considered.

Bank Overdraft versus Technology Usage			
	Female	**Male**	**Total**
No Overdrafts in Last 6 Months	22	26	48
One or More Overdrafts	5	10	15
Total # of Respondents	27	36	63
No Overdrafts (in %)	81.5%	72.2%	76.2%
One or More Overdrafts (in %)	18.5%	27.8%	23.8%
Bank Overdraft versus None Technology Usage			
	Female	**Male**	**Total**
No Overdrafts in Last 6 Months	8	10	18
One or More Overdrafts	3	2	5
Total # of Respondents	11	12	23
No Overdrafts (in %)	72.7%	83.3%	78.3%
One or More Overdrafts (in %)	27.3%	16.7%	21.7%

Table 8. Relationship between Bank Overdraft and Technology Usage

Research Conclusion and Recommendations

This research study concluded that female freshmen who use some kind of technology tools tend to have fewer overdrafts than their female counterparts who did not use any financial technology tool at all. On the contrary, this study also reveals that male freshmen who use some kind of technology tools have a tendency to overdraft on their bank accounts than their male counterparts who did not use any kind of technology tools. In a broader picture, it appears that with or without technology, male students overdrew their bank accounts less often than their female counterparts, but with the incorporation of technology, the female students tends to overdraw on their bank accounts less often than their male counterparts. The female students also appear to use technology to their advantage in managing their personal financial responsibilities more often than their male counterparts.

The results from this research clearly support the belief that our young people do not possess the personal management skills to deal with money issues. Therefore, this study recommends the following two practical implications:

1) To prepare well-adjusted future money managers, higher education institutions need to offer a personal finance course to incoming college students, particularly the freshmen. Topics of interest should include, but are not limited to, balancing a checkbook; creating an income and expenses

balance sheet; understanding the various types of retirement plans; and using financial technology tools and online resources.

2) At the 2- or 4-year colleges that offer a computer applications course, financial concepts and strategies should be incorporated into this course, particularly when teaching the spreadsheet application. Topics of interest could include the payment function (PMT), future value (FV), present value (PV), and the what-if analysis.

Research Limitations

As with all research, the current study experienced some limitations. For instance, the sensitive nature of the topic may have limited students in their responses. Although the survey was anonymous, the nature of the self-report technique risks answers which may not be completely candid. Second, this is a very small sample which suggests that the results are limited. Third, the analysis conducted in this study assumes that the use of technology is an independent variable and not a dependent variable. A second study might indicate that the use of personal financial management technology tools is a variable acting as a modifier or perhaps it is a dependent variable.

Conclusions

Nonetheless, despite the research limitations, the study was valuable because the results from the survey questionnaire revealed some interesting trends about college students and their financial management behaviors. In particular, the different relationship between the use of technology and the frequency of overdrawing on a bank account based upon gender warrants a second study to confirm the results of the first study.

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WHO BEARS THE INCREASE IN HI (MEDICARE) TAX LIABILITY– EVIDENCE FROM THE CHANGE IN MEDICARE CONTRIBUTION BASE AFTER 1991

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ABSTRACT

This paper uses evidence from the increase in the Hospital Insurance (Medicare) contribution base from the Social Security Amendments in 1990 and 1993 to measure the impact of the increase in Hospital Insurance (HI) payroll tax liability on wage and working hours in the United States. Using data from several years of the Current Population Survey, I found that there was shifting of the increase in employers' portion of HI tax liability onto wage when the contribution base increased. Specifically, moving from an occupation-by-region cell with no workers making above the contribution base to one with all workers earning above the contribution base leads to a drop in the hourly wage rate by 19.87 percent. I found no disemployment effect due to the increase in the contribution base.

Introduction

The health bill that is aimed to change the health care and health insurance systems requires that the insurance company accept all applicants and insure pre-existing conditions. Expansion of insurance coverage will lead to an increase in health care premium. How this increase in labor cost will affect the labor market outcome is of interest to many economists and policy makers.

Empirical studies on the impact of an increase in nonwage labor costs on the labor market yield mixed results, ranging from no shifting of nonwage labor costs onto wage (Sommers (2005)), partial shifting (Hamermesh (1979), Neubig (1981), Bingley and Lanot (2002)), to full shifting (Anderson and Meyer (1997), Anderson and Meyer (2000), Gruber and Krueger (1991), Gruber (1994)).

The goal of this paper is to measure the impact of an increase in nonwage labor costs on wage and working hours in the United States, using evidence from changes in the Hospital Insurance (Medicare) contribution base from the Social Security Amendments in 1990 and 1993. The 1990 Amendments raised the maximum taxable earnings for HI from $51,300 in 1990 to $125,000 in 1991, with raises thereafter indexed to increases in average wages. The 1993 Amendments completely eliminated the maximum taxable earnings for HI effective in 1994, making all earnings subject to the HI tax starting 1994. These law changes, with the HI tax rate unchanged, raised the tax burden for individuals in the upper portion of the earnings distribution, but left HI tax burdens unchanged for workers in the low portion of the distribution, thus created plausibly exogenous treatment and control groups that can be

used to examine the effect of an increase in nonwage labor cost on wages and working hours in a quasi-experimental framework.

Using data from several years of the Current Population Survey and exploiting the occupation-region-year variations, I examine how the change in wage and working hours vary depending on the percentage of workers affected by the increase in taxable earning's cap before and after the law changes. My results indicate that there was a shifting of the employers' share of HI tax liability onto wage when the HI taxable earnings cap rose while holding the tax rate unchanged. Specifically, moving from an occupation-by-region cell with no workers above the taxable earning's cap to one with all workers above the cap led to a drop in wage rate by 19.87 percent. And I found no evidence of changes in working hours after the law changes in occupation-region cell with many workers whose earnings exceeded the pre-reform contribution base compared to other cells with workers whose earnings were typically below the base.

The paper is organized as follows. The next section gives background on the 1990 and 1991 Social Security Amendments. Section 3 explains the empirical strategy. Section 4 describes the data and regression framework. Section 5 discusses the empirical results on wage. Section 6 shows the empirical results on aggregate hours. The last section concludes.

Background

Medicare (Part A) was introduced by the 1965 social security law. It is designed to help people over the age of 65 or disabled pay for medical costs and is financed by the Medicare (Hospital Insurance, HI) portion of the Social Security payroll tax. The federal government uses the maximum taxable earnings to define the taxable base and then levies the statutory tax rate, which is applied equally to the employer and employee, to determine the tax liability. Prior to 1990, the contribution base for the Medicare (HI) component of the Old Age, Survivors, Disability, and Hospital Insurance (OASDHI) was the same as that for the Old Age and Survivors (OAS) and Disability Insurance (DI) programs. The 1990 Social Security Amendments raised the maximum taxable earnings for HI from $51,300 in 1990 to $125,000 in 1991, with raises thereafter indexed to increases in average wages (the nominal taxable bases were $130,200 and $135,000 in 1992, and 1993, respectively.) Compared to the nominal maximum taxable earnings of $51,300 in 1990, this law change led to an increase of 144% in the maximum taxable earnings in 1991, and a 134% increase in the real taxable earnings when deflated by the all-items Consumer Price Index (CPI). Later the 1993 Amendments completely eliminated the maximum taxable earnings for HI effective in 1994, making all earnings subject to the HI tax starting 1994. The current tax rates under the HI program are 1.45 percent for employees and employers, each, and 2.90 percent for self-employed persons.

Although the textbook model predicts full shifting of any increase in nonwage labor costs onto workers in the form of low wages, empirical studies on the impact of an increase in nonwage labor costs on labor

market outcomes yield mixed results, ranging from no shifting (Sommers (2005)), partial shifting (Hamermesh (1979), Neubig (1981), Bingley and Lanot (2002)), to full shifting (Anderson and Meyer (1997), Anderson and Meyer (2000), Gruber and Krueger (1991), Gruber (1994)). Cutler and Madrian (1998) showed that the rising health insurance costs during the 1980s increased the hours worked by those with health insurance by up to 3%.

This paper uses the Social Security law changes that changed the HI tax burden differently for workers in the different portions of earnings distribution before and after the law changes to examine the impact of nonwage labor costs on labor market outcome. Consider a policy change that raises the Medicare taxable earnings cap while holding the HI tax rate constant. On the labor supply side, the increase in the taxable earnings cap generates kinked budget sets for individual labor supply. For workers with earnings higher than the post-reform cap, the change of cap will have only income effect. For those who after the reform earned less than the pre-reform cap, the change of cap would have no effect at all. However, the change of taxable earnings cap would have both substitution and income effects on those whose post-reform earnings are between the pre-reform cap and post-reform cap. These differential substitution and income effects are not apparent from the textbook treatment used by the previous literature that assumes that the tax rate applies to all earnings.

On the labor demand side, holding the HI tax rate constant, an increase in the HI taxable earnings cap increases the firms' fixed cost for hiring workers with earnings above the cap, but does not change the variable cost of an additional worker-hour of labor demand for workers below the (pre-reform) cap. Because firms can change labor demand either by hiring more workers or by lengthening the working hours of existing workers, an increase of HI taxable earnings cap will influence firms' labor demand behavior by changing fixed versus variable labor costs. In equilibrium, the theoretical incidence of the HI payroll tax will be a complicated interaction of the labor demand and supply effects.

Empirical Strategy

The significant increase in the HI taxable earnings cap from $51,300 in 1990 to $125,000 in 1991 brought more workers under the cap. The increases in the percentage of workers below the earnings base indicate that HI tax liabilities increased for a subset of workers. Among the male workers aged between 20 and 55, about 7.9 percent had earnings above the taxable earnings cap in 1990. But in 1991, only 0.4% percent of the male workers aged between 20 and 55 had annual earnings above the 1991 cap. So roughly speaking, there were 7.5 percent (7.5 = 7.9-0.4) workers with earnings under the new cap but above the old cap. When the Amendments increased the cap to $125,000 in 1991, "similar" male workers in 1991 (i.e., those who shared the highest 7.9 percentiles of the earnings distribution) saw their HI payroll tax liability rise because more of their earnings was liable for the tax. These workers comprise the treatment group. Among those, 7.5 percent experienced an increased liability and a positive tax rate on marginal earnings, whereas the other 0.4 percent experienced an increased liability but a zero marginal tax rate.Contrastingly, similar workers below the 1990 cap in both years experienced no change in tax liability. These workers comprise the control group.

I use occupation-by-Census-region variation to define the "similar" workers. Firstly, given that there is a high correlation in the training and earnings potential of people in the same occupation, the Amendments would affect people who worked in the same job similarly. Specifically, workers in high-skilled occupations (e.g., lawyers) were more likely to have been affected by the increase in the earnings cap because of their high incomes, whereas most workers in low-skilled positions (e.g., short-order cooks) were unaffected by the increase in the cap. However, one issue with the reliance on occupation-level variation is that there may have been unobserved variables that influenced trends in the wages of high-skilled occupations in the treatment group and low-skilled occupations in the control group differently. To avoid this issue, I use occupation-by-Census-region variation. In particular, workers on the West Coast and in the Northeast have higher gross earnings than workers in the South, even within the same occupation. Because the maximum taxable earnings is applied uniformly across the country, but the *levels* of gross wages differ across areas, changes in the earnings base affected workers in the same occupation but in different areas of the country differently. For example, an increase in the taxable earnings cap should have raised the tax liability of lawyers in the Mid-Atlantic by more than lawyers in the Deep South, because northern lawyers are paid more. As the measure of area, I use the nine Census regions. Therefore, the increase in the HI taxable earnings cap induced occupation-by-region-by-calendar-year variation in HI tax liability. My identifying assumption is that this variation is uncorrelated with any within-occupation wage variation due to changing returns to skill or similar such factors. In empirical studies, I relate the hourly wage rate and working hours in each occupation-by-region-by-calendar-year cell to the percentage of workers in each cell that earned above the cap prior to the law changes — who have been at risk of higher HI tax burdens after the law changes.

Data and Regression Framework

In this paper, I use March Current Population Survey (CPS) 28 to estimate of the effect of the increase in HI taxable earnings cap after 1991 on wages and working hours. My sample includes prime-age male workers, defined as aged between 20 and 55, from the 1989-91 and 1994-96 March CPS. Since the survey asked about earnings in the previous calendar year, the wage and hours data I observe refer to 1988-1990 (the pre-reform years), and 1993-1995 (the post-reform years). Data from 1992 and 1993, which refer to the calendar years of 1991 and 1992 when the 1990 Amendments were first implemented, are excluded to avoid transitional issues. Individuals employed by any level of government and individuals with self-employment income are excluded. I limit my analysis of wages to prime-age male workers for two reasons. First, and foremost, the changes in the caps affected females to a much smaller degree than men. Essentially all females had earnings below the cap prior to the 1990 Amendments. Second, one concern is that changes in wages by occupation over time might be caused by changes in the composition of the workforce and not by the wage effects of tax policy if I include the wages of women and older and younger men. For example, if the increasing cap causes married women to leave the labor force in high-income occupations and married women have lower

28 Source: IPUMS CPS.

wages than others who work in those occupations, then the average wage of those occupations could change because of this change in composition and not because of changes in the wages of continuing workers. Assuming that prime-age men are not likely to alter their labor force participation much in response to the cap increases, examining shifts in their wages should avoid this problem. Therefore, my primary sample consists of 139,709 prime-age men. Table 1 presents selected descriptive statistics of wages and employment for the sample. Then I assign the sample to 7,496 occupation-by-region-by-year cells based on the workers' occupation, the Census region, and the sample year.

The regression framework is as the following,

$$\ln(w_{jkt}) = \beta_0 + \beta_1 P_{jk}^{above1988cap} + \beta_2\left(P_{jk}^{above1988cap} \times D_t^{post1988}\right) + \theta_j + \delta_k + \varphi_t + \gamma X_i + \mu_{jkt} \quad (1)$$

where the dependent variable, $\ln(w_{jkt})$, is the log of mean hourly wage rate in occupation *j*, Census region *k*, and year t. t. The variable $P_{jk}^{above1988cap}$, which ranges from 0 to 1, is the fraction of workers in 1988 in that occupation-by-region cell who earned more than the cap. It measures the treatment group: the proportion of workers in each occupation-by-region cell who, prior to the law change, would have been at risk of higher HI payroll-tax liabilities if a reform that raised the cap were to have been adopted. $D_t^{post1988}$ is a dummy variable that is one if the observed year is after the reform and zero otherwise. *X* is a vector of observable worker characteristics that affect wage, expressed as the percentage of workers that falls into each age, race, marital status, and education categories. It needs to bear in mind that because some cells are small, there might be outliers when generating the covariates such as age, education, race and marital status, which are expressed as percentages of workers in each demographic category.

The key explanatory variable is the interaction of $P_{jk}^{above1988cap}$ and $D_t^{post1988}$. The parameter associated with this interaction, β, measures the treatment effect: the differential impact on wages after the reform (relative to before the reform) of being in a cell in which all pre-reform workers were at risk of a higher tax liability because they earned above the pre-reform cap relative to a cell in which no workers were at risk. Because the specification also includes full sets of dummy variables for occupation, θ_j, region, δ_k, and year, ϕ_t, that control for fixed differences in wages across occupations, regions, and time, respectively, the ordinary least squares (OLS) estimator of β yields essentially a difference-in-difference estimate of the impact of the increase in the HI taxable earnings cap on wages.

Since the statutory burden of the tax is split equally between workers and employers, to the extent that employers were able to shift their statutory portion of the tax to workers in the form of lower wages, I would expect a negative sign for β. If β is zero, then the statutory and economic incidence of the tax is split equally. Finally, if β is positive, then workers were able to shift some of their statutory portion of the tax to employers.

Estimated Impact of the Increase in HI Taxable Earnings Cap on Wage

Column 1 of Table 2 shows the OLS estimate of β, which measures the effect of the change in HI taxable earnings cap after 1991 on wages, from the specification in equation (1). Standard errors, clustered by occupation and region, the primary unit of analysis, are shown in parentheses. The estimate, $\hat{\beta}$ = - 0.1709, indicates that workers in the occupation-by-region cells that had more individuals who earned above the taxable earnings cap in 1988, experienced lower real wages after the 1991, relative to the cells with fewer people above the cap in 1988. The size of the estimate indicates that moving from a cell with no workers above the pre-reform cap to a cell with all workers above the

pre-reform cap, after versus before the law change, reduced the gross wage by 17.09 percent. Based on the standard error, $\beta =)$ can be rejected in favor of the alternative that there was shifting.

In column 2, I allow for interactions of the demographic variables (expressed as the percentage of workers that falls into each age, race, marital status, and education categories) with the calendar-year dummy variables to address the potential concern that the composition of demographic characteristics might have changed over time in a way that affected the mean wage rate and was correlated with the changes in above-cap percentages. For example, young workers might work in high-skilled occupations, causing the log mean wage rate to fall if there was a positive association between experience and wages. The estimate in column 2 is still negative and statistically significantly different from zero, indicating that that moving from a cell with no workers above the pre-reform cap to one with all workers above the pre-reform cap, after versus before the law change, reduced the gross wage by 19.87 percent. Adding these additional controls does not substantially change my estimates. These results of decline in gross wages indicate that there was shifting of the increase in HI tax liability onto workers in the form of lower gross wages.

Estimated Impact of the Increase in HI Taxable Earning Cap on Working Hours

Then I use the similar framework to examine the increase in HI taxable earnings cap on working hours. The regression equation is as the following,

$$\ln(H_{jkt}) = \alpha_0 + \alpha_1 P_{jk}^{above1988cap} + \alpha_2\left(P_{jk}^{above1988cap} \times D_t^{post1988}\right) + \theta_j + \delta_k + \varphi_t + \gamma X_i + \mu_{jkt} \quad (2)$$

where the dependent variable is the log of aggregate annual hours worked in occupation *j*, Census region *k*, and year t. Using the cell level aggregate hours takes into consideration of both changes in workers' average working hours and the number of workers. *X* is a vector of observable worker characteristics that affect hours, expressed as the percentage of workers that falls into each age, race, marital status, and education categories. Other explanatory variables are the same as in equation (1). The parameter α measures the impact of the law changes: the differential impact on hours after the reform (relative to before the reform) of moving from a cell with no workers above the pre-reform cap to one with all workers above the pre-reform cap. To the extent that the increase in HI payroll taxation results in lower equilibrium hours, I would expect a negative sign for α ; if hours do not respond to changes in the cap, then α should be zero.

Column 1 of Table 3 shows that the OLS estimate of α is negative but not statistically significant from zero, indicating that workers in the occupation-by-region cells with more people above the cap in pre-reform years did not experience significant disemployment effect after the cap increases compared to cells with fewer people above the cap in pre-reform years. In column 2, I again allow for interactions of the demographic variables (expressed as percentage of workers in each age, race, education, and marital status categories) with the calendar-year dummy variables to address the potential concern, that the composition of demographic characteristics might have changed over time in a way that affected mean hours and was correlated with the changes in the above-cap percentages. The estimate is still negative but not statistically significantly different from zero showing no significant disemployment effect.

Conclusion and Discussion

In this paper, I use the increase in the HI taxable earnings cap from the Social Security Amendments in 1990 and 1993 as a natural experiment to measure the impact of the increase in nonwage labor costs on wage and working hours in the United States. Using data from several years of CPS, I find evidence of shifting of employers' nonwage labor cost onto wage when the cap increases. Specifically, moving from an occupation-by-region cell with no workers above the taxable earning cap to one with all workers above the cap leads to a drop in wage rate by 19.87 percent. I found no disemployment effect due to the increase in the earnings cap.

This result may shed some light on the predicted impact of the health bill on the labor market. However, it needs to point out that other changes included in the health bill may complicate the prediction. For example, the health bill includes an excise tax on high-premium insurance policies offered through employer, which may further encourage the shifting of the increase in employers' portion of health cost onto wages.

Table 1: Descriptive Statistics of the Data Set

	Mean	10th percentile	50th percentile	90th percentile
log (Real Hourly Wage Rate) Prime-Age Men Only	2.3657 [0.6879]	1.5407	2.3942	3.1641
Above-Cap Portion using All Workers Aged 20-55	0.1023 [0.1431]	0	0.0385	0.3071
log(Hours Worked Last Year) for All Workers Aged 20-55	7.5151 [0.5739]	6.9470	7.6401	7.8831

Notes: The sample is male workers aged 20-55 in private sectors in 1989, 1990, 1991, 1994, 1995 and 1996 March CPS. Observations with non-zero self-employment income and the workers in government are eliminated. Standard deviations are in brackets. Total number of observations is 139,709.

Table 2: The Effect of the Increase in HI Taxable Earnings Cap after 1991 on Wage Rate

	Effect on Wage Rate	
	(1)	(2)
Above-Cap Portion x Post88	-0.1709 (0.0785) [0.030]	-0.1987 (0.0820) [0.016]
Region Effects	Yes	Yes
Year Effects	Yes	Yes
Occupation Effects	Yes	Yes
Education	Yes	Yes
Race	Yes	Yes
Marital Status	Yes	Yes
Education x Year	No	Yes
Age x Year	No	Yes
Race x Year	No	Yes
Marital Status x Year	No	Yes
Weight	Yes	Yes
Observations	7,496	7,496

Notes: The sample is male workers aged 20-55 in private sectors in 1989, 1990, 1991, 1994, 1995 and 1996 March CPS. The dependent variable is the log of mean hourly wage rate of prime-age male workers by occupation and region cell. Standard errors, clustered by occupation and region, are in parentheses. P-values are reported in brackets. Weight is the number of observations in each occupation by region and by year cell.

Table 3: The Effect of the Increase in HI Taxable Earnings Cap after 1991 on Working Hours

	Effect on Log (Aggregate Hours)	
	(1)	(2)
Above-Cap-Portion x post78	-.1247 (.0803) [0.121]	-.0947 (.0838) [0.259]
Region Effects	Yes	Yes
Year Effects	Yes	Yes
3-digit Occupation Effects	Yes	Yes
Education	Yes	Yes
Age	Yes	Yes
Race	Yes	Yes
Marital Status	Yes	Yes
Education x Year	No	Yes
Age x Year	No	Yes
Race x Year	No	Yes
Marital Status x Year	No	Yes
Weight	Yes	Yes
Observation	7,496	7,496

Notes: The sample is male workers aged 25-55 in 1989, 1990, 1991, 1994, 1995 and 1996 March CPS. The dependent variable is log of aggregate hours by occupation and region cell. Standard errors, clustered by occupation and region, are in parentheses. P-values are reported in brackets. Weight is the number of observations in each occupation by region and by year cell.

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IMPACT OF HUMAN RESOURCE MANAGEMENT PRACTICES ON SMALL AND MEDIUM SIZED ENTERPRISES (SMEs) PERFORMANCE IN A COUNTRY IN RECESSION

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ABSTRACT

Purpose - This study investigates the impact of human resource management practices on the performance of small and medium sized enterprises (SMEs) in Florida during a period of recession.

Design/methodology/approach – The subject of human resource management and its impact on organizational performance continues to be of great interest to academics, researchers and managers. What makes this different and interesting is that, the study is conducted in an unfavorable economic condition. The current global economic crises make the implementation of human resource management practices more challenging to managers in today's organizations both big and small. SMEs who are the major employer of today's workforce in the USA and other parts of the world are the hardest hit of the global economic crises, therefore to stay in business and competition, they must have the right formula to recruit and retain their employees in this hard times. The study selected six HR practices including, recruitment and selection (R & S), training and development (T & D), performance appraisal (PA), employee participation and decision making EPDM), compensation, and staff welfare services (SWS). This study sampled small firms in Florida using questionnaire to ask HR managers in these firms on a 5-point Likert scale to determine the extent to which they implement the six HRM practices during the recession period and the impact on the organization's performance, and also how the recession has affected the way they implement these practices.

Findings – The study found significant relationships between the human resource management practices and SME performance. As with other studies, this study also found the argument that human resource management practices enhance organizational performance even in a period of recession.

Originality/Value – Though some studies do not support the argument that HR practices enhance organizational performance, this study which was conducted during a period of recession in the United States supports the argument. The study reports significant positive relationships between all the six selected HR practices and performance.

Keywords HRM, Recession, Small and Medium Sized Enterprises

Introduction

The subject of human resource management and its impact on organizational performance continues to be of great interest to academics, researches and even to managers. But more importantly in today's competitive world, the success of an organization depends on its people. More so is the current worldwide economic crisis that is hitting all industries and organizations both big and small. At the time of writing this paper, there were falling home prices, high number of foreclosures nationwide; the financial markets have collapsed nationally and globally, unemployment in the US was at its lowest in 26 years and every day workers were being asked to go home. The national unemployment rate in the US was 7.2% in December 2008. This was 7.6% in Florida as against 4.2% ten years ago (bureau of labor statistics, 2009).

Human resources are the most dynamic of all the organization's resources. Human resource management is the strategic and logical approach in managing the organization's most valuable assets. It is to obtain, to retain, to develop, to motivate, and to use human resource effectively. It can also be said to be the conduit to develop and maintain a cooperative organizational culture which generates high level of commitment and loyalty. There is also the legal and social dimension which is to meet the organizations legal and social obligations. The employees that work in the organization work as a team to achieve the goals and objectives of the organization. They need considerable attention from the organization's management, if they are to realize their full potential in their work. Thus motivation, leadership, communication, work restructuring, payment systems and training and development may all be included in the issues which have to be faced by management today. A well trained workforce can produce better jobs, be creative and have higher motivation, which in the long run enhance the organization's productivity. Organizations must have the right type of people at the right places in the organization at the right time. The importance of human resource management is the demonstration of contribution and value to the organization which serve as a source of sustainable competitive advantage.

The current economic downturn has some impact on how managers in organizations handle its people. Many organizations both large and small today are facing enormous problems and taken decisions that affect the way they operate as well as decisions on their employees. Sales are going down, contracts are being cut, employees are losing jobs, and the bottom-line is that organizations are losing profits. Though

large corporations are going out of business, the small businesses are the worse hit. The study will focus on the impact of HR practices on SME performance.

SMEs are the back bone of every economy, creating employment for the masses of the people. Governments in developed countries have been able to create the enabling environment that is needed for SME growth and development. There should be no underestimation of SMEs as an approach to modern development. Human resources are the most dynamic of all the organization's resources. Etemad and Wright, (1999) have indicated that "Economic growth and innovation, both domestically and internationally, are fuelled increasingly by small companies and /or entrepreneurial enterprises" (pg 1). Ibielski (1997), declared "Small business are mighty minnows reflecting the competitive spirit that a market economy needs for efficiency; they provide an outlet for entrepreneurial talents, a wider range of consumer goods and services, a check to monopoly inefficiency, a source of innovation, and a seedbed for new industries; they allow an economy to be more adaptable to structural change through continuous initiatives embodying new technologies, skills, processes, or products" (pg. 1).

The size and type of the organization will determine the type of HR practice. As a firm grows, its HR practices will change. Some additional practices will be added. Different organizations practice different HR practices. Shanker and Astrachan (1996) in their study stressed that in the United States, SMEs most of which are family-owned play a significant economic and societal role accounting for 60% of the total employment, 50% of gross domestic product, 78% of new job creation and about 65% of all wages paid.

The question is what should managers do in terms of their most valuable asset in this period of economic recession? What types of employees should organizations recruit? In this time of crisis, what will be the impact of HRM practices on an organization's performance? What will be the best kind of HR practices to be implemented? What HR practices must be adopted in this period of recession?

Objective

The objective of this paper was to investigate the impact of HR practices on organizational performance in a period of recession. It is to determine if organizations make any changes in the practice of HR and if the organization is affected. It will attempt to explain why it is important to implement effective HR practices in such a period. This paper will contribute to the building of a body of knowledge on employee management practices and firm performance with particular emphasis on SMEs in certain counties in Florida.

Literature Review

The focus of this study was to investigate the impact of human resource management practices on organizational performance with particular emphasis on small and medium sized enterprises in an unfavorable economic condition -recession. There are enough empirical studies that support the case that HRM practices improve organizational performance. It is highly acknowledged that a significant

relationship exists between human resource management practices and organizational performance (Huselid, 1995; Wright & Snell, 1998; MacDuffie, 1995; Carlson, Upton, & Seaman, 2006), and also as a source of competitive advantage (Wright, McMahan, & McWilliams, 1994; Prahalad, 1983). Whether large or small organizations, there are four main functions of human resource management which are basically, recruiting and staffing, training and development, motivation, and maintenance (health and safety). Carlson et. el. have looked at HR practices in large firms and concluded that HR positively impacts organizational performance.

Huselid, Jackson, and Schuler (1997), and Arthur (1994) also concluded that there are a bundle of HRM practices that can influence an organization's performance. Jones and Wright (1992) have argued that employee retention is enhanced when there is improved skill and greater motivation amongst employees. Other studies (Delery & Doty, 1996; Huselid, 1995; Dyer & Reeves, 1995; Ngo, Turban, Lau, & Lui, 1998) have looked at certain specific human resource management practices and have concluded that those practices enhance firm performance. However, a few studies have questioned such conclusions (Wright, Gardener, Moynihan, & Allen, 2005). There are a number of human resource practices that can be looked at. This study has concentrated on six of such practices which are recruitment and selection, training and development, performance appraisal, employee participation and decision making, compensation (salaries and benefits) and staff welfare services.

Recruitment and Selection (R&S)

This is a critically important activity as it determines organizational membership. Recruitment is about attracting qualified applicants and sets the limits for selection. Recruitment and selection is a 2-way process, which means the individual is selecting the employer and the employer is selecting the individual. It is a process where job seekers and those willing to give out jobs meet. It is a practice that involves activities of getting the right person(s) at the right place at the right time. Huselid (1995) has concluded that it contributes to higher productivity and market value; however, it has some negative impact on turnover. Some studies have linked staffing selectivity to a positive relation to perceive market performance (Delaney & Huselid, 1996), and perceived profit, market share and investments. Recruitment and selection in an organization always come with some form of investment. Organizations must also assess the process to ensure that they are doing the right thing. Koch and McGrath (1996) concluded that evaluation and investment in the recruitment and selection process is positively correlated to labor productivity. Having indicated previous findings of the link between recruitment and selection and firm performance, it is hypothesized that:

H1: There is a positive relationship between recruitment and selection and SME performance in a period of economic recession.

Training and development (T&D)

Training and development as one of the key functions of human resource management is a significant variable in organizational success. Employees after a certain length of time in the organization may need

some type of training to meet changing demands. According to Rothwell (1984) and Majchrzak (1988) training is one of the common problems in the introduction of technological change in an organization. Businesses of all sizes (large and small) have recognized the value of training. Because of rapid changes and increasing complexity and competition in all aspects of businesses, it is seen as an investment in organizational well-being. Marlow and Patton (1993) have described SME training as informal and on the job with little or no provision for management development. It has also been noted by Macmahon and Murphy (1999) that SMEs rarely carry out formal training-needs analysis and have no systematic approach to training. Training has been predicted to improve firm performance. Marais and Israestan (1997) indicated that because of world competition there should be constant and regular training in all organizations large and small.

There have been mix conclusions by researchers on the question as to whether training improves small firm performance. It is believed that training can and should be a powerful agent to facilitate a firm's expansion and the development of its capabilities, thus enhancing profitability (Cosh, Duncan, & Hughes, 1998). Training will enhance competitive advantage, improve profitability and facilitate firm growth (Bartel, 1994), and improve quality of output (Holzer, Block, Cheatham, & Knott, 1993). Westhead and Storey (1997) suggest that employees in small and medium sized firms (SMEs) are much less likely to receive training than their counterparts in large organizations.

Thus the following hypothesis is proposed:

H2: There is a positive relationship between training and SME performance

Performance Appraisal (PA)

This practice plays a key role in the improvement of the operations of an organization. Effective performance appraisal in an organization gives the employees some confidence in the system. Alexander (1989) has linked an organization's ability to appraise its employees effective to increasing efficiency, product reliability and productivity. Youndt, Snell, Dean, and Lepak (1996) have suggested that it eliminates defects and Redman, Snape, and McElwee (1993) also indicated in their study that it improves overall firm performance. Small Businesses by their nature sometimes find it difficult to do performance appraisal of their employees because some believe it comes with wage increase. But as indicated, research has shown how significant it is in an organization.

This leads to the proposition that

H3: A positive relationship exists between performance appraisal and SME performance in a period of economic recession.

Compensation (Salary & Benefits)

Compensation is sometimes linked to performance appraisal. It is believed that as employees are appraised and promoted, their compensation is increased and some studies have suggested it has an

impact upon perceived organizational performance (Delaney & Huselid, 1996). Lazear (1996) has suggested in a study that performance related pay is positively related to productivity, whilst (Dowling & Richardson, 1997) indicated that it affects employee motivation positively. Other studies (Kalleberg & Moody, 1994) have concluded that reward is positively correlated to some indicators of performance notably, profit, market share, product development, customer satisfaction investments and growth of sales. Other researchers say higher rewards contribute to a decrease in turnover (Arthur, 1994), and better social climate between management and employees (Fernie, Metcalf, & Woodland, 1995). The forgoing literature indicate how important it is for organizations to view compensation as a force to reckon with in light of organizational success, though times are hard, it still must seen in that perspective.

The above discussion leads to the following hypothesis

H4: A positive relationship exists between compensation and SME performance in a period of economic recession.

Employee Participation and decision making (EPDM)

When managers involve their employees in the decision making process, it makes them fill that they are part of the organization. It motivates employees to work harder and they become loyal to the organization. Most US organizations are now involving their employees in decision making. This practice makes employees feel that they are more recognized and therefore they become loyal to the organization. In small businesses this practice may be far from being practiced. Studies have indicated that when employees are involved in the decision making process it has a positive influence on productivity and product quality, and social climate (Fernie et al. (1995). Wallace (1995) has indicated that this practice is positively related to organizational commitment.

From the forgoing, the following is hypothesized:

H5: Employee participation and decision making will positively influence SME performance in this period of recession.

Staff welfare services (SWS)

A vital concern to human resource professionals and the organization should be the welfare and wellbeing of its employees no matter the employee's position in the organization. There should be no discrimination in whatever type of work they may be engaged in. Stress is a factor that causes some employees not to give in their best and employees will serve their organizations better if managers are able to identify employee stress and deal with it. The two main causes of stress are organizational and personal. Both must be dealt with but managers must take careful look at personal stress which could be family and financial problems. Businesses must provide counseling and guidance for their employees when they are in some type of stress. This is something that employees appreciate so much. Also as a staff welfare services, employees may be given some stock options and profit sharing as a form of some incentive program. This makes them loyal

and committed to the organization. Such services may go a long way to enhance the performance of the firm. Based on the forgoing it is therefore hypothesized that:

H1: There is a positive relationship between staff welfare services and SME performance.

Challenges

In all this, there are a number of factors that will influence the implementation of some of these practices. One factor is skill shortages. Where there is shortage of skills in a particular position to be filled, this will make it difficult to recruit and select. Again, if the organization is practicing discrimination and it's a well known fact amongst potential job seekers, no one will like to work for such an organization. Government Legislation may also impact on the human resource practices within organizations. Some laws may prevent or may ask organizations from doing or to do certain things.

Resistance to Change- Where employees are not involved in the process of change, there is always the problem of resistance. The present economic crisis may force organizations to take certain decisions that are not in the interest of employees. Such decisions may be on restructuring the organization which in one way or the other affects employees. There will be resistance to change from employees in this regard. The only solution to this problem is to get them involved in the decision making process.

Lack of communication skills and interpersonal skills amongst employees is a challenge to management for the smooth running of the enterprise.

Methodology

This paper is designed to investigate the impact of HR practices on SME performance in a period of economic recession. The selected HR practices considered are recruitment and selection, training and development, performance appraisal, compensation, employee participation and decision making, and welfare services. The study was conducted in Florida. The survey was conducted between January and May 2009. The questionnaire was administered through a face to face data collection method. The human resource managers or managers who are responsible for HR practices in the organization were asked to indicate on a 5-point Likert scale the extent to which their organization implement the HR practices. The target population was on small businesses in Florida. Respondents were asked to indicate their present position on a particular HR practice on a 5-point Likert scale, 1 representing strongly disagree to 5 strongly agree. The questions on performance covered 6 items including, profitability, customer service, market share, sales growth, employee morale, and quality of product or service during the period of recession.

Data Processing Analysis

The researchers used the statistical package for social sciences (SPSS) in the analysis of the data. Whilst the HR practices were measured on a 5-point Likert scale, some of the demographic attributes were on a 2-point to 7-point Likert scale. Frequency statistics was performed to determine the frequency of a

particular variable use. The human resource variables, as well as the performance constructs were subjected to an analysis to ensure that they are reliable indicators of those constructs (Nunnally, 1967). A reliability test was undertaken to ensure that the research study findings have the ability to provide consistent results in repeated incidences.

Discussion and results

Using the SPSS reliability program, an internal consistency analysis was performed separately for items of each factor of human resource practice that included 48 usable responses out of the 56 returned survey questionnaire. The analysis revealed that all the factors have a Cronbach's alpha value above 0.7, which testifies to the reliability of the instrument. The reliability analysis in table I indicates that all the factors meet the recommended level of 0.7.

Table I shows the reliability analysis of the HR constructs and performance.

Table I

Constructs	Cronbach's Alpha	No of items
Recruitment and Selection	.831	6
R&S performance	.914	6
Training and Development	.945	7
T&D performance	.932	6
Performance Appraisal	.901	5
PA performance	.950	6
EPDM	.919	5
EPDM performance	.939	6
Compensation	.947	7
Compensation performance	.958	6
Staff Welfare Service	.872	3
SWS performance	.976	6

A total of 80 questionnaires were sent out to be responded to. Out of the 80, 56 were returned of which 5 were rejected because those companies employed more than 500 workers, and 3 were not included in the analysis because they were incomplete. Out of the 48 usable responses representing 60%, 27 or 56.3% were male owners, 10 or 20.8% were female owners and 11 or 22.9% were family owned business. The break down is seen in table II.

Table II

Gender_Business_Owner

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male Owner	27	56.3	56.3	56.3
	Female Owner	10	20.8	20.8	77.1
	Family Business	11	22.9	22.9	100.0
	Total	48	100.0	100.0	

Table III gives a cross tabulation of business owners and the type of industry in which they operate. In all, 10 male business owners were in the service industry. There were no female owner or family owned business in the construction industry. In the farming business, there are 4 male owners and 2 family owned businesses but no female owner. The transportation industry had 3 male owners and 3 family owned and no female owners. Education had 2 from male, female and family owned businesses.

Table III

Type_of_Industry * Gender_Business_Owner Crosstabulation

		Gender_Business_Owner			
		Male Owner	Female Owner	Family Business	Total
Type_of_Industry	Manufacturing	2	1	2	5
	Service	10	5	1	16
	Education	2	2	2	6
	Construction	3	0	0	3
	Transport	3	0	3	6
	Farming	4	0	2	6
	Other	3	2	1	6
Total		27	10	11	48

Table IV shows a breakdown by type of business where 79.2% of the usable responses were 'For Profit' and 20.8% were 'Non Profit' firms.

Table IV

Type_of_Business

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	For Profit	38	79.2	79.2	79.2
	Not for Profit	10	20.8	20.8	100.0
	Total	48	100.0	100.0	

Table V provides a distribution of the data by type of industry. Of the total sample size of 48, 10. 4% of the respondents were in manufacturing industry, 33.3% in service, 12.5% in education, 6.3% in construction, 12.5% in transport, 12.5% in farming and 12.5% were in other businesses. Of the business in the service industry, 13 were operating for profit and 3 were operating not for profit. In the manufacturing, construction, transport and the farming businesses, all the businesses in that category were operating for profit.

Table V

Type_of_Industry

		Frequency	Percent	For Profit	Not for Profit
Valid	Manufacturing	5	10.4	5	0
	Service	16	33.3	13	3
	Education	6	12.5	2	4
	Construction	3	6.3	3	0
	Transport	6	12.5	6	0
	Farming	6	12.5	6	0
	Other	6	12.5	3	3
	Total	48	100.0	38	10

Analysis was conducted to determine full time workers in the sample data. Table VI shows that 27.1% of the respondents have less than 20 full time workers, 35.4% have between 20-50 full time workers, 18.8% of the respondents have 51-100 full time employees, 10.4% have 101-200 and 8.3% also have between 200-500 full time employees. Table VII gives further breakdown of industry type by full-time employees.

Table VI

Full_Time_Employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<20	13	27.1	27.1	27.1
	20-50	17	35.4	35.4	62.5
	51-100	9	18.8	18.8	81.3
	101-200	5	10.4	10.4	91.7
	200-500	4	8.3	8.3	100.0
	Total	48	100.0	100.0	

Table VII

Type_of_Industry * Full_Time_Employees Crosstabulation

		Full_Time_Employees					
		<20	20-50	51-100	101-200	200-500	Total
Type_of_Industry	Manufacturing	0	1	3	1	0	5
	Service	7	5	1	2	1	16
	Education	0	2	2	1	1	6
	Construction	0	2	0	1	0	3
	Transport	4	1	1	0	0	6
	Farming	1	3	1	0	1	6
	Other	1	3	1	0	1	6
Total		13	17	9	5	4	48

Further analysis was performed to ascertain whether the diversity of the workforce has affected the organization's human resource management practices. Table VIII provides breakdown of sample data by the impact of diversity where 12 or 25.0% indicated that diversity has 'not at all' affected their human resource management practices. 21 or 43.8% indicated that it has not affected them much. 11 or 22.9% said it has affected them greatly and 4 or 8.3% noted that it has affected them very greatly.

Table VIII

Impact_of_Diversity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not al all	12	25.0	25.0	25.0
	Not Much	21	43.8	43.8	68.8
	Greatly	11	22.9	22.9	91.7
	Very greatly	4	8.3	8.3	100.0
	Total	48	100.0	100.0	

Respondents were also asked to indicate whether the recession has an impact on their human resource practices. The analysis in table IX revealed that, 60.4% indicated that the recession has affected their human resource management practices and 39.6% responded that the recession has not affected their human resource management practices.

Table IX

Impact_of_recession

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	29	60.4	60.4	60.4
	No	19	39.6	39.6	100.0
	Total	48	100.0	100.0	

Based on the objectives, the review of the literature and the HR practices of the study, six hypotheses were postulated to be tested. Analysis was performed to test the various hypotheses. Regression and correlation analysis were conducted for all the six hypotheses. The results indicated that there were significant positive relationships between all six HR practices of recruitment and selection, training and development, performance appraisal, employee participation and decision making, compensation and staff welfare services (considered as independent variables) and performance (which comprise, profitability, market share, sales growth, employee morale, customer satisfaction, and quality of service or product, being dependent variables). The findings supported the alternate hypotheses which were all accepted.

H1: The regression analysis for the first hypothesis which was there is a positive relationship between recruitment and selection and SME performance. The analysis shows r = .626, r-squared = .392 and p-value = .000 indicating support for H1 hypothesis.

H2: For the second which is training and development, the postulated hypothesis was, there is a positive relationship between training and SME performance. The r is .744 and the r-squared .554 and p-value.000. The null hypothesis was rejected and the alternate accepted.

H3: The third hypothesis considered was for performance appraisal. The results revealed r = .771, r-squared = 0595 and p-value =.000. The H3 hypothesis is therefore accepted that a positive relationship exists between performance appraisal and SME performance in a period of recession.

H4: Employee participation and decision making and SME performance was the next hypothesis to be tested. The results concluded that employee participation and decision making will positively influence SME performance in a recession. It has r = .772, r-squared = .521 and p-value = .000.

H5: A positive relationship that exists between compensation and SME performance during a period of recession was also accepted with an r = .767, r-squared = .589 and p-value of .000.

H6: The last hypothesis tested the relationship between staff welfare services and SME performance and that also the alternate hypothesis was accepted. R was .781, r-squared = .609 and p-value .000.

The analyses above indicate that the selected HR practices of recruitment and selection, training and development, performance appraisal, employee participation and decision making, compensation and staff welfare services were all positively and significantly related to SME performance in a period of recession. The summary of the hypothesis can be seen in table X.

Summary of Hypotheses

H1. There is a positive relationship between recruitment and selection and SME performance in a period of economic recession. Results of the analysis supported the alternate hypothesis, hence it is accepted

H2. There is a positive relationship between training and SME performance. The results rejected the null hypothesis and accept that training influence SME performance positively.

H3. A positive relationship exists between performance appraisal and SME performance in a period of economic recession. A high significant positive relationship, the alternate hypothesis is therefore accepted

H4. A positive relationship exists between compensation and SME performance in a period of economic recession. The results indicate that there is a positive significant relationship between compensation and SME performance even during periods of recession. The results strongly support the alternate hypothesis.

H5. Employee participation and decision making will positively influence SME performance in this period of recession. There was a positive significant relation between employee participation and decision making and SME performance. The results support the alternate hypothesis

H6. There is a positive relationship between staff welfare services and SME performance. There is a strong positive relationship between staff welfare services and performance.

Table X

Variables	Hypothesis	R	R-squared	p-values	Decision
Recruitment and Selection	H1	.626	.392	.000	Accept H1
Training and Development	H2	.744	.554	.000	Accept H2
Performance Appraisal	H3	.771	.595	.000	Accept H3
Compensation	H4	.722	.521	.000	Accept H4
Employee Participation	H5	.767	.589	.000	Accept H5
Staff Welfare Services	H6	.781	.609	.000	Accept H6

Further analysis was conducted to ascertain whether diversity will have an impact on a particular human resource practice or on performance. The ANOVA results in table XI indicate that diversity has an impact on some HR practices for instance on performance appraisal, staff welfare services and performance on training and development. However, the results reveal that diversity did not have an impact on majority of the human resource practice variables. It however, did have an impact on performance appraisal and staff welfare service, as well as performance on training and development. See table XI below

Table XI- ANOVA impact of diversity

Variables	F, df, (Sig)
Average_R_and_S * Impact_of_Diversity	F = 0.693, df = 3, 44, (p = 0.561)
Average_Performance_R_and_S * Impact_of_Diversity	F = 1.486, df = 3, 44, (p = 0.231)
Average_T_and_D * Impact_of_Diversity	F = 0.772, df = 3, 44, (p = 0.516)
Average_Performance_T_and_D * Impact_of_Diversity	F = 2.741, df = 3, 44, (p = 0.054*)
Average_PA * Impact_of_Diversity	F = 2.836, df = 3, 44, (p = 0.049*)
Average_Performance_PA * Impact_of_Diversity	F = 1.945, df = 3, 44, (p = 0.136)
Average_EPDM * Impact_of_Diversity	F = 1.090, df = 3, 44, (p = 0.363)
Average_Performance_EPDM * Impact_of_Diversity	F = 0.899, df = 3, 44, (p = 0.449)
Average_COMP * Impact_of_Diversity	F = 1.381, df = 3, 44, (p = 0.261)
Average_Performance_COMP * Impact_of_Diversity	F = 1.862, df = 3, 44, (p = 0.150)
Average_SWS * Impact_of_Diversity	F = 2.793, df = 3, 44, (p = 0.051*)
Average_Performance_SWS * Impact_of_Diversity	F = 2.385, df = 3, 44, (p = 0.082)

Again ANOVA as shown in table XII was performed to find if the type of business owner will affect the practice of human resource in a particular firm. The results indicated that for the staff and welfare services, the type of owner will have an impact of that HR practice. With this the results of the analysis of variance indicated that for the staff welfare service variable, the type of business owner did have an impact.

Table XII-AVONA Gender Business Owner

Variables	F, df, (Sig)
Average_R_and_S * Gender_Business_Owner	F = 0.159, df = 2, 45, (p = 0.854)
Average_Performance_R_and_S * Gender_Business_Owner	F = 0.207, df = 2, 45, (p = 0.814)
Average_T_and_D * Gender_Business_Owner	F = 1.418, df = 2, 45, (p = 0.253)
Average_Performance_T_and_D * Gender_Business_Owner	F = 1.459, df = 2, 45, (p = 0.243)
Average_PA * Gender_Business_Owner	F = 0.525, df = 2, 45, (p = 0.595)
Average_Performance_PA * Gender_Business_Owner	F = 0.347, df = 2, 45, (p = 0.709)
Average_EPDM * Gender_Business_Owner	F = 0.110, df = 2, 45, (p = 0.896)
Average_Performance_EPDM * Gender_Business_Owner	F = 0.557, df = 2, 45, (p = 0.577)
Average_COMP * Gender_Business_Owner	F = 0.505, df = 2, 45, (p = 0.607)
Average_Performance_COMP * Gender_Business_Owner	F = 2.605, df = 2, 45, (p = 0.085)
Average_SWS * Gender_Business_Owner	F = 6.185, df = 2, 45, (p = 0.004)
Average_Performance_SWS * Gender_Business_Owner	F = 5.531, df = 2, 45, (p = 0.007*)

The researchers wanted to find out if location did have an impact on the practice of HR. Analysis of variance as shown in Table XIII was performed. The analysis of this concluded that the location of a firm will not have any impact on HR practice or on performance.

Table XIII – ANOVA County of Location of Business

Variables	F, df, (Sig)
Average_R_and_S * County_Location_Business	F = 1.906, df = 4, 43 (p = 0.126)
Average_Performance_R_and_S * County_Location_Business	F = 0.968, df = 4, 43 (p = 0.434)
Average_T_and_D * County_Location_Business	F = 0.238, df = 4, 43 (p = 0.914)
Average_Performance_T_and_D * County_Location_Business	F = 0.287, df = 4, 43 (p = 0.884)
Average_PA * County_Location_Business	F = 2.116, df = 4, 43 (p = 0.095)
Average_Performance_PA * County_Location_Business	F = 0.773, df = 4, 43 (p = 0.548)
Average_EPDM * County_Location_Business	F = 0.815, df = 4, 43 (p = 0.522)
Average_Performance_EPDM * County_Location_Business	F = 0.130, df = 4, 43 (p = 0.970)
Average_COMP * County_Location_Business	F = 1.475, df = 4, 43 (p = 0.226)
Average_Performance_COMP * County_Location_Business	F = 0.605, df = 4, 43 (p = 0.660)
Average_SWS * County_Location_Business	F = 0.113, df = 4, 43 (p = 0.976)
Average_Performance_SWS * County_Location_Business	F = 0.375, df = 4, 43 (p = 0.824)

Limitations

A sample of 48 Florida based companies' HR managers or managers who perform HR functions in their organizations were given the survey to respond to questions regarding the impact of HR management practices during the recession. This makes it a self-reporting and places some limitations on the value of the numbers and therefore the conclusions drawn. Also care must be taken in the generalization of the results because of the locations where the data was collected. Four counties comprising 48 companies in Florida may not be a representative of the whole country. However, it gives an indication of what organizations can do in terms of HR practice in a period of recession.

Conclusion and Future Research

This study investigated the relationship between human resource management practices and SME performance in a period of recession. As revealed in the analysis, the human resource management

variables are found to have positive significant effect on SME performance even in a period of recession where most organizations are laying off workers; performance is low, and fighting for organizational survival. This research suggests that organizations both big and small must continuously implement quality human resource management practices. It goes to explain that no matter the situation, because of global competition, firm's most especially small businesses that are the backbone of economies, creating jobs and innovations must continuously improve and implement appropriate HR practices that will allow them to stay in competition. This study has also supported previous studies that looked at HR practices and firm performance in a 'normal' business cycle where conditions are favorable.

From the start, human resource must be a strategic partner. However, in a period of recession human resource managers have a major responsibility to the organization. Small businesses that are the hardest hit in the period of recession must take some important decisions regarding the operations of the business. Normally, in such times what managers look at a cost reduction strategy for the organization. One particular area that is obviously not left out is by reducing the size of their employees. But managers must be careful when they do this.

The researchers recommend that before managers of both large and small businesses take any decision on the reduction of employees, a critical assessment of the business must be conducted to ascertain the where to cut cost. The human resource department must work in close relation with the quality department if the organization has one. Reduction of waste should be on the agenda. Cutting the size of the workforce, in this case employees who are not performing should not be the first on the plate. One major area to reduce waste will be the improvement of the processes. This must be the first agenda because the exercise will help the business to determine whether to ask some employees to go or not. Communication which is also an HR practice but was not considered in the study must be a high priority. Every single decision must be communicated to the employees during these times. Because in a period of difficulty, where there are organizational grapevine, workers do not believe what managers tell them. Therefore, the HR department must be on top of the communication process. Asking people to go home is not an easy decision to take and as businesses do that, they must guide and counsel the employee. This goes a long way to give the organization a good image.

This study has added to the body of knowledge on human resource practices and organizational performance. It may be the first on the relationship between human resource management practices and SME performance in a period of recession. Conducted in certain counties of Florida, further research in this area should look at a nationwide impact of the recession on HR practices and performance. A cross country analysis on this topic is also warranted.

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A RESEARCH MODEL FOR RFID-ENABLED SUPPLY CHAIN INTEGRATION USING RESOURCE-BASED VIEW THEORY

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ABSTRACT

Radio Frequency Identification (RFID) technology has been used widely in enhancing supply chain management. Despite of RFID's great advantages and broad applications, RFID investment in the supply chain process does not guarantee a stronger organizational performance. This paper aims at providing some new perspectives in explaining how RFID technology can create a sustained competitive advantage for the firm through enhancing the supply chain integration. Using resource-based view theory, we propose a research model for RFID-enabled supply chain integration.

Keywords: radio frequency identification, supply chain management, research based view, organizational performance, competitive advantage

Introduction

Radio Frequency Identification (RFID) technology uses the automatic identification method to create an environment where every object can be automatically recognized, identified, tracked, and traced from the factory, through shipping and warehousing, and into the retail environment (Lai et al., 2005). This technology promises a remarkably growing market in various business areas. Research and Market (2005) reported that RFID markets reached $503 million in 2004 and were anticipated to drive market growth at an average of 67 percent to more than $3.8 billion in 2011.

The use of RFID promises better enhancement for the supply chain performance such as demand visibility, real-time information flow, lower inventory cost, lower stock-outs, shorter lead time, higher customer responsiveness, better item tracking system (McFarlane and Sheffi, 2003; Angeles, 2005; Majoras et al., 2005; Pramataris et al., 2005; Kärkkäinen, 2005; Prater et al., 2005; Pagarkar et al., 2005). Many firms, e.g. Wal-Mart, Tesco, Metro AG and Target, have initiated a definite plan to use RFID in the supply chain process and attracted a great attention from others.

The advent of RFID technology has attracted much attention from academics and practitioners in recent years. Existing RFID studies are concentrated mainly on technological issues, applications areas, and policy and security issues (Ngai et al., 2007). Among almost one hundred journal articles on RFID, 80% of the published literature focused on RFID tags and antennae, emphasizing the important role of cost and

performance of the tag. Other papers focus on various applications of RFID technology and its influence on supply chain, logistics, and inventory control processes.

Despite of RFID's great advantages and broad applications, RFID investment in the supply chain process does not guarantee a stronger organizational performance. According to Powell and Dent-Micallef (1997) [1], adopting a particular technology can be easily duplicated by other firms and, therefore, cannot assure a sustained competitive advantage for the adopting firm. Thus, firms must have a strong strategy in using RFID technology in order to succeed in a competitive and dynamic environment. In other words, it is important to examine how firms can use RFID technology as a resource in the supply chain to create a sustained competitive advantage.

The primary objective of this paper is to provide some new perspectives in explaining how RFID technology can create a sustained competitive advantage for the firm through enhancing the supply chain integration. In particular, drawing from the resource-based view and supply chain management literature, we propose that RFID-enabled supply chain can serve as a catalyst in transforming RFID-related resources into a higher value for a firm. The value of RFID can be enhanced when it is embedded throughout the supply chain process. In particular, RFID-related resources are able to enhance the supply chain integration, which in turn will improve a firm's competitive advantage and the firm performance.

Background of Radio Frequency Identification (Rfid)

Auto Identification and Radio Frequency Identification (RFID)

Automatic Identification (Auto ID) refers to the methods of automatically identifying objects, collecting data about them, and entering that data directly into computer systems in a real time manner without human involvement. In this process, external data is obtained through analysis of images, sounds or videos. To capture data, a transducer is employed which converts the actual image or a sound into a digital file. The file is then stored and at a later time it can be analyzed by a computer, or compared with other files in a database to verify identity or to provide authorization to enter a secured system. Technologies typically considered as part of Auto ID include bar codes, Radio Frequency Identification (RFID), biometrics, magnetic stripes, Optical Character Recognition (OCR), smart cards, and voice recognition.

Radio frequency identification (RFID) is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags (Auto-ID Center, 2002; Jones et al., 2005). The RFID tag includes an antenna and a microchip that contains an electronic product code (EPC). The microchip is used to store object information; with EPC, it stores much more information than regular bar code (for example, when and where the item was made, where the components are from, and when the item might expire) (Turban et al., 2006). The antenna enables the microchip to transmit object information to a reader, which in turn transforms the information on the RFID tag to a format understandable by computers (Angeles, 2005). The reader sends out electromagnetic waves that form a magnetic field when they combine with the antenna on the RFID tag. The tag draws power from the

magnetic field and uses it to power the microchip's circuits. The microchip then modulates the waves that the tag sends back to the reader, which the reader converts into digital data. The data transmitted by the tag may provide a wide range of unique product information and they can be read from a distance and through a variety of obstacles.

There are three types of RFID tags, differentiated by how they communicate and how that communication is initiated: active, passive, or semi-passive. Active RFID tags use an on-board power source (for example, a battery) to power the microchip's circuitry and send signals to the reader. Passive RFID tags do not have an on-board power and use the power emitted from the reader to energize themselves and transmit stored data to the reader. Semi-passive tags have an on-board power source and electronics. The on-board power supply provides energy for the tag for its operation. However, for transmitting the data, a semi-passive tag uses the reader's emitted power. Active and semi-passive tags are typically used for higher-value goods that are scanned over longer distances (Angeles, 2005; Majoras, 2005; Lahiri, 2006; Pramataris et al., 2005).

Benefits of RFID

The wide range of benefits of RFID is being claimed mainly in supply chains, especially in the retail, based upon its capability of identifying an object automatically, quickly, and accurately in real time. The real time data generated by the tags will provide manufacturers, suppliers, distributors and retailers with up-to-date information on inventory and logistics (Jones et al, 2005). Using radio frequency, RFID does not require a physical contact between tag and the reader which increase the accuracy of information (Majoras et al., 2005). In addition, with a RFID system, the real-time visibility is accessible across the supply chain, enabling firms to ultimately reduce inventories. RFID readers can gather information about the location of tagged objects as they make their way from the manufacturer, to a warehouse or series of distribution centers, and to the retailer's store (Kasi et al., 2005; Majoras et al., 2005; Jones et al., 2005). RFID may also facilitate the effective use of warehouse and distribution center space where products will not need to be stored according to product type for manual location but they can be stored in the most efficient manner based on size and shape (Jones et al., 2005). Finally, RFID technology increases the customer services by reducing dramatically check-out times and providing personalized shopping promotion (Jones et al., 2005; Pramataris et al., 2005; Majoras et al., 2005).

Challenges of RFID

Despite of its benefits, RFID is still relatively new to many firms and there are some potential challenges for them in adopting the RFID technology. The primary challenge to RFID adoption is the concern of privacy. There are two major private threats: leaking information pertaining to personal property and tracking the consumer's spending history and patterns and physical whereabouts (Majoras et al., 2005; Kasi et al., 2005; Ohkubo et al., 2005). Second, the cost of tags is another constraint on the adoption of RFID technology. Primary costs involved in RFID are the cost of the tag and the cost associated with implementing RFID systems; this cost can be very large if firms don't have a strong IT infrastructure and capability (Smith and Konsysnki, 2003). Third, the lack of common internationally agreed RFID standards

appears to be another critical constraint. Most of current standards are still evolving and are not completely compatible with each other (EPCglobal Press Release, 2005). Finally, the introduction of RFID technology will also require the firm to integrate their RFID systems and the data they generate with their other functional databases and applications and generate major training needs for employees to use the new systems and master new job functions (Angeles, 2005; Jones et al., 2005).

RFID Resources and Resource Based-View Theory

With all promising advantages, RFID technology can be used as an important resource to enhance the firm performance. In this study, we use the resource-based view (RBV) theory to explain how a firm can use RFID technology to enhance the supply chain integration and create sustained competitive advantages which lead to superior long-term performance. The RBV argues that the heterogeneous market positions of close competitors derive from each firm's unique bundle of resources and capabilities that are valuable, rare, inimitable, and non-substitutable (Barney, 1086; Peteraf, 1993; Wernerlfelt, 1984). Wade and Hulland (2004) differentiate a resource's initial and longer-term impact on a firm's competitive position. Resources that are valuable and rare and whose benefits can be appropriate by the owning firm provide it with a temporary (short-term) competitive advantage. That advantage can be sustained over longer time periods to the extent that the firm is able to protect against resource imitation, transfer or substitution (Wade and Hulland, 2004).

The RBV has been used extensively in strategic management research and has been found to be a useful method to evaluate the strategic value of a firm's resources. Although the RBV, to our best knowledge, has never been used in RFID research it has been widely accepted and applied in IS research. Using the RBV, IS researchers have been able to evaluate the strategic value of IS resources, differentiate among various types of IS and study their influences on performance (Santhanam and Hartono, 2003). It was also indicated that unlike some resources, such as brand equity or financial assets, IS resources rarely contribute a direct influence to sustained competitive advantage. Instead, they form part of a complex chain of assets and capabilities that may lead to sustained performance. Due to the lack of RBV usage in RFID research, we use and adapt the results of some IS studies to develop a framework for RFID resources.

Although RFID becomes a critical resource to firms in a competitive environment, it does not stand alone but needs to act in conjunction with other firm resources to provide strategic benefits (Ravichandran and Lertwongsatien, 2002). Research has shown that the organizational performance depends on how technology is integrated with organizational, technical, human resource, and business resources (Powell and Dent-Micallef, 1997; Banjamin and Levinson, 1993. In addition, the vulnerability of the surrounding environment where the resources are allocated will have critical impact on the organizational performance (Dess and Beard, 1984). These factors, namely resource moderators by Wade and Hulland (2004), play the role of moderators that have effect on the association between resources and the performance.

Similar to IS resources, RFID resources do not always contribute directly to the sustained competitive advantages. Instead, RFID resources enable firms to develop solid system-based capabilities which in its turn will lead to better competitive advantages. The RFID system, which enable firms to share real time information remotely without human involvement, can be embedded in the supply chain process and strengthen the supply chain integration. Using RFID the focal firm in a supply chain will be able to heighten the integration with suppliers, customers, and other internal entities of the supply chain such as distribution centers, wholesalers, and retailers). The information advantage achieved through the adoption of sophisticated technologies such as RFID and the synergetic benefits achieved through an integrated supply chain process provide the sources of sustained competitive advantage for a firm (Bharadwaj, 2000)

Research Model

Based upon the comprehensive review of RBV theory and RFID literature in the previous section, a research model is developed (Figure 1). The model proposes that RFID-related resources (internal-based RFID resources, process-based RFID resources, and external-based RFID resources) will have direct impact on supply chain integration which in turn will create better competitive advantages. Then the competitive advantages will be positively associated with the organizational performance. In addition, RFID resource moderators will moderate the relationship between RFID-resources and supply chain integration. Competitive advantages and organizational performance are concepts that have been operationalized in existing literature (Ngai at al., 2007).

RFID-related resources

Since there is no current research applying the RBV theory in the RFID context, the IS resource literature is used for reference. Current research indicates that IS resources can be examined as IS assets and IS capabilities. According to Wade and Hulland (2004), a firm's competitive advantage depends mainly on the firm's superior deployment of capabilities. They argue that the competitors can easily copy the IS asset resource, but they cannot copy, imitate, or substitute the IS capability resources that are embedded in the firm process and require special IS expertise. Day (1994) classified business capabilities into three categories: inside-out, outside-in, and spanning. The inside-out capabilities are deployed from inside the firm and respond to market requirements, competitive challenges, and external opportunities. Outside-in capabilities are external oriented and connects the processes that define the other organizational capabilities to the external environment and enable the business to compete by anticipating market requirements ahead of competitors and creating durable relationships with customers, channel members, and suppliers. Finally, spanning compatibilities are needed to integrate the inside-out and outside-in capabilities. This approach is consistent with more recent studies in IT capabilities. Applying this approach in the RFID context, we categorize RFID-related resources into three

major categories: Internal-based RFID resources, Process-based RFID resources, and External-based RFID resources.

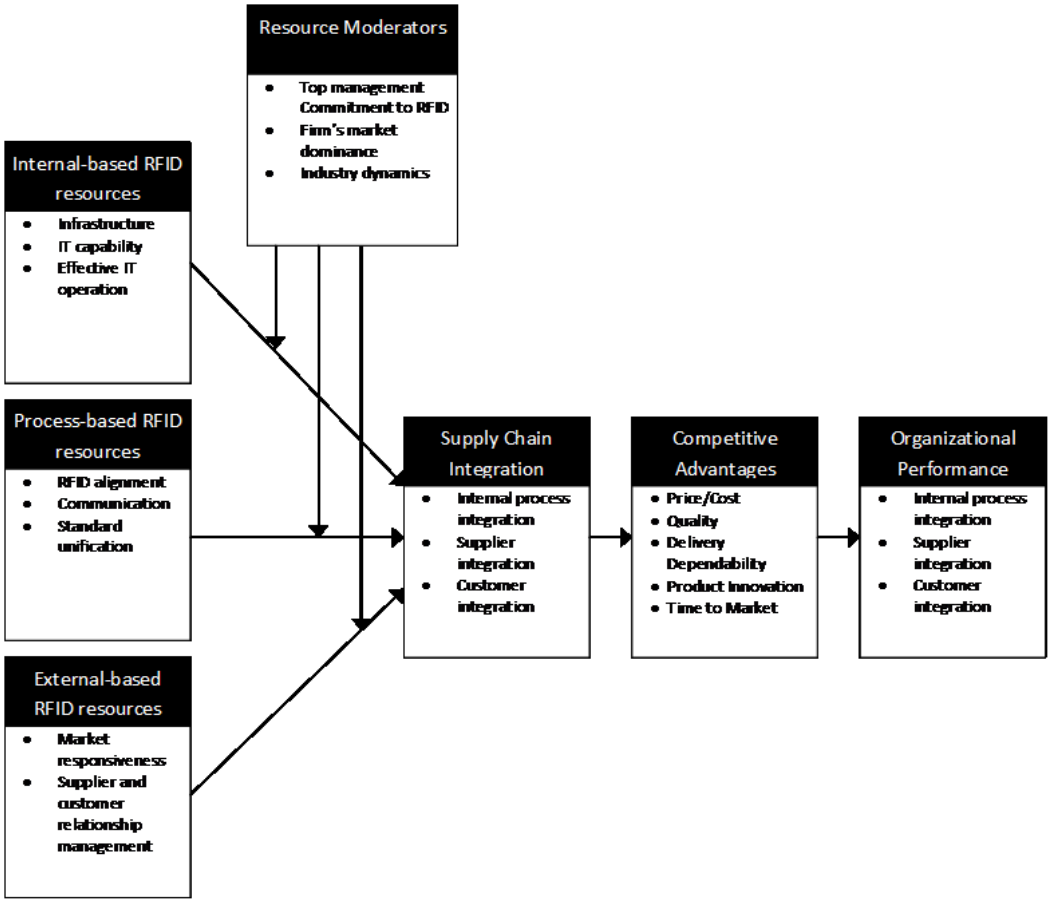

Figure 1: Research model for RFID-enabled supply chain integration

Resource Moderators

These moderators play an important role in enhancing the relationship between RFID resources and supply chain integration. The first moderator is the top management commitment (Powell and Dent-Micallef 1997). In general, a top management team that promotes, supports, and guides the RFID systems is perceived to enhance the impact of RFID resources on performance. In another case, industry dynamics is also a crucial factor. In fast changing environments, different assets and capabilities than those needed in more stable environments are required to achieve superior performance (Eisenhardt and Martin 2000; Teece et al. 1997; Volberda 1996). The ability to stay on top of business trends and to quickly respond to changing market needs is critical for superior firm performance in such environments.

Supply Chain Integration (SCI)

Supply chain integration (SCI) is defined as the extent to which a firm coordinates activities with suppliers and customers (Stock et al., 1998; Narasimhan and Jayaram, 1998; Wood, 1997; Li, 2001). Supply chain integration links a firm with its customers, suppliers, and other channel members by integrating their relationships, activities, functions, processes and locations (Kim and Narasimhan, 2002). Having an integrated supply chain provides significant competitive advantage including the ability to outperform rivals on both price and delivery (Lee and Billington, 1992).

Competitive Advantage

Competitive advantage is the extent to which an organization is able to create a defensible position over its competitors. It comprises capabilities that allow an organization to differentiate itself from its competitors and is an outcome of critical management decisions.

Organizational Performance

Organizational performance refers to how well an organization fulfilled its market and financial goals (Yamin et al., 1999). The short-term objectives of SCM are primarily to increase productivity and reduce inventory and cycle time, while a long-term objective is to increase market share and profits for all members of the supply chain (Tan et al, 1998).

Conclusions

RFID is an emerging technology that is being increasingly used in many business areas, especially in SCM. With the capability of identifying objects quickly and accurately, RFID technology enhances the real-time visibility throughout supply chains. The potential benefits of RFID in SCM have been recognized by many organizations, resulting in a promising growth of RFID applications. For example, Wal-Mart Stores announced that it would require its top 100 suppliers to put RFID tags on shipping crates and pallets by January 1st, 2005, and attempted to expand its RFID efforts to its next 200 largest suppliers by January 1st, 2006 (Williams, 2004). However, many companies are facing some difficult question: how the use of RFID systems for supply chain will ensure the company's success thru enhanced organizational performance. This study uses the resource-based view theory to develop a research model that examines the impact of RFID resources on supply chain integration which in turn will enhance a company's competitive advantage and performance. This study will fill the gap in RFID literature and help researchers evaluate the success of a RFID-enabled supply integration system. Practitioners also benefit from this study because they can identify the RFID resources that can ensure their successful performance. The future research should focus on testing this model using empirical data, regionally and internationally.

References Are Available Upon Request

MEASURING THE VARIABILITY OF WAITING TIME IN SUPPLY CHAIN OPERATIONS

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Keywords: Supply chain, Queuing System, $GI/G/n$ queue, Variance of Waiting Time, Approximation

ABSTRACT

In supply chain operations, the majority of extra time is spent waiting for various resources. A fundamental issue in operations is to understand and estimate the underlying causes of all this waiting. However, the analysis of the variance of waiting time remains unsolved due to its inherent complexity. We provide a mathematically tractable exact expression for the coefficient of variation of waiting time for $G/M/n$ and $M/G/1$ queues. We apply this expression to give a two-moment approximation to the standard deviation of waiting time in the $GI/G/n$ queue, which reflects real operations system. In comparison with computer simulations the method gives accurate approximations (within $\pm$ 10%) of the standard deviation of $GI/G/n$ queues, under the assumption that the coefficients of variation of the inter-arrival times and the service times are between 0 and 1. Our results could be widely used in supply chain and operations management.

Introduction

The fundamental activity of supply chain operations centers on the flow of entities through processes (Hopp 2002). The entities can be parts in a manufacturing system, people in a service system, jobs in a computer system or transactions in a financial system. The processes can be machining centers, bank tellers, computer CPU's, or manual workstations. The flows typically follow routings that define the sequences of processes visited by the entities.

In almost all operations systems, the key performances are (1) throughput**,** the rate at which entities are processed by the system; (2) work in process (WIP), the number of entities in the system, which can be measured in physical units (e.g., parts, people, jobs) or financial units (e.g., dollar value of entities in system), and (3) cycle time: the time it takes an entity to traverse the system, including any rework, restarts due to yield loss, or other disruptions.

Many researchers have explored on cycle time reduction. The literature on JIT and lean manufacturing extol the virtues of WIP reduction, while the literature on time based competition and agile manufacturing call for cycle time reduction. However, since cycle time =WIP/Throughput, Little's law indicates that WIP and cycle time reduction are really two sides of the same coin. As long as throughput remains constant, any reduction in WIP must be accompanied by a reduction in cycle time and vice versa.

Managers would prefer the system with low WIP and short cycle times—such a system is more efficient in the sense of its ability to convert WIP into throughput. But in practice, operations and supply chain systems can exhibit dramatic differences in efficiency. The answer is variability and this is a fundamental insight of supply chain operations. In supply chain systems, many important quantities are variable, including process times, equipment uptimes, equipment downtimes, product demands, yield rates number of workers. Because of the prevalence of variability and its disruptive influence on system performance, understanding it is critical to effective supply chain management.

Queuing theory, which is the study of waiting line phenomena, can reveal the cause and-effect relationships between variability and performance measures in a supply chain system. In supply chain operations, entities queue up behind processes, so that Cycle Time = Delay + Process Time, where delay represents the time entities spend in the system not being processed. There are several causes of delay. One of the most important is queuing delay, in which entities are ready for processing but must wait for a resource to become available to start processing.

Recent years have witnessed a growing volume of good quality approximations for the $GI/G/n$ queue (Whitt 1999, 2004, Atkinson 2008). While the accuracy of these approximations is usually satisfactory, they often result in algebraically intractable expression. This hinders attempts to derive closed-form solutions to the decision variables incorporated in optimization models, and inevitably leads to the use of complex numerical methods or to recursive schemes of calculation. Furthermore, actual application of many of these approximations is often obstructed due to the thorough specification that is needed of inter-arrival or service time distribution (Shore 1988).

In addition, all current literature focuses on the probability of waiting and the average waiting time. The analysis of the variance of waiting time remains unsolved due to its inherent complexity. There is no mathematically tractable general formula for approximating the standard deviation of waiting time σ_q in

the $GI/G/n$ queue. Only bounds or approximations of waiting time have been found in the literature. When these bounds are used as approximations, they appear to be rather crude (Boxma 1979).

Nevertheless, understanding the variance of the waiting time is essential to understanding the performance of queuing system. In many systems, the "worst case" value of flow time is very relevant because it represents the lead time that can safely be promised to the customers. Predicting the range of variation of the time in the system (rather than just the average) is needed for decision making.

In this research, we provide approximation methods for the standard deviation of waiting time for a general multi-server queue with infinite waiting capacity ($GI/G/n$). The approximations require only the mean and standard deviation or the coefficient of variation of the inter-arrival and service time distributions, and the number of servers.

These approximations are simple enough to be implemented in manual or spreadsheet calculations, but in comparisons to Monte Carlo simulations have proven to give good approximations (within $\pm$ 10%) for cases in which the coefficients of variation for the inter-arrival and service times are between 0 and 1. The approximations also have the desirable properties of being exact for the specific case of Markov queue model ($M/M/n$), as well as some imbedded Markov chain queuing models ($E_k/M/1$ and $M/E_\alpha/1$).

To develop the approximation of the standard deviation of waiting time, we have studied the equivalent (under the assumption that a good approximation exists for the average waiting time) problem of finding a mathematically tractable formula of estimating the coefficient of variation of waiting time $c_q = \sigma_q / W_q$, where W_q and σ_q are respectively the average and standard deviation of the time in queue.

We present a general expression for c_q which is applicable to $G/M/n$ and $M/G/1$ queues. We conjecture that this expression provides a good approximation for $G/G/n$ queues and have tested this conjecture via computer simulations. In the following, λ is the arrival rate, and μ is the service rate of each server and $\rho =$.

Theorem 1: For $G/M/n$ and $M/G/1$ queues:

$$c_q = \sqrt{1 + \frac{4E[s^3]}{3\lambda}\frac{P(T_q = 0)}{(E[s^2])^2}} \qquad (1)$$

Where $P(T_q = 0)$ is the probability of no waiting, $E[s^2]$ and $E[s^3]$ are the second and third moments of the service time distribution.

Proof: For $M/G/1$ queue, we know the variance of waiting time is $\sigma_q^2 = W_q^2 + \frac{\lambda E[s^3]}{3(1-\rho)}$ and the average waiting time is $W_q = \frac{\lambda E[s^2]}{2(1-\rho)}$ (Kleinrock 1976), where $E[s^2], E[s^3]$ are the second and the third moments of the service time distribution. For $M/G/1$, we know $P(T_q = 0) = 1 - P(T_q > 0) = 1 - \rho$. Therefore,

$$c_q = \frac{\sigma_q}{W_q} = \sqrt{1 + \frac{\lambda E[s^3]}{3(1-\rho)W_q^2}}$$

$$= \sqrt{1 + \frac{E[s^3]}{3\lambda}\frac{4(1-\rho)}{(E[s^2])^2}}$$

$$= \sqrt{1 + \frac{4E[s^3]}{3\lambda}\frac{P(T_q = 0)}{(E[s^2])^2}}$$

When $G = M$, $M/G/1$ reduces to $M/M/1$. For $M/M/1$, we know $E[s^2] = 2/\mu^2$ and $E[s^3] = 6/\mu^3$, so expression (1) can be simplified to:

$$c_q = \sqrt{\frac{2 - P(T_q > 0)}{P(T_q > 0)}} \qquad (2)$$

We must show that (2) and therefore (1) holds for $G/M/n$ queues. We can do so by directly computing $c_q = \sigma_q / W_q$ from known expressions for W_q and σ_q.

For $G/M/n$ queue, we know the distribution of waiting time is $W_q(t) = -\frac{Cr^n}{1-r} e^{-n\mu(1-r)t} \quad (t \geq 0)$ where C is a constant. (Gross and Harris 2002)

So we have,

$$W_q = \quad = \int$$

$$= \int \quad -$$

$$= \frac{C \quad n}{n\mu \quad -} —$$

$$E[T_q^2] = \int \quad -$$

$$= \frac{2C \quad n}{n^2\mu \quad -} —$$

Hence by definition,

$$\sigma_q = E[T_q^2] - E[T_q])^2$$

$$= \frac{2C \quad n(1 \quad -}{n^2\mu \quad -}$$

For $G/M/n$ we want to verify

$$\sigma_q = \frac{2 - P(T_q > 0)}{P(T_q > 0)} \cdot W_q$$

Equivalently, $\frac{\sigma_q}{W_q^2} = \frac{>}{P(T_q >}$

LHS= $\frac{\sigma_q}{W_q^2} = \frac{2Cr^n(1-\quad) - \quad r^{2n}}{n^2\mu \ (1-\quad)^4} \Big/ \frac{Cr^n}{n\mu \ (-\quad}$

$$= \frac{2}{Cr^n/(1- \quad -} \quad -$$

RHS= $\frac{2-}{P(T_q >} -$ $-$

Therefore, LHS=RHS, $\frac{\sigma}{W_q^2} =$ $\frac{>}{P(T_q >}$.

$\Rightarrow$ $=$ $P(T_q >$

$\Rightarrow$ $=$ $\sqrt{P(T_q >}$

$\Rightarrow$ $=$ $\frac{>}{\sqrt{P(T_q >}}$

Thus formula (2) and therefore formula (1) holds for $G/M/n$ queues. Formula (2) can also be shown to be a direct result of the fact that the conditional waiting time, given that the customer has to wait, is exponentially distributed in $GI/G/n$ queues (Zhao 2007). Whitt (1993) conjectured that the exact formula for the distribution of waiting times of $M/G/1$ can be used as an approximation for the $M/G/n$ model. Seelan and Tijms (1984) provided additional support for this approximation.

We conjecture that formula (1) can be used as an approximation for the $GI/G/n$ queue since it applies to $G/M/n$ and $M/G/1$, and can be used as an approximation for the $M/G/n$ queue. To estimate c_q using formula (1), it is necessary to estimate $P(T_q =)$ and $E[s^3]$. Since we do not assume that $E[s^3]$ is specified, we must estimate it by assuming some known distribution for the service times, e.g. Weilbull or gamma, for which the third moment can be computed as a function of the average and standard deviation.

We also have to estimate $P(T_q =))$. As we show later our method for estimating $P(T_q =))$ is very rudimentary, involving using a single server queue as an approximation to the multiple server queue and then fitting a plane through three points for which $P(T_q =))$ is known.

As we show in the following section c_q is relatively insensitive to errors in estimating these $E[s^3]$ and $P(T_q =))$.

Sensitivity to Errors in Estimating the Input Parameters $E[s^3]$ and $P(T_q = 1)$

We first examine the sensitivity of the formula (1) to errors in estimating $E[s^3]$, given that the other parameters $P(T_q = 1)$ and $E[s^2]$ are specified. We find that the formula is relatively insensitive to the errors in estimating $E[s^3]$.

Theorem 2: Suppose a small change in $E[s^3]$, expressed as a proportion P, is $\Delta[s^3] = P \cdot E[s^3]$, the resulting change in c_q, also expressed as a proportion, is at most $P/2$, that is $\frac{\Delta_1}{c_q} \leq 0.5P$. Furthermore as $P(T_q = 1)$ approaches 0, ∇_1 approaches 0.

Proof: The partial derivative of c_q with respective to $E[s^3]$ is:

$$\frac{\partial_1}{\partial[s^3]} = \frac{4P(T_q = 1)}{3\lambda E[s^2])^2} \frac{1}{2c_q}.$$

Note that the derivative approaches 0 as $P(T_q = 1)$ approaches 0.

Also we observe that $c_q \geq 0$, since $\frac{4E[s^3]}{3\lambda} \frac{P(T_q = 1)}{(E[s^2])^2} \geq 0$.

When $E[s^3]$ changes by a small amount $\Delta[s^3] = P \cdot \Delta[s^3]$, the corresponding change in c_q is

$$\Delta_q = \cdot \cdot \frac{\partial}{}$$

$$= \cdot \cdot \frac{4P(T_q = 1)}{3\lambda} \cdot \frac{1}{2c_q}$$

$$= \cdot \frac{c_q^2 - 0}{2c_q}$$

Expressing Δ_q as a proportion gives

$$\frac{\Delta_1}{c_q} = P \cdot \frac{c_q^2 - 0}{2c_q^2}.$$

Since $c_q \geq$, it can be observed that $0 \leq \frac{\Delta}{c_q} \leq \frac{P}{2}$.

So the formula of c_q is not sensitive to $E[s^3]$.

Theorem 3: Suppose a small change in $P(T_q =)$, expressed as a proportion P, is $\Delta P(T_q =)) = P \cdot P(T_q =))$, the resulting change in c_q, also expressed as a proportion is at most $P/2$, that is $\frac{\Delta}{c_q} \leq .5P$.

Proof: similar to the proof of theorem (2), we can do the similar sensitivity analysis on $P(T_q =))$ and draw the same conclusion that c_q is not sensitive to errors of $P(T_q =))$.

Spreadsheet Implementation: Estimation of $E[s^3]$ and $P(T_q =))$

In order to implement the approximations in a spreadsheet format for practitioners, we assumed that the service time distribution could be approximated using a gamma distribution with mean $1/\mu$, shape parameter α , and scale parameter β. We estimate the parameters as α = $/c_s^2$ and $\beta =$ where c_s is the coefficient of variation of the service time distribution. Then $E[s^3] =$ + + .

We also developed a simple method for estimating the $P(T_q >))$ in the $GI/G/n$ queue that gives exact results for $M/M/n$, $E_k/M/1$, and $M/G/1$ queues.

For a multi-server queue $GI/G/n$, we first approximate it via a single server queue. We compute $P(T_q >$ for $M/M/n$ queue having the same arrival rate and service rate as the given $GI/G/n$ queue. $P_{M/M/n}(T_q > = -$ $_n$ (Zhao 2007)

Then we replace the multiple servers in the $G/G/n$ queue with a single server having service rate $\mu = \frac{}{P_{M/M/n}(T_q >}$.

In the special case of the $M/M/n$ queue, this approximation creates a single server queue having exactly the same probability of waiting as the original $M/M/n$ queue. Our assumption is that for a

$GI/G/n$ queue this approximation will create a $GI/G/1$ queue having approximately the same probability of waiting.

We then approximate $P(T_q > 0)$ for the resulting $GI/G/1$ queue. We assume that $P(T_q > 0)$, can be approximated as a function of c_a and c_s: $P(T_q > 0) = f(c_a, c_s)$. We estimate $f(c_a, c_s)$ by computing the plane that passes through three points surrounding (c_a, c_s) for which $P(T_q > 0)$ is known or can be closely approximated.

Expressed in the form $(c_a, c_s, f(c_a, c_s))$, these three surrounding points are:

$(0,0,0)$, $(1, c_s, f(1, c_s))$ and $(c_a, 1, f(c_a, 1))$ with:

$f(0,0) =$

$f(1, c_s) =$ [illegible] μ

$f(c_a, 1) =$ [illegible]^k, where $k =$ [illegible]$/c_s^2$ and r is the root of the equation:

$\mu r^{k+} -$ [illegible] $k\lambda + \mu$ [illegible] $r + k\lambda =$ [illegible]

In the above equation we are assuming that the inter-arrival time distribution can be approximated using an Erlang distribution and applying the formula for $E_k/M/1$ queues (Gross and Harris 2002). This equation can easily be solved using Newton's method.

The plane that passes though these points $(0,0,0)$, $(1, c_s, \lambda$ [illegible] $\mu)$ and $(c_a, 1, r^k)$ is given by:

$$f(c_a, c_s) = \frac{\text{[illegible]}^k c_s (1 - \text{[illegible]}_a) + (\lambda \text{ [illegible] } \mu)(1 - \text{[illegible]}_s) c_a}{1 - \text{[illegible]}_s c_a}.$$

The above formula is used to estimate $P(T_q > 0)$. The method for computing the probability of waiting is exact for $M/M/n$, $M/G/1$ and $E_k/M/1$.

Computational results

The method was implemented in an Excel spreadsheet. The results were compared to the results of Monte Carlo simulation with confidence interval 95%. The basis of comparison was the standard deviation of the time in the system σ .

$$\%Error = 100 \left(spreadsheet\ \sigma - simulation\ \sigma \right) / simulation\ \sigma$$

This comparison was for different cases with the following combinations of parameters:

Number of servers: 1, 2, 3, 10.

Utilization: 0.1, 0.2, 0.4, 0.8, 0.9, 0.95, 0.99.

Coefficient of variation of inter-arrival times: 0, 0.25, 0.5, 0.75, 1, 1.25, 1.5.

Coefficient of variation of service times: 0, 0.25, 0.5, 0.75, 1, 1.25, 1.5.

Distribution of inter-arrival times: Uniform, Normal, Gamma.

Distribution of service times: Uniform, Normal, Gamma.

Simulation experiments confirm that the approximations perform remarkably well across a wide range of cases, but not uniformly. In most of these cases the standard deviation of the time in the system obtained with the spreadsheet was within 10% of that obtained in the simulation.

The exceptions were some of the cases in which the utilization was 0.99 and/or the coefficients of variation of inter-arrival time or service time are greater than 1.5. Notice that these are cases in which the performance of the queue itself becomes very ill conditioned. In these cases the confidence region of the simulations itself became very large and the output became very sensitive to small changes in the parameters

In the summaries below we have grouped the data in different ways to show the effect of different parameters on the accuracy of the approximation. In this analysis we have excluded those test cases with utilization of .99 and coefficients of variation of 1.5.

Table 1 Shows that the method works well for multiple server queues, even though the approximation method uses a single-server approximation to the multiple servers. Each cell in the table represents the standard deviation and the range of % error. For example, for the single server queues analyzed the standard deviation of error was 3.64 and the errors ranged from -8.91% to 9.96%.

Number of server	1	2	3	10
STD of % error	3.64	3.61	3.51	2.28
Range of % error	-8.91 to 9.96	-6.48 to 9.09	-9.68 to 9.59	-7.69 to 5.66

Table 1: The impact of the number of servers on the accuracy of the approximation

Tables 2, 3 and 4 show the impact of the coefficients of variation and the utilization. Each entry in these tables gives the values of the standard deviation of waiting time. Each table assumes a different utilization and looks at different combinations of coefficients of variation.

Utilization=0.8		service process					
Arrival process	methods	CVs=0	CVs=0.25	CVs=0.5	CVs=0.75	CVs=1.00	CVs=1.25
CVa=0.00	approx.	0.00	0.05	0.11	0.17	0.25	0.35
	sim.	0.00	0.05	0.11	0.16	0.26	0.35
CVa=0.25	approx.	0.01	0.05	0.11	0.18	0.26	0.36
	sim.	0.00	0.05	0.10	0.17	0.24	0.33
CVa=0.5	approx.	0.04	0.07	0.12	0.19	0.28	0.38
	sim.	0.04	0.07	0.13	0.18	0.28	0.36
CVa=0.75	approx.	0.08	0.10	0.16	0.23	0.32	0.42
	sim.	0.08	0.10	0.15	0.22	0.30	0.40
CVa=1.00	approx.	0.14	0.16	0.22	0.28	0.37	0.48
	sim.	0.15	0.17	0.22	0.27	0.37	0.46
CVa=1.25	approx.	0.22	0.24	0.29	0.36	0.45	0.56
	sim.	0.24	0.24	0.29	0.36	0.47	0.54

Table 2

Utilization=0.9		service process					
Arrival process	methods	CVs=0.00	CVs=0.25	CVs=0.5	CVs=0.75	CVs=1.00	CVs=1.25
CVa=0.00	approx.	0.00	0.05	0.13	0.24	0.38	0.58
	Sim.	0.00	0.06	0.14	0.26	0.41	0.63
CVa=0.25	approx.	0.02	0.06	0.14	0.25	0.40	0.59
	sim.	0.02	0.06	0.13	0.23	0.38	0.56
CVa=0.50	approx.	0.08	0.11	0.19	0.30	0.46	0.65
	sim.	0.08	0.10	0.19	0.30	0.46	0.72
CVa=0.75	approx.	0.18	0.20	0.28	0.39	0.55	0.75
	sim.	0.18	0.19	0.26	0.36	0.53	0.73
CVa=1.00	approx.	0.33	0.34	0.42	0.53	0.69	0.98
	sim.	0.33	0.32	0.43	0.52	0.69	0.92
CVa=1.25	approx.	0.49	0.51	0.59	0.70	0.86	1.07
	sim.	0.50	0.54	0.54	0.72	0.83	1.01

Table 3

Utilization=0.95		service process					
Arrival process	methods	CVs=0.00	CVs=0.25	CVs=0.5	CVs=0.75	CVs=1.00	CVs=1.25
CVa=0.00	approx.	0.00	0.06	0.19	0.40	0.69	1.07
	sim.	0.00	0.06	0.20	0.42	0.69	0.99
CVa=0.25	approx.	0.04	0.10	0.23	0.44	0.73	1.11
	sim.	0.04	0.10	0.22	0.42	0.70	1.09
CVa=0.50	approx.	0.16	0.21	0.34	0.56	0.85	1.24
	sim.	0.16	0.20	0.34	0.58	0.89	1.18
CVa=0.75	approx.	0.36	0.41	0.54	0.76	1.06	1.44
	sim.	0.36	0.40	0.52	0.73	1.03	1.41
CVa=1.00	approx.	0.65	0.69	0.82	1.04	1.34	1.78
	sim.	0.66	0.67	0.88	1.01	1.34	1.78
CVa=1.25	approx.	1.01	1.05	1.19	1.41	1.71	2.10
	sim.	0.98	0.96	1.11	1.34	1.59	1.95

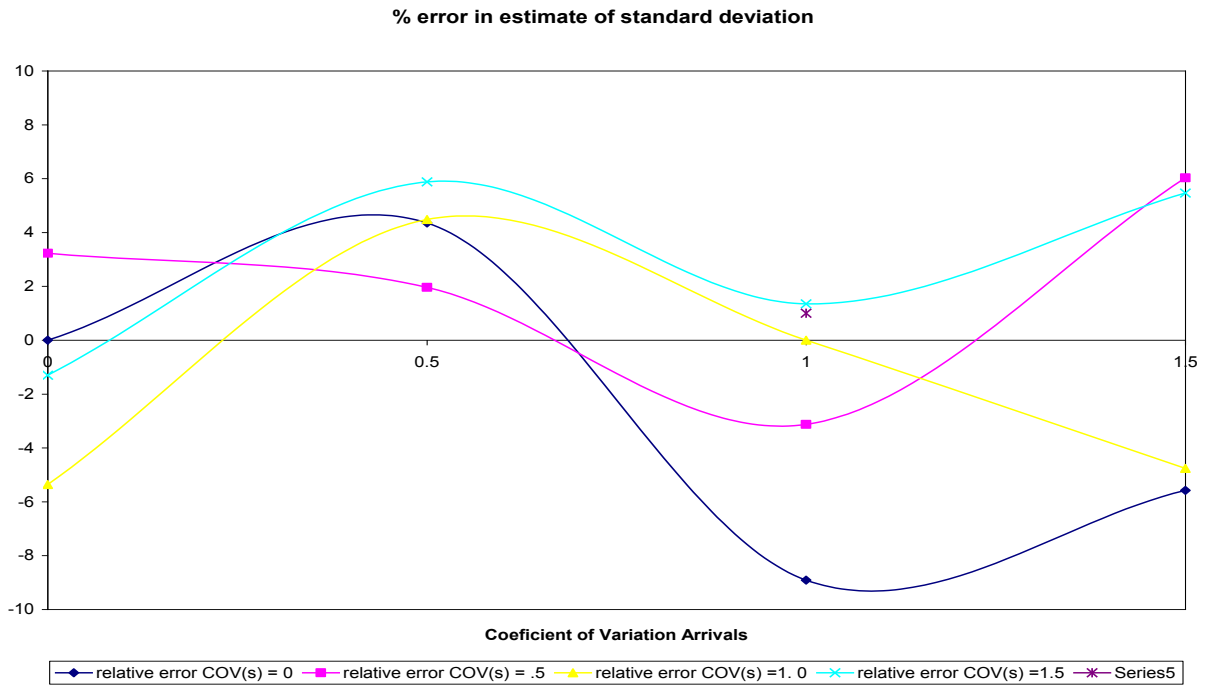

Figure 1. Error estimation with different COVs

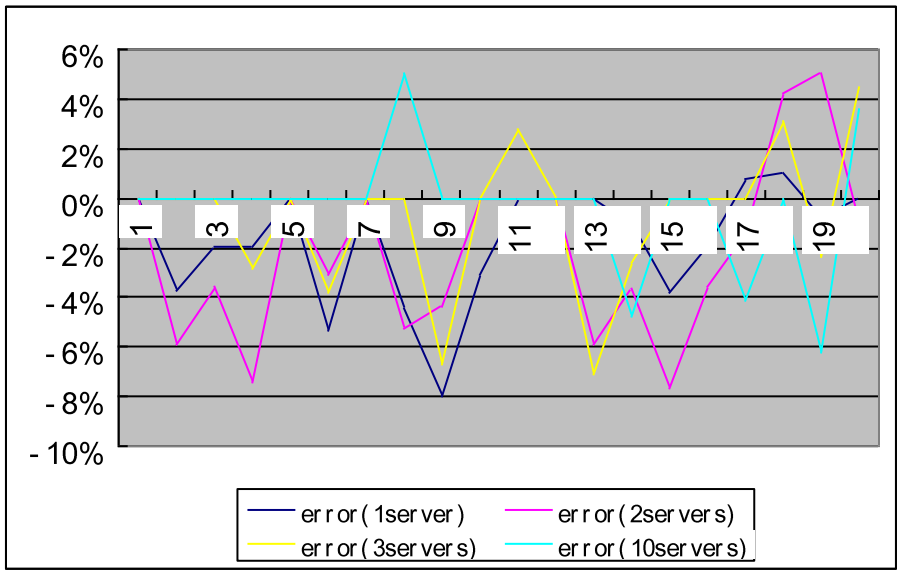

Figure 2. The impact of different servers on the accuracy of the approximation

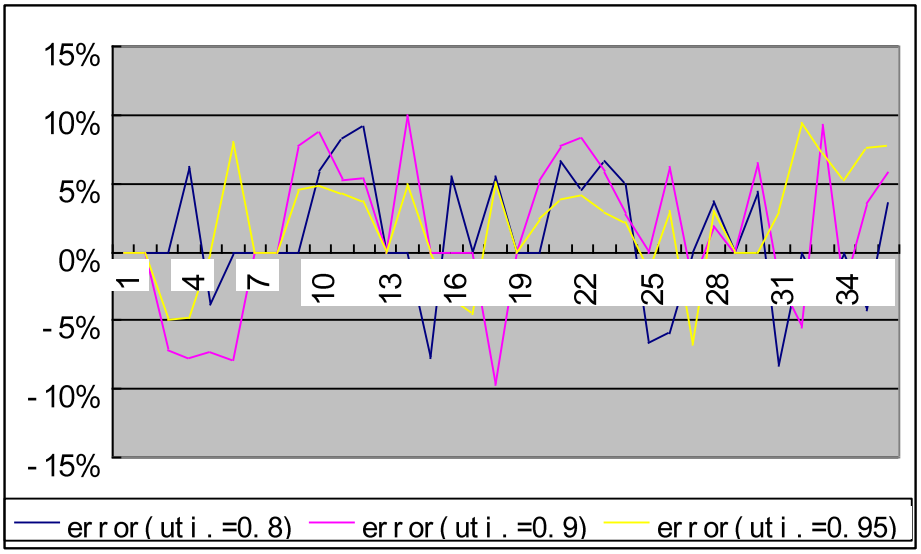

Figure 3. The impact of different utilizations on the accuracy of the approximation

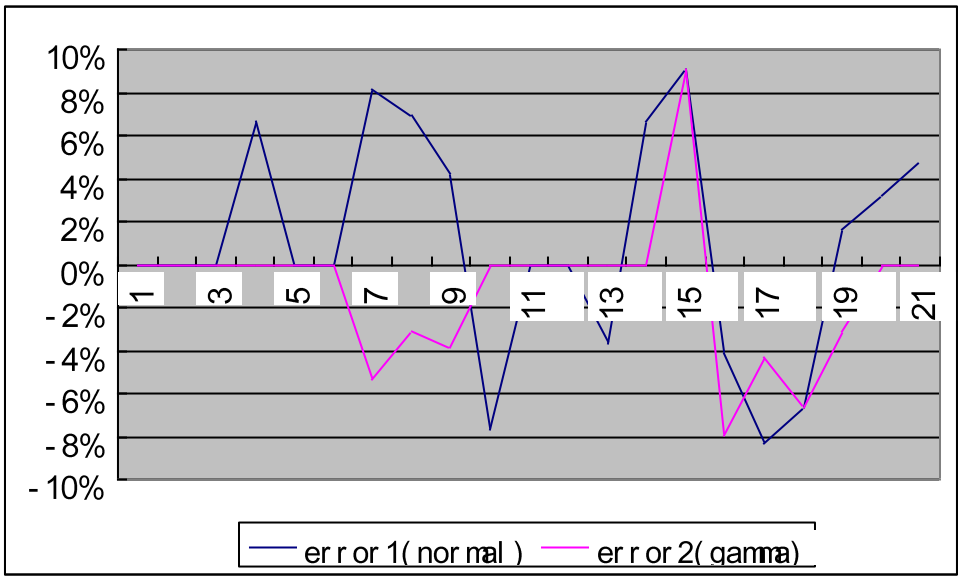

Figure 4. The impact of different simulations distributions on the accuracy of the approximation

Summary

We provide a two moment approximation method to measure the variability of waiting time in supply chain operations. Our modeling assumptions are that the first and second moments of the inter-arrival and service time distributions are known. Equation (1) is exact for $G/M/n$ and $M/G/1$ queues. Thus,

the method for computing the coefficient of variation of waiting time in the queue is exact for any subset of these queues for which the exact probability of waiting and the second and third moments of the service time distribution is known.

In our implementation, we assumed the service time distribution was gamma. The method for computing the probability of waiting is exact for $M/M/n$, $M/G/1$ and $E_k/M/1$. Thus, the method gives the exact coefficient of variation of waiting times for $M/M/n$, $E_k/M/1$, and $M/E_\alpha/1$ queues. In computational test with $0 \le c_a \le$ and $0 \le c_s \le$ (Zhao 2007), we have found the method to give approximations of the standard deviation of the time in system to within (± 10%). When CV is 1.25, it starts to be unstable. When CV is 1.5, it is to explode and becomes unreliable.

Our model works well for utilization from 0.1 to 0.95. It doesn't work for 0.99 as we expected (heavy traffic). It seems to be the situations in which the performance of the queue is very ill conditioned, that is situations in which a small change in a parameter would create a large change in the predicted performance.

For example, for any queue the predicted performance is very sensitive to small changes in the parameters when the utilization is near 1. So even though our approximation doesn't work very well in this situation, neither does simulation or anything else. (This would even be true of queues such as M/M/1 in which we have an exact formula.)

The error standard deviation is 3.307 for all cases. As utilization increases, the error standard derivation increases accordingly. For instance, for utilization of 0.8, 0.9, and 0.95, they are 2.858, 3.151, and 3.913 respectively. As the number of servers increases, the error standard derivation decreases accordingly, for instance, for number of servers 1, 2, 3, and 10, they are 3.64, 3.61, 3.51 , and 2.28.

Since G/M/n, and M/G/1 results are exact. We compare spreadsheet and simulation results for these queues. We calculate average error of simulation is 3.638%, which is supported by checking the model against the cases in which the model is known to be exact.

The method is applicable to large number of servers. The larger the server number, the more stable the approximation. We also find out that the utilization at which the model becomes unstable is a function of the number of servers. For example a single server queue with a utilization of .95 would be expected to be much less stable than a 10 server queue with a utilization of .95.

Hopefully our approximation methods will be beneficial to those practitioners who like simple and quick practical answers to their multi-server queuing systems in supply chain operations.

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EXAMINING DRIVING FORCES BEHIND ORGANIZATIONAL MOBILE INFORMATION TECHNOLOGY ADOPTION

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ABSTRACT

This study examines the mobile information technology (IT) adoption decision process and proposes a model predicting the likelihood of adopting mobile IT within organizations. A considerable number of studies have been conducted regarding organizational information technology adoption, but the nature of the organizational IT adoption process is still not well understood. In this study, an organizational mobile IT adoption model is proposed and will be empirically tested by a survey using senior executives.

Keywords: Mobile Information Technology, Adoption, Organization, Healthcare

Introduction

Rapid advances in information technology (IT) have provided enormous opportunities for organizations to reshape internal operations and their relationships with their suppliers, customers, and even competitors. The adoption and diffusion of these ITs have been a central concern for many researchers and practitioners. Researchers interested in this perspective have developed analytical and empirical models which describe and/or predict the adoption decision and extent of diffusion of IT within organizations.

Several prior studies have identified many factors that are possible determinants of organizational adoption of IT. Although many variables have been identified as important in determining IT adoption, researchers have indicated that the findings of these prior studies were not consistent, except for a few empirically supported variables (Wolfe, 1994). This may be explained by some problems in prior organizational IT adoption studies including: 1) poor conceptualization and operationalization of the dependent variables as a simple dichotomous variable (adoption or rejection), 2) lack of distinction between the types of innovations, 3) failure to recognize the complex interactions of vested interests in the decision-making systems, and 4) use of unreliable and non replicable research methods that lack statistical power (Wilson *et al.*, 1999).

Additionally, there are a number of variables and categories that have been found empirically to be related to adoption behavior, but there is little in the way of evidence to suggest (1) which categories

are most important in the sense of explaining variability in adoption behavior, (2) the relative explanatory power of each category, or (3) whether the relative importance of the variables may depend on the type of innovation under consideration (Kimberly and Evanisko, 1981). Finally, a model proposed for certain IT may not justify other ITs since technological, organizational, and environmental statuses have changed. Therefore, factors explaining the IT adoption in prior studies cannot just be borrowed and used but should be revisited and revalidated for an emerging new technology.

The present study offers remedies to the deficiencies noted in the literature. The purpose of this study is to examine the adoption decision process within healthcare organizations and to propose a model predicting the likelihood of adopting emerging IT. Specifically, this study investigates the driving forces behind the adoption of mobile IT, including mobile workstation and mobile telemedicine. .

Background

Organizational Level Information Technology Adoption

Organizational level IT adoption research focuses on understanding the adoption and diffusion process of the adopting organization (Lai and Guynes, 1997). Researchers using this perspective have developed analytical and empirical models which describe and/or predict the adoption decision and extent of diffusion of IT within an organization. Such models mostly focus on the attributes of the innovation and propose relationships between these attributes and the antecedents and consequences of adoption (Chwelos *et al.*, 2001).

Prior literature has identified many variables that are possible determinants of organizational adoption of an IT. Although many variables have been identified as important in determining IT adoption, researchers have indicated that the findings of these prior studies were not consistent, except for a few empirically supported variables (Wolfe, 1994). Additionally, although researchers often strive toward developing a unifying research model, some researchers question the possibility of developing a unifying theory of innovation adoption and diffusion that can apply to all types of innovation (Kimberly and Evanisko, 1981). They argue that a unifying theory might be inappropriate in view of the fundamental differences between types of innovations (Lai and Guynes, 1997).

In response to the lack of a unifying theory of innovation adoption, numerous studies have tried to include as many of the distinctive characteristics of context as possible in the development of an organizational IT adoption theory (Tornatzky and Fleischer, 1990). A number of researchers have attempted to identify these contexts. Among them, Kwon and Zmud (1987) classified these contexts in five broad categories: individual, structural, technical, task-related factors, and environmental factors. Rogers (1983) proposed three contexts including individual (leader) characteristics, internal organizational structural characteristics (such as centralization, complexity, formalization, interconnectedness, organizational slack, size), and external organizational characteristics (e.g. system

openness). Kimberly and Evanisko (1981) also identified three clusters of predictors of innovation adoption – characteristics of organizational leaders, characteristics of organizations, and characteristics of environmental context. Finally, Tornatzky and Fleischer (1990) conceptualized the context of technological innovation as consisting of three elements – organizational context, technological context, and environmental context – that influence the technological innovation decision.

According to Tornatzky and Fleischer (1990), organizational context factors refer to those variables affecting the organizational structure that the organization could adjust or change to suit its change environment. On the other hand, technological context factors represent the perceived characteristics of the IT innovation. Finally, environmental factors refer to those that create threats as well as opportunities for an organization and usually beyond the control of management. This framework has been empirically tested by many studies and has been found useful in understanding the adoption of technological innovations.

Technology-Push and Need-Pull

Technology-push/need-pull (TP/NP) has been studied in various areas including Engineering/R&D, Marketing, and Information Systems. The push/pull theory evolved from the engineering/R&D literature as a key paradigm in explaining the project's success or failure (Mowery and Rosenberg, 1979; Utterback, 1974). The theory has played a key role in explaining the underlying motivation and driving forces behind the innovation of a new technology.

The technology-push model is based on the view that a new scientific discovery will trigger events ending with diffusion or application of the discovery (Munro and Noori, 1988). The technology-push school argues that the users' needs have a relatively minor role in determining the pace and direction of innovation. On the other hand, the market-pull (or need) model is based on the view that users' needs are the key drivers of innovation, thereby suggesting that organizations should pay more attention to needs for innovation than maintaining technical competence (Mowery and Rosenberg, 1979).

In information systems, Zmud (1984) suggested using the technology-push (TP) and need-pull (NP) concepts to explain behavior in adoption of new technology. In his study, he developed a model of process innovation to explain practices in the adoption of software using responses in a questionnaire from 47 software development managers. Even though his investigation failed to validate the push-pull theory in the context of IT adoption, Zmud's framework has been empirically tested and supported by many other researchers.

After Zmud's research, Munro & Noori (1988) reexamined the theory and empirically supported the technology-push adoption in manufacturing automation. They found that the integration of push-pull factors contributed to more innovativeness than solely a need-pull and a technology-push motivation.

They also found that the technology-push and integrative perspectives yielded more commitment to technology adoption than did the need-pull approach.

Rai & Patnayakuni (1996) also applied the TP/NP concept to organizational computer-aided software engineering (CASE) adoption. They proposed two need-pull and technology-push factors for CASE adoption. The two need-pull factors are information systems departments (ISD) environmental instability and ISD performance gap, and the two technology-push factors are the degree of learning about CASE from external information sources and the degree to which resources support internal experimentation of technology by the IS department. Rai and Patnayakuni concluded that there was a clear tension between the effect of need-pull and technology-push factors on the CASE adoption context (Figure 1).

Chau & Tam (2000) also proposed two TP/NP factors in the context of open systems adoption. The two TP-related factors are the benefits obtained from adopting the technology and the costs associated with its adoption, and the two need-pull factors are performance gap and market uncertainty. They found that a TP factor (migration cost) significantly influenced open systems adoption.

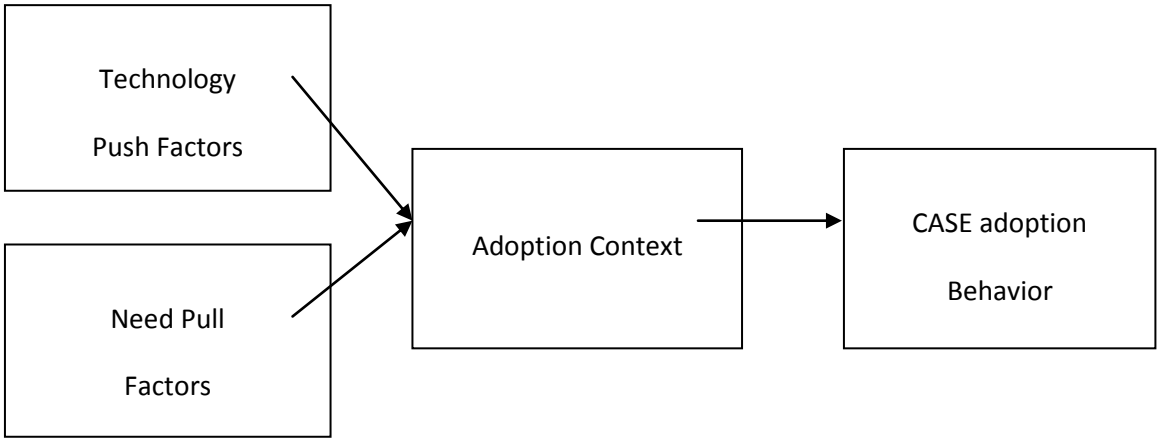


Figure 1. The influence of Technology Push and Need Pull on IT Adoption

Source: Rai, A., and Patnayakuni, R. (1996). A structural model for CASE adoption behavior. *Journal of Management Information Systems, 13*(2), 205-234.

Healthcare Industry and Information Technology

Healthcare is one of the world's largest industries. In the United States, for example, it accounts for 14 percent of GDP (Janz *et al.*, 2005). Healthcare is also arguably the most complex and regulated industry, regularly facing change brought on by federal, state, and local regulation, changing competitive landscapes, mergers and acquisitions, and the pressures of cost control (Finch, 1999). The healthcare industry historically has lagged behind other industries in the adoption of technologies partially due to healthcare managers and executives struggling to cope with environmental challenges in the healthcare industry (Menon *et al.*, 2000). According to Rundle (2000), the healthcare industry is falling behind in issues of management, particularly with respect to adopting and managing automation and technology. Zukerman (2000) pointed out that it is the dynamic nature of the healthcare industry that leads organizations to struggle to survive in turbulent conditions. Janz *et al.* (2005) explained this struggling as the healthcare industry's increasingly limited resources and expanding expenses.

While the healthcare industry historically has lagged behind other industries in the adoption of technologies, this is changing at a faster rate (Finch, 1999). Healthcare industry leaders and decision makers have begun to realize the supporting role of technology in their effort to maintain a focus on quality care while meeting the pressures from regulatory bodies, competition, and achieving business and performance goals.

The introduction of IT in the healthcare environment led to an increased accessibility to healthcare providers, more efficient tasks and processes, and a higher quality of healthcare services (Kern and Jaron, 2003). These improvements became possible when an increasing number of healthcare providers began to use hand-held mobile devices networked by wireless LANs to reach patients and access medical information and electronic records. The healthcare market comprises only 10% of the mobile computing market, but healthcare is projected to grow into a major segment for the total market for mobile computing (Finch, 1999).

The mobile workstation is an example of recently adopted mobile computing technology in hospitals, which can be used for medical records, diagnostics, charting, pharmacy, admissions, and billing. With mobile work stations, physicians can write prescriptions at the point of care, from their offices or from home computers (Coonan, 2002). While inputting orders, physicians can be prompted on drug interactions, potential alternatives, formulary restrictions and patient limitations. As a result, generally illegible handwriting is not an issue and the electronic support systems at the bedside can deter errors. Mobile applications are also used in tracking supplies (Chyna, 2005). With this application, users can scan supplies, medical devices and shipments with a scanner or PDA. The application then tracks supply location and can generate a report on the use and the need for replenishment. In addition to those

applications, mobile healthcare data centers and mobile telemedicine are expected to be widely used in the next few years (Varshney, 2005).

Research model and hypotheses

Research Model

It is widely known that the IT adoption is a process through which an individual or other decision-maker units pass from first knowledge of an IT, to an attitude formed towards the IT, to a decision to adopt or reject, to implementation of the IT, and to confirmation of this decision (Rogers, 1983). However, prior studies have not distinguished the factors influencing different phases of the adoption process. Consequently, it is difficult to find which phase is an antecedent of which. For example, perceived benefits and organization size have been cited as two most important factors determining adoption decisions within organizations, but their role is different in the context of the adoption decision process.

To understand the nature of the organizational level IT adoption decision better, the present study distinguishes the driving factors behind the adoption of IT from other factors which strengthen or weaken the effects of these factors. It will help to find the driving forces of IT adoption within organizations and provide an answer to the research question: why do organizations adopt IT? To accomplish this objective, this study uses the theory of technology-push and need-pull, which has played a key role in explaining the underlying motivation and driving forces behind the innovation of a new technology (Figure 2).

Hypotheses Development

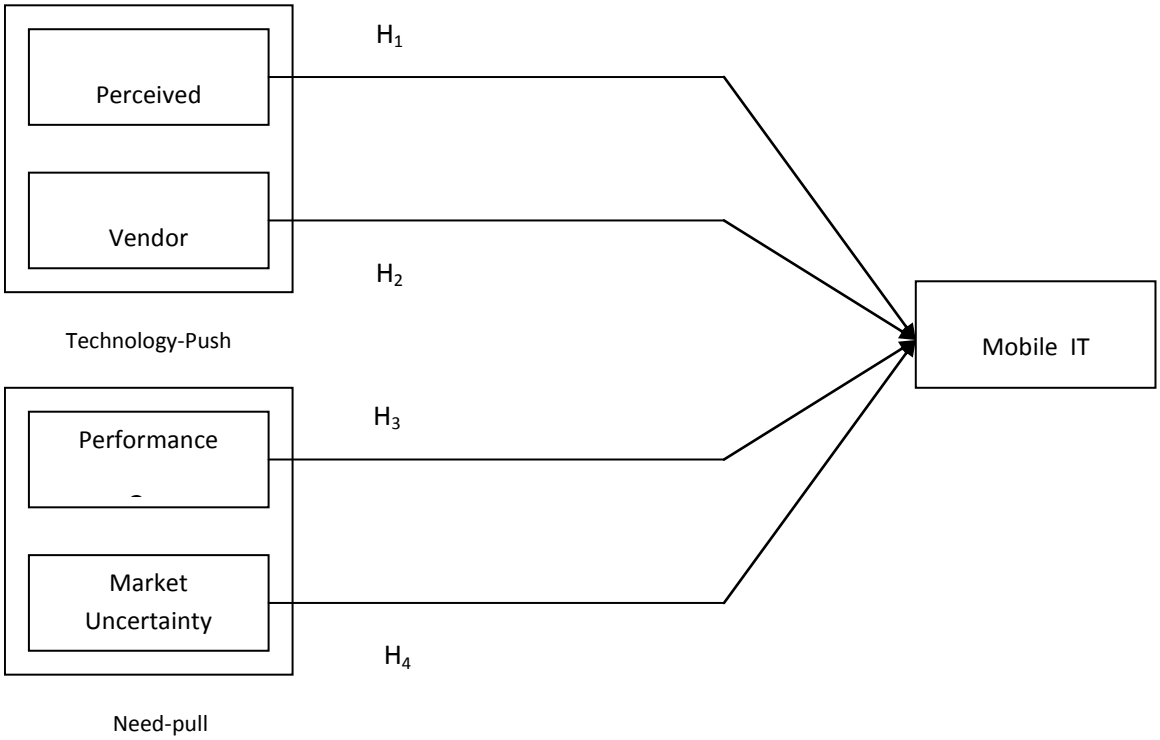
Technology-Push

Technology-push stems from recognition of a new technological mean for performance enhancement. Technology-push proponents claim that change in technology is the primary driver of innovation. Phillips (1966) argued that the user needs had a relatively minor role in determining the pace and direction of innovation. Munro & Noori (1988) claimed that the technology-push and integrative perspectives yielded more commitment to technology adoption than did the market-pull approach. Chau & Tam (2000) also reported that technology-push factors significantly influence open systems adoption. The present study includes two technology-push factors: vendor promotion and perceived benefits.

Perceived Benefits

Perceived benefits refers to the level of recognition of the relative advantage that a technology can provide to the organization (Rogers, 1995). Perceived benefits used in this study closely correspond to the term “relative advantage” which has been used in many innovation studies. The perceptions of an innovation by members of an organization’s decision-making unit affect their evaluation of and propensity to adopt a new product (Rogers, 1995). The perceived benefits, including economic incentives, of adopting the technology should exceed that of alternatives, if organizations are to

consider adopting (Anderson and Narus, 1999). Cragg & King (1993) found that perceived benefit was the only variable that was consistently found to be the most important factor for the adoption of EDI in a number of studies.



Perceived benefits are divided into two categories. The first is direct benefits, which are mostly operational savings related to the internal efficiency of the organization. The second one is indirect benefits, which are most tactical and competitive advantages that have an impact on business processes and relations. Therefore, it is expected that perception of the benefits offered from mobile technologies significantly influence the likelihood of adopting mobile technologies.

H_1: Perceived benefits are significantly associated with the adoption of mobile IT in the healthcare industry.

Vendor Pressure

Prior studies on information systems adoption have extensively focused on explaining the innovation and adoption of information technology by the potential adopter population in the IT market. However, studies have shown that supplier marketing activities have a significant effect on the adoption decision (Frambach et al., 1998). According to Rogers (1983) marketing activities and competitive strategies play an important part in the adoption of innovations. Especially, in mobile computing adoption, it has been

found that vendors play a significant role determining adoption decision (Dash, 2001). This suggests the following hypotheses:

H_2: Vendor pressure, or marketing activity, is significantly associated with the adoption of mobile IT in the healthcare industry.

Need-Pull

Need-pull is one of the significant driving forces for innovation, and numerous studies have claimed that need-pull innovations have been found to be characterized by higher probabilities for success than that of technology-push innovations (Zmud, 1984). Meyers and Marquis (1969) found that three-quarters of the innovations were derived by need-pull. Utterback (1974) also stated that 60-80% of the cases in his meta-analysis were derived by need-pull. The present study includes two need-pull factors to measure the role of need-pull in organizational IT adoption: performance gap and market uncertainty.

Performance Gap

Carr and Hard (1996) state that while the external world creates compelling needs for change, the internal one is the everyday reality for most organizations. Some internal considerations include shareholder dissatisfaction, falling profits, or market share. It has been suggested that the rate of innovation is likely to increase when changes in the environment make existing procedures unsatisfactory (March and Simon, 1958; Rai and Bajwa, 1997). According to Firth (1996), one of the characteristics that emerged to help explain the adoption of innovation is the performance gap or the perceived shortcoming of the organization or processes that may be remedied by a change. A performance gap from existing systems may result from a low satisfaction level with existing IT, an unacceptable price/performance ratio of the existing systems or an inability to serve the organization's new need (Chau & Tam, 2000). Bogan & English (1994) expressed that some elements of the core business system that appear to be overloaded, obsolete, or inadequate leads to identification and adoption improvement opportunities. This argument leads to the following hypotheses:

H_3: The performance gap rising from existing IT is significantly associated with the adoption of mobile IT in the healthcare industry.

Market Uncertainty

The motivation to adopt new technology may come from pressure from the external market (Robertson and Gatignon, 1986). Even though market and external factors cannot be controlled by the management of the organization, they significantly affect the way the business is conducted. Carr & Hard (1996) argue that one of the reasons that organizations initiate change is market force, including global competition, new market opportunities, and changing customer needs and preferences. Sadler (1996) also reported that financial loss/drop in profits, increased competition/loss of market share, proactive opportunities and a new CEO, and technological development are the reasons that companies undertake change.

A recent number of studies consistently reported that hospitals face increasing healthcare costs, decreasing state funding, and reduced insurance and job benefits payments which push many hospitals to the brink of insolvency (Janz *et al.*, 2005; Varshney, 2005). This suggests the following hypotheses:

H_4: The level of market uncertainty is significantly associated with the adoption of mobile IT in the healthcare industry.

Methodology

Operationalization of Measurement Variables

All latent constructs in this study will be employed multiple item scales. The majority of the items will be written in the form of statements with which the respondent is to agree or disagree on a 7-point Likert scale. Most items will be adopted from existing instruments and modified to fit the context of mobile technologies when necessary. New items will be developed through literature review on the topics. In order to ensure the appropriateness of the research instrument in this research, the instrument will be tested for reliability, content validity, and construct validity.

Human Subjects

Since organizations adopt mobile technologies rather than individuals, the unit of analysis for the study is therefore at the organizational level. Subjects for this study are required to be decision makers within the organization. The sample in this research will consist of decision makers including Chief Executive Officers (CEOs), Presidents, Chairman, Chief Medical Officers (CMOs), and IT executives in the healthcare industry.

Implications and Conclusions

Discussion of Results

Motivated by a need to understand the underlying motivation and driving forces behind the IT adoption, this study proposed and will test a model explaining the adoption of mobile IT. Specifically, this research proposed technology-push and need-pull as the key factors in determining mobile IT adoption in the healthcare industry. Two technology-push factors (perceived benefits and vendor pressure) and two need-pull factors (performance gap and market uncertainty) were proposed and will be tested in this study.

The authors believe that the finding for this research will be valuable for IT adoption in the healthcare industry. The results will be presented at the conference in March 2010, and the preliminary findings (along with a discussion of their implications) will be included in the Conference Proceedings.

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CONTINUOUS IMPROVEMENT BECOMES MORE EFFICIENT BY USING MANAGEMENT SUPPORT SYSTEMS

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ABSTRACT

Continuous improvement is a necessity for any type of dynamic system. Part of continuous improvement is done by introducing appropriate corrective and preventive actions systems (CPAS). CPASs are now considered as the most important parts of a quality assurance system. Finding defects is vital, but the more important issue is to find the roots of the problem and take necessary actions to avoid its happening again. Even though there is a natural match between the characteristics of a CPAS module of a quality management system and the potentials of a well-implemented Management Support System (MSS), to the author's knowledge, there is no published report on the applications of a full-fledged MSS in this process. Additionally, there are gaps in the availability of software programs that have a strong knowledge-based system to assist in the identification of problems and offer proper corrective and preventive solutions. This paper explains the conceptual design of a management support system for continuous improvement through corrective and preventive actions automation. This system was tested in a realistic situation and the results were discussed.

Keywords: Information Management, Management Support Systems, Corrective and Preventive Actions, Quality Assurance.

Introduction

Satisfying customers becomes the result of carrying out a series of sequential activities, from order entry and purchasing through warehousing and shipping. Various customer dissatisfaction levels, ranging from asking questions on problems to formal complaints must be identified and analyzed. Problems may require rework to fix and perhaps even fundamental correction to prevent recurrence. The correction of a mistake may involve direct costs several times those of doing it right the first time. The indirect cost in frustration, loss of credibility and relationship may be even higher. Also, these costs are cumulative to the customer, whose satisfaction is the company's ultimate goal (Stavros 1998).

Therefore, companies must have absolute control of all customer information, and have the latest information readily available to the entire company.

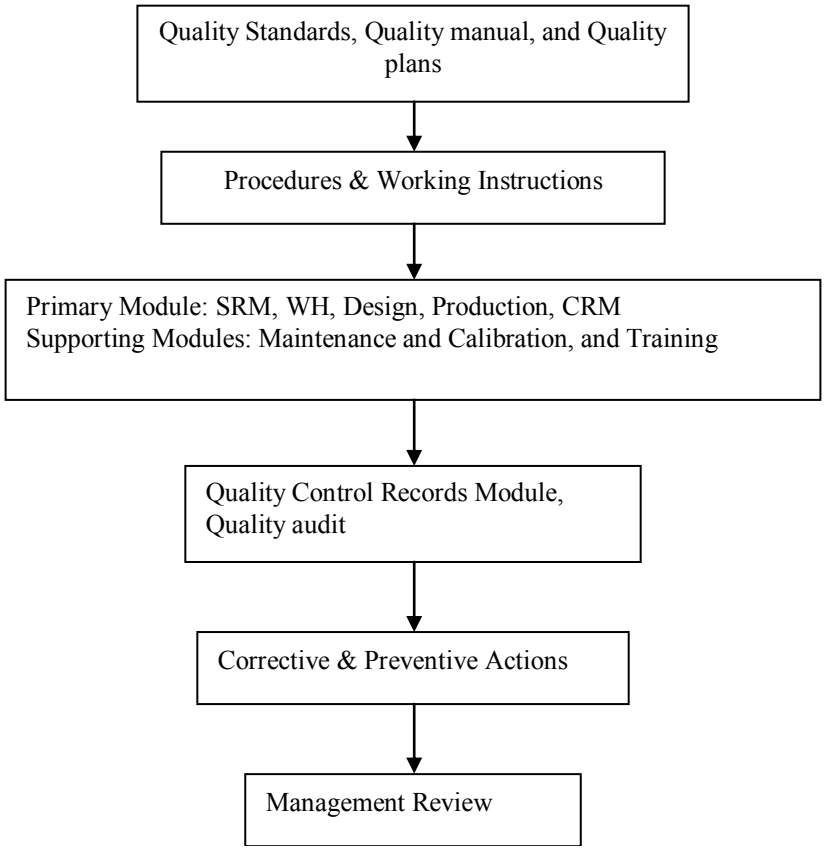
A thorough search on the use and effect of an integrated information management system on quality management produces unsuccessful result. The majority of application software are designed for auditing, documentation, and administrative processes, and not for solving the quality problems which require proper corrective and preventive actions (Hoover, 1994; Badiru, 1995; Hill, 1995; Elmuti, 1996; Jacob, 1997; Minner, 1997; Parr, 1997b; Hoover, 1998; Chase, 1998; Sarkar, 1998; Thondavadi and Mason, 1999). Khan and Hafiz (1999) report on the application of an Expert System Shell called CRYSTAL 4, using a Gauging Absence of Prerequisites (GAP) analysis for ISO9000 implementation. There are some software that automate parts of the CPA module. Examples are: PowerWay Corrective Action by PowerWay; JKT9000 by JK Technologies; CAS 9000 Corrective Action System by Quality & Engineering Services Inc.

Every year the Quality Magazine presents the latest software from manufacturers in the quality business. A recent report indicates there are more than 440 software programs covering analysis/design of experiments (DOE), benchmarking, document control, flow charting, gage management, ISO9000, ISO14000, QS-9000, shape metrology, statistical process control (SPC), statistical quality control (SQC), statistical analysis, technical drawing, and training (Hoover, 1998). An online version of this guide is available at http://qualitymag.com/buyguide/sbg98.html.

By analyzing the information requirements of total quality management systems (Lari and Keynama, 2001), different modules were identified and considered to be the main building blocks of an integrated information system. In identifying these modules, value chain models have been used. The selected modules cover major primary and supporting processes relating to quality. Each of these modules carries an objective, a list of specific major processes, and information requirements (Lari 2001). Information requirements are related to the business processes. One of the very important modules in any quality management system is the CPA.

In a typical quality management system, strategies, directives, structure, requirements, and other details are defined by preparing quality policy, quality manual, and quality plan documents. Based on these documents, the necessary procedures and working instructions are prepared and maintained. These documents set the quality information requirements of the processes within each firm and the processes will make a chain throughout the organization. Some of these processes such as maintenance, calibration, and training are considered as supporting processes. The quality records collected from the system, through the quality audit and other means of data collection are entered into the CPA module. This module is in charge of suggesting proper CPA and is directly related to the management review module. Figure 1 shows the flows and relations of building modules for a quality management integrated information system. Many of these modules should be designed as intelligent decision support systems to include some elements of artificial intelligence in addition to the model base management system.

Figure 1: The Structure of the Proposed System for Quality Information System



Some of the potential benefits of developing and implementing an integrated information system for quality system are listed below:

- Provides the people related to quality functions, with the expertise they need to continuously improve the quality through access to timely and effective tracking and control information.
- Simultaneously, centralizes and distributes the CPA to identify the problems and recommend proper actions based on input from all parties involved.
- Provides management with tools to control the quality of the system, measures its progress and causes awareness of the bottleneck and weak points of the system.
- Provides the specialists with tools and models needed to identify and analyze problems and abilities to share the models with each other.
- Increases efficiency of the quality assurance system

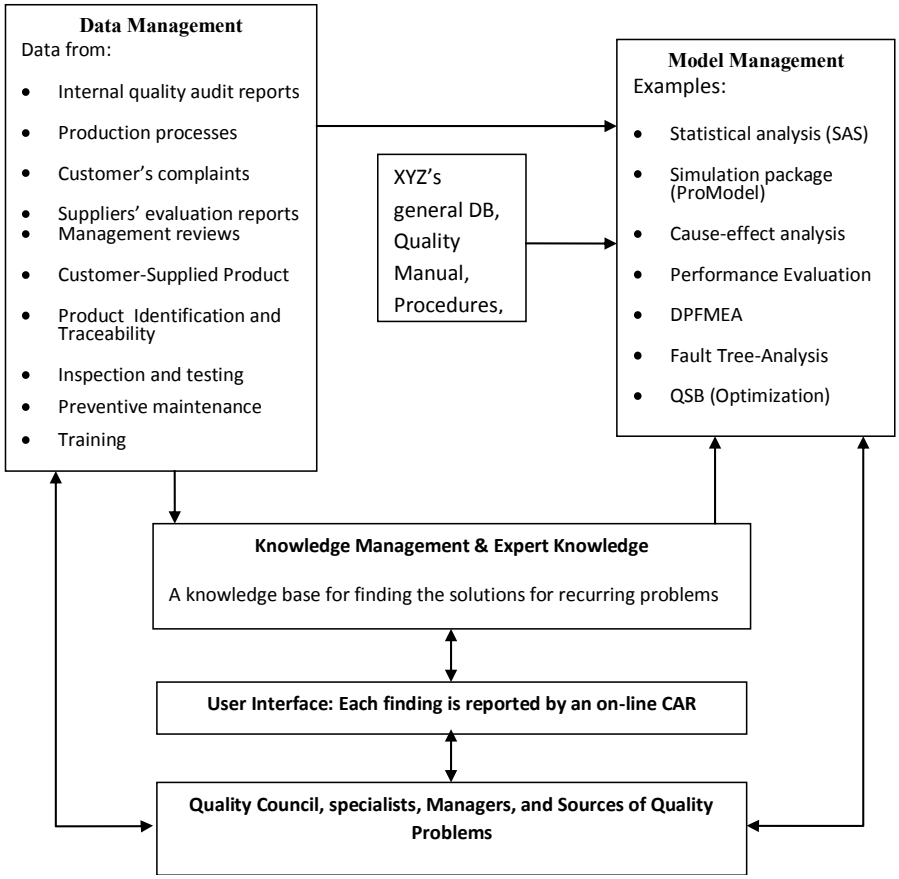
The System Development Process

As is shown in Figure 1, one of the most important modules of any quality management system is the CPA module. Corrective action is the process of documenting audit findings so that they can be remedied.

There is no single best approach to the construction of a MSS (Sprague and Carlson, 1982; Scott-Morton and Keen, 1971; Plenert, 1992). Saxena (1992) compiled a comparative study of various MSS development methodologies. He identified 32 different approaches and discussed their major features and usability. In another study, Arinza (1991) surveyed the major DSS development methodologies. He analyzed them by structure, paradigm, and orientation, and discussed their underlying assumptions. Arinza also developed a contingency theory that showed how each methodology reduced the lack of structure in the decision-making environment. There are several basic MSS development strategies. Because of the intricate nature of the system, there may be a need to integrate different approaches (i.e., writing a customized DSS, using 4GLs, using case tools, etc.).

The components of the proposed system (CPA-MSS) are: 1) database management systems, 2) model base management systems, 3) user interface, and 4) knowledge management. Figure 2 shows the structure of the prototype MSS.

Figure 2: The Components of the Proposed MSS Framework for CPAS



Data management subsystem. The data management subsystem includes the database, which contains data collected from internal, external, and personal sources. Data extracted from internal sources comes from the organization's transaction processing system with respect to quality. The data from external sources include industry data, government regulation, standards, suppliers' information, customer information and any data that may affect the performance of the quality system. Personal data includes guidelines, procedures, standard operation sheets and all documents that are prepared for quality management. The system also stores a general set of data relating to the relevant organizational issues and units such as employees, products, materials and their specifications, equipment, standards, resources, customers' and suppliers' approved list, safety standards of the industry and competitors' data, and industry performance measures. This part includes items such as:

- Job descriptions, organizational chart, the history of changes of the organization, minutes of the management review meetings, list of resources etc.

- Quality manual, flow process chart, quality functions, control procedures, etc.
- Customers' files with all related correspondence, contracts, proposals, payments, project schedules, product specifications, customer-supplied products, customer specifications and requirements, etc.
- Design specifications based on each individual product, design inputs, expected design outputs, minutes of meetings for design review, design verification and design validations, list of all the changes made in the original design.
- List of all documents in the organization together with the number of copies, the owner of the document, list of all the changes and the reason for change, policies regarding the document life and security.
- List of approved vendors with relative information that stores the records about the quality of supplied products and delivery.

Note: the above is not an all-inclusive list.

Model management subsystem. The model management subsystem is composed of a model base that contains routine and special statistical, financial, forecasting, simulation and other quantitative models that provide the analytical features. These are models that support the process of optimizing the necessary corrective and preventive actions and study their effects on organization. A model directory that catalogs and displays the models for use by several individuals in the organization is the other part of the model management system.

Some specific models that can be used are as follows:

- Statistical analysis models for statistical control and sampling.
- Simulation packages for both optimization and training purposes.
- Cause-effect analysis for trouble shooting of quality problems.
- Quality function deployment for customer requirements identification and analysis.
- Total preventive maintenance models.
- Project and resource allocation models.
- Reliability and performance evaluation models.
- Design and Process Failure Mode and Effect Analysis (DPFMEA)
- Fault Tree Analysis (FTA).

Knowledge management subsystem. The knowledge component consists of one or more intelligent systems. Expert systems and Neural Networks could be used as intelligent systems for determining proper prevention measures.

User interface subsystem. The user communicates with and commands the system through this subsystem. It covers all aspects of communication between user and the system including hardware and software. The system users are various levels of managers, technicians and engineers working with multiple aspects of the system. One major user group of the system is the quality assurance people who are directly involved in quality audits.

The flow process of the CPA is as follows:

- Collect problem reports from quality control records module (that connects to different sources including customers, suppliers, internal quality audit, process, incoming goods and services, final inspections, quality meetings, management meetings, different departments) and internal quality audits. Customer feedback must be continually solicited and monitored. Customer feedback is not a one-time effort; it is an ongoing and active probing of the customer's mind. Feedback enables the organization to: Discover customer satisfaction; Discover relative priorities of quality; Compare performance with the competition; Identify customer's needs; Determine opportunities for improvement. Listening to the voice of the customer can be accomplished by numerous information collecting tools. The principal ones are comment card, surveys, focus groups, toll free phone lines, customer visits, report cards, the Internet etc. Complaints can be seen as an opportunity to obtain information and provide a positive service to the customer. In reality, the customer is giving the organization a second chance. Each finding requires a corrective action request (CAR). Similar findings are grouped into one CAR. CARs are also available on-line at different sources of data collection.
- Register all the problems with the relevant information in a log file where source of quality problems and other information are also registered. Findings are categorized as follows: 1) Major (systematic, critical) – A complete breakdown in an element of the quality management system (QMS), or 2) Minor (isolated) – Single lapse of a requirement.
- CARs are addressed to the responsible manager.
- Query the database to find if there is any record about similar cases and solutions. This is a file in the database that includes all the previous problems and their respective solutions. If the problem is a repeated one, then the solution will be automatically drawn from the database. The data stored for each non-conformity include the followings: The symptom(how did you find the problem?); The symptomatic cure (immediate corrective action); The apparent cause (what caused the problem originally?); The fix (solution that can also prevent the problem from happening again);
- Refer the unsolved problems to a quality council, which uses the components of CPA-DSS and its tools such as expert systems, neural networks, cause and effect analysis, Fault Tree Analysis (FTA) and Fault Mode Effect Analysis (FMEA) to recommend the proper corrective and/ or preventive course of actions. The quality council is established to provide overall direction. The council is composed of the chief executive officer (CEO), the senior managers of the functional areas, and a coordinator. In the process of finding the appropriate corrective and preventive

action, there are four primary improvement strategies: 1) repair, 2) refinement, 3) renovation, and 4) reinvention. Choosing the right strategy for the right situation is critical. The repair and refinement strategies require that all employees have the freedom to solve problems and make incremental improvements in their jobs. Repair and refinement improvements are almost immediate with very little cost. Renovation and reinvention are effective in making breakthrough improvements; however, they usually are more costly, take longer to accomplish, and have a greater risk of failure.

- Keep track of the suggested solutions and the follow-ups. CARs are kept open as long as the root cause of the problem has not been found. A continuous follow up is in place until all action items are closed and the results of the corrective actions are validated. The prescribed root-cause analyses should be completed and results documented. Priority is placed on the response to the CAR and closure of the case.
- Update the system and the data in the databases.
- Evaluate the system constantly.
- Refine, expand and modify the system in cycles.

Testing the System and Results

To test the system, a study was carried out with a car designer. The name of the company is withheld due to a nondisclosure agreement with the executives. ABC is the sole center for research and development in the Car Industry of a developing country. It is a subsidiary of the second largest car manufacturer in that country. It started its activities from ground up in 1993 and successfully received the ISO9001 certificate in 1997. Following preliminary discussions with the Chief Information Officer of the company, permission was granted for constructing the corrective and preventive action prototype based on their data. The prototype was built, and within a six months period, more than 60 cases of nonconformities were brought into the system. Lack of training, ineffective procedures, and processes that did not follow the written procedure, were the cause of most findings. Based on this information, a data warehouse is under construction. The application of other methods of reasoning, and selection of the proper actions, such as neural networks and expert systems are under study.

Conclusion

The quality management system, with its immense information and analytical processing needs, is appropriate for the application of an integrated management information system based on an intelligent DSS model. The majority of existing application software are designed for auditing, documentation, and administrative processes. On the technical side, there are many application software in a limited number of functions such as statistical process control, calibration, and gage management. The proposed system is a conceptual model that assures a streamline approach to information and analytical processing for CPA. This module has been developed and empirically tested in a company. Based on the results achieved within a six-month period, some modifications are suggested.

The model is conceptually sound with great potential for implementation across companies and industries. It can be adjusted in scope and function based on the specific company's characteristics and needs. The various components of the system can be built upon and expanded as the need arises and the company grows. The system creates different reports to determine whether any trends are developing. The management is sensitive to findings that recur over long periods of time.

However, there is no substitute for the skills of an experienced quality manager and dedicated employees. The components of the system are merely tools. They do not replace responsibility, accountability, discipline, or decision-making. The system is not a panacea for individual employee action. The system is at its best when the company's culture is analyzed; when the best business processes and functions are identified and supported; and when the strengths and weaknesses of the company are explored and worked on.

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USING THE SIXTEEN PERSONALITY FACTOR QUESTIONNAIRE TO PREDICT TEACHER SUCCESS

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ABSTRACT

Faculty involved in pre-service teacher education often debate whether individual characteristics can predict effective teachers. Research is inconclusive with respect to the factors capable of predicting effective teaching. This paper reports the results of a longitudinal study that identified self-reported characteristics of pre-service teachers during their semester of student teaching and their teacher effectiveness, as rated by their building principal after becoming employed as a teacher. Teacher scores on each of the 16 primary factors measured on *16-PF Personality Scale* were regressed on their principal's effectiveness rating. Stepwise multiple regression analysis generated a model that explained 17.0% of the variance in principal ratings of effectiveness and the model included four factors from the *16-PF* Questionnaire as significant predictors of principals' success ratings. Those factors were: (a) Factor Q3, Perfectionism; (b) Factor Q4, Tension; (c) Factor N, Privateness; and (d) Factor G, Rule-Consciousness.

Introduction

In the mid 1980s, a cry for better teachers in America's classrooms was heard across the nation ("Improvement Anticipated," 1984). This article in the *Chronicle of Higher Education* suggested that increased school enrollments (attributed to the influx of baby-boomer babies) greatly improved the educator's job market. These changes not only created a need for more teachers, but for those individuals who could perform more effectively and efficiently in the classroom. Feistritzer (1984) concluded from his study of teacher education programs in the United States that at least half were inadequate in preparing good teachers due to the lack of entry and exit requirements.

Rod Paige, U.S. Secretary of Education in 2002, stated that the *Meeting Highly Qualified Teachers Challenge* report to Congress revealed that state certification systems allow too many teachers who lack solid subject area knowledge into the classroom. In addition, the National Center for Education Statistics found that 50% of teachers have left the profession within five years of their first job (National Commission on Teaching, 2003), and Karge (1993) stated that 40% of new teachers leave after only two years.

The critical need for preparing effective teachers has been and continues to be a major concern. College faculty involved in pre-service teacher education often debate whether successful teachers can be identified and whether successful teaching can be predicted. Thus, a means of predicting successful teachers from pre-service experiences in current teacher education programs would address these two issues. Haberman (1993) stated, "Schools should be built better and kept up better than banks because there's more wealth in them. But no matter how important the facilities—and they are extremely important—what matters most is the quality of the teachers" (p. 1). To predict teacher quality, that is to predict the successful teacher, is the focus of this paper. Specifically, the purpose of this study was to determine if the 16 primary factors measured on the *Sixteen Personality Factor Questionnaire* (16PF) can predict teacher success as evaluated by principals.

Review of Related Literature

Heller and Clay (1993) included the following measures as predictor variables in their study on teacher effectiveness: (a) years of teaching experience; (b) cumulative college grade point average; (c) NTE scores for the *Professional Knowledge, General Knowledge, Communication Skills,* and *Specialty Area* subtests; (d) SAT scores in English and Math; and (e) rank in high school graduating class. The principals' ratings of the teachers' *overall teaching effectiveness* served as the criterion variable. They found low correlations (r = -.02 to .24) between the criterion and predictor variables; however, those correlation estimates of .18 to .24 were significant at the .05 alpha level. The sample size (n = 36) may explain the significance of these estimates. The best predictors were college GPA and NTE *Professional Knowledge* scores; correlation coefficients for both variables were reported as r = .24. When data were analyzed using stepwise multiple regression, the group of predictor variables did not explain a significant amount of the variance in teaching effectiveness. Heller and Clay concluded that neither individual predictor variables nor variables as a group were appropriate for predicting teacher success. This conclusion supported previous findings by Schalock (1988) who stated, "We are essentially without any reliable predictors of who will or will not be good teachers" (p. 8).

In an effort to identify the characteristics of successful urban teachers, Sachs (2004) developed an instrument to measure the attributes of pre-service teachers that contribute to their success in the urban classroom. Her study revealed that "the five hypothesized teacher effectiveness attributes—sociocultural awareness, contextual interpersonal skills, self-understanding, risk taking, and perceived efficacy—did not discriminate between highly effective and less effective urban teachers" (p. 182). She

admits that the attributes taken together may be a "measure of teachers' resilience rather than their effectiveness" (p. 184).

Pratt (1987) studied 100 teachers who graduated from college in 1971. He compared attributes of those graduates who remained in the teaching force after 13 years of employment to those graduates who had dropped out. The only variable to discriminate the two groups was a pre-admission interview score collected prior to entering the teacher education program. Graduates who remained in teaching tended to score higher on the interview score as pre-service teachers than those graduates who had dropped out of teaching. Variables that did not discriminate were gender, age at the beginning of the teacher education program, undergraduate degree, and length of program (i.e., a 3-year or 4-year degree).

Shechtman (1989) studied 97 teacher education majors in the School of Education at Haifa University, Israel. Predictor variables included: (a) a group assessment procedure score determined at the time of admission to the college program; (b) scales A, B, E, and H from Cattell's *16-PF* personality questionnaire; (c) two matriculation scores consisting of the average of the applicant's high school grades and matriculation examination scores; and (d) an intelligence score. Criterion variables were practice teaching evaluation scores (PTE) and college GPA. The only predictor variable that significantly correlated with PTE was the group assessment procedure score; the *overall impression* of the interviewers was the strongest and best predictor of PTE (r = .45, $p \leq .01$). Overall impression of the interviewers was also the strongest and best predictor of college GPA (r = .40, $p \leq .01$). These findings were consistent with those of Pratt (1987) in that interview data prior to admission to the program were the best possible predictors of success.

Glass's study (2002) involved predicting the success of teachers based on student achievement. His study brings to the review of related research disclaimers about predicting teacher success. Glass divided previous research into two categories: micro-studies and macro-studies. Micro-studies use data from individual teachers, and macro-studies use data from groups of teachers. Glass stated that research involving the National Teacher Examinations found low correlations between NTE scores and teachers' grade-point averages or principals' ratings of teachers' qualities, and negative correlations with grades for practice teaching. He also indicated that researchers suggest that professional evaluations are "unreliable or biased or distorted by friendships or prejudices or unsophisticated views of quality teaching" (p. 159). His research indicated the following: (a) "paper-and-pencil tests are not useful predictors of teaching candidates' potential to teach successfully and should not be used as such," (b) the academic record of undergraduates is not a "useful predictor of their eventual success as teachers," (c) "students of regularly licensed teachers achieve at higher levels than students of emergency certified teachers" and "more experienced teachers produce higher student achievement than less experienced teachers," and (d) "the selection of teachers who will best contribute to their students' academic achievement should focus on peer and supervisor evaluation of interns, student teachers, substitute teachers and teachers during their probationary period" (p. 171). Glass's study implies the need for developing instruments that steer clear of tests and rely on the evaluations of pre-service teachers to determine their possible success in the classroom.

While the interest in being able to predict teacher success has been ongoing, researchers have struggled with finding an instrument that would do so. In 1952, Barr indicated that Cattell's *Sixteen Personality Factor Questionnaire* (*16-PF*) had been used in research as a measurement for predicting teacher success. Using data from teachers and principals, Haberman (1991) identified eight mid-range functions as characteristics of satisfactory-or-better teachers. Among these functions were organizational skills, stamina, planning, and discipline. Despite these findings, Haberman stated that "written tests of personality could not predict who would be an effective teacher" (p. 1).

Purpose of the Study

As schools are being held increasingly more accountable for student achievement, teacher preparation programs are also being held accountable for the quality of teachers that graduate from their programs. University faculty and accreditation agencies seek to identify those factors that characterize effective teachers in order to deliver programs that will meet the needs of new teachers. This study seeks to identify specify personality factors that characterize successful teachers.

Methodology

The *Sixteen Personality Factor Questionnaire* (16PF) was administered to approximately 300 student teachers in six different universities. Using school faculty directories, an effort was made to identify the schools in which these student teachers were employed. For those students whose employment status could be verified and who had taught for three years, the researchers mailed a 5-point *Likert* scale to their current principal. Each principal was asked to evaluate the success of the teacher under his/her supervision for the entire three-year period using the *Likert* scale (see Appendix A). Due to the lack of current addresses and due to the fact that some teachers had not been with the same principal for the full three years, only 77 principal ratings was recorded.

Scores on each of the personality factors on the *16-PF* were considered as independent or predictive variables. The principal rating was considered the dependent or criterion variable. These data were analyzed using stepwise multiple regression methods to determine if any of the *16-PF* personality factors were significant predictors of the principal's perception of teacher effectiveness, as measured by the principal's rating on the 5-point Likert scale, after three years of teaching.

Instrument

The *Sixteen Personality Factor Questionnaire (16-PF)* was developed and first published by Dr. Raymond B. Cattell in 1949 (Cattell, R., 1978). The instrument has been widely used in research, and the instrument has been revised on four different occasions since originally published. The inventory is used worldwide and has been translated into 40 languages. The *16-PF* is comprised of 16 primary factor scales and 5 global factor scales that were developed through factor analysis. The *16-PF* has been effectively applied in a wide variety of research settings including industrial and organizational, clinical and counseling, and educational. These applications have resulted in a wide range of prediction

equations for criteria such as creativity, leadership, interpersonal skills, marital adjustment, and an assortment of occupational profiles (Cattell, Eber, & Tatsuoka, 1970; Guastello & Rieke, 1993; Russell & Karol, 1994).

The 5th edition of the *16-PF* was used in this study. Test-retest reliabilities range from .69 to .87 with a median of .80. Internal consistency coefficients for the 16 primary factor scales yielded weighted averages ranging from .66 to .86 with a median of .75 (Cattell, H., 1994). Individual evidence of construct validity of the *16-PF Fifth Edition* primary scales was established by investigating the relationship between them and four external measures of personality. Validity coefficients demonstrated a high degree of correlation with the external instrument (Cattell, H., 1994).

Results

Raw scores for each of the *16-PF* factors were calculated according to the scoring instructions that accompany the questionnaire. The 16 factor scores were entered as predictor variables in the stepwise multiple regression analysis. Bendel and Afifi (1977) suggested that a more liberal probability level of .15 or .20 should be used in statistical regression analysis as opposed to the typical .05 criterion used for hypothesis testing. Thus a probability level of .15 was used as the criterion for entry in the stepwise regression analysis.

Table 1shows the linear regression models that were generated by stepwise entry of the variables at a probability level of .15. As seen in the table, four regression models were generated, and all models explained a significant amount of variance in the principals' ratings of teacher success. The R^2 statistic for each model is reported in Table 1 as well. Model 4 of the stepwise multiple regression analysis includes four of the *16-PF* factors as significant predictors of principals' ratings of teacher success. The four *16-PF* factors that were retained in model four included: (a) Factor G, Rule-Consciousness; (b) Factor N, Privateness; (c) Factor Q3, Perfectionism; and (d) Factor Q4, Tension (see Table 2). This regression model explained 17.0% of the variance in principals' ratings of perceived teacher success. The regression coefficients for each of these factor scores are shown in Table 2.

Table 1. *Model Summaries of Stepwise Regression Analysis for Variables Predicting Principals' Ratings of Teacher Success (N = 77)*

Model	Sum of Squares	*df*	Mean Square	*F*	Sig.
1. Regression	3.923	1	3.923	5.389	.023[a]
Residual	54.597	75	.728		
Total	58.519	76			
2. Regression	6.475	2	3.237	4.603	.013[b]
Residual	52.045	74	.703		
Total	58.519	76			
3. Regression	8.479	3	2.826	4.123	.009[c]
Residual	50.040	73	.685		
Total	58.519	76			
4. Regression	9.966	4	2.492	3.695	.009[d]
Residual	48.553	72	.674		
Total	58.519	76			

[a]Predictors: (Constant), PFQ3; R^2 = .067. [b]Predictors: (Constant), PFQ3, PFQ4, R^2 = .111. [c]Predictors: (Constant), PFQ3, PFQ4, PFG, R^2 = .145. [d]Predictors: (Constant), PFQ3, PFQ4, PFG, PFN, R^2 = .170. [e]Dependent Variable: PRRATE

Table 2. *Coefficients for Stepwise Regression Analysis for Variables Predicting Principals' Ratings of Teacher Success (N = 77)*

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	*t*	Sig.
4.	(Constant)	1.998	.613		3.258	.002
	PFQ3	.111	.052	.242	2.141	.036
	PFQ4	.059	.038	.174	1.575	.120
	PFG	.089	.053	.187	1.669	.100
	PFN	.069	.046	.164	1.485	.142

Note. Dependent Variable = Principals' Rating of Teacher Success

The respective means for these four factors among the sample of teachers in the study are shown in Table 3 along with the corresponding norm group means compiled among male and female college

students with an approximate age of 20. On Factor G, Rule-Consciousness, the study group mean of 8.32 was more than two standard deviations above the norm mean. This suggests that these student teachers perceived themselves as strongly oriented to rules, procedures, and social expectations. They believed in ethical and moral responsibility and dutifulness. High scores tend to be more rule or principle governed (Embree, 2007).

On Factor N, the study group mean was 4.78, which was approximately one-half standard deviation below the norm group mean. This factor, Privateness, has to do with self-disclosure. Low scorers characterized individuals who are more forthright, compared to high scorers who are more discreet. Low scorers are seen as naïve when they do not have the full picture of the job or the situation for which they are preparing (Embree, 2007). Thus, when surveyed during their student teaching semester, the group of 77 teacher education majors was more forthright than the norm group.

Low and high scores on Factor Q3, Perfectionism, can be differentiated in part according to whether the individual tends to be "task orientated" or "process orientated." High scorers, as was the case with the student teachers in this study, tend to be very organized, systematic and methodical. They are goal oriented and focused on conforming to socially accepted customs. High scores characterize individuals with considerable self-control of their emotions and behavior. They are concerned with social reputation. These pre-service teachers, as a group, prefer high levels of structure and tend to have steady work habits. They are oriented toward starting tasks promptly, working first and playing second, and taking deadlines seriously. The mean score for the study group was approximately two standard deviations above the mean for the norm group. As indicated by the regression coefficients, this factor was more strongly related (b = .111, p < .05) to principals' ratings of teacher success than the other *16-PF* factors that entered the model.

Factor Q4, Tension, tends to characterized individuals as demonstrating patience or impatience in response to environmental delays, stresses, and demands. High scorers tend to be constantly busy, efficiency minded, and driven to make things happen. Delays frustrate them. They want to get things done.

Table 3. *Factor Means and Norm Group Means for Factors That Entered the Prediction Equation*

	Study Group		Norm Group[a]	
Factor	Mean	*SD*	Mean	*SD*
PFG	8.32	1.85	4.46	1.67
PFN	4.78	2.09	5.59	1.93
PFQ3	7.75	1.90	4.92	1.77
PFQ4	6.48	2.57	5.68	1.74

[a] Table 8.5, p. 179 (16PF, Fifth Edition, Technical Manual, Cattell, H. , 1994)

The resulting prediction equation can be expressed as follows:

$\hat{Y}$ = .089PFG + .069PFN + .111PFQ3 + .059PFQ4 + 1.998, and the linear model explains 17.0% of the variance in principals' ratings of teacher success. The probability level used for entering variables into the regression question was established at α = .05. The positive regression coefficients indicate that higher scores on the four *16-PF* factors should result in higher teacher success ratings by principals. Pre-service teachers who perceive themselves as perfectionist, organized, and self-disciplined are likely to receive higher success ratings from their principals than pre-service teachers who perceive themselves as tolerating disorder, unexacting and flexible. Rule-conscious, conforming and dutiful pre-service teachers tend to receive higher success ratings from their principals than do pre-service teachers who perceive themselves as nonconforming and expedient. Interestingly, those pre-service teachers who characterized themselves as private, discreet, and non-disclosing were likely to be rated higher with regard to success than pre-service teachers who characterized themselves as forthright, genuine, and open. Pre-service teachers who perceived themselves as tense, impatient, driven, and possessing high energy tended to receive higher ratings from their principals as opposed to those pre-service teachers who perceived themselves as relaxed, patient, and composed. In a 1991 study, Haberman identified organizational skills, stamina, planning, and discipline as functions characteristic of satisfactory-or-better teachers. These four characteristics are all high-range descriptors of the Perfectionism factor (Q3) on the *16-PF*. When interpretation of these four factors is juxtaposed with the principals' ratings of effective teaching, these factors may be considered appropriate predictors of successful teachers when the factors are measured during the teachers' student teaching experience requirement of their teacher education program.

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Appendix A

Teacher Success Rubric

TEACHER SUCCESS RUBRIC

Use the rubric below to rate each teacher on these collective components of effective teaching.

- Commands a knowledge of content and subject matter
- Teaches to the needs of individual students
- Plans effectively for classroom instruction
- Maintains a well-managed classroom
- Utilizes a variety of instructional and assessment techniques
- Demonstrates a good work ethic and a high level of professionalism

5 - demonstrated *all* of the time

4 - demonstrated *most* of the time

3 - demonstrated *some* of the time

2 - demonstrated *rarely*

1 - never demonstrated

TEACHER LICENSURE AND QUALIFIED TEACHERS: ARE CERTIFICATION EXAMINATIONS ENOUGH?

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ABSTRACT

One criteria of No Child Left Behind (NCLB) stipulated that all teachers in all schools were highly qualified by the 2005-2006 school year. Teacher certification is one criteria that deems teachers to be highly qualified yet is the content which they are said to have mastered sufficient for them to be teaching our future leaders? This paper provides insight into state requirements for teacher certification and a look the math content required to be certified to teach high school mathematics and what concepts are being tested by a popular testing company.

Keywords: Teacher licensure, highly qualified teacher, teacher examination

Introduction

When the No Child Left Behind (NCLB) Act was passed into law in 2001, one criteria stipulated that schools were to ensure that all teachers were highly qualified by the 2005-2006 school year. NCLB defines highly qualified teachers as those who have 1) a bachelor's degree, 2) full state certification or licensure, and 3) proof that they know each subject they teach (NCLB, 2001). This definition gives greater weight to teachers' subject knowledge over other teacher knowledge thus creating a narrow view of what it means to be a qualified teacher. Former governor George Busbee of Alabama commented decades before in the February 1980 Legislative Review, "…unless we have adequate assessment of quality of teachers to both pass the criterion referenced test and satisfactorily demonstrate good teaching skills on the job…we have failed (Hathaway, 1980)." This preemptive notion brought to light the idea of requiring teacher testing.

One measure of teacher quality is teacher licensure tests. Latham, Gitomer, and Ziomekl (1999) supported teacher testing as such a measure. The proliferation of medical licensing in the early 20th century demonstrated the increase of professionalism in the medical field (Angrist and Guryan, 2005). Occupational licensing provided a measure of professional quality causing proponents of teacher licensing to want to follow suit (Angrist and Guryan, 2005).

During the 1990s, student expectations climbed regarding knowledge needed for graduation. However, the demands for the rigorous increases in student requirements were not matched by a strong demand for an increase in teachers' knowledge (Mitchell and Barth, 1999; Hall, 1896; McLaughlin and Chaddock, 1998). Americans were not satisfied with the disparate increase in expectations. A March 1993 MONEY Reader's poll disproportionately indicated (78%) support of a requirement for teachers to pass a national competency test, and to do so at least every five years. Americans then, and now, fear that unless we improve the quality of our teachers, the quality of our students' education will also not be improved (Shanker, 1996).

Progression of Teacher Licensure

When our country was establishing its roots, the qualifications for becoming a teacher were much more relaxed. According to a manifesto on teacher qualifications written in 1875, "If a teacher has and loves knowledge, and has a strong and quick feeling for childhood, a few simple and easily taught rules, devices and a few dozen lessons…are enough for the rank and file (Hall, 1896)." People of this era believed that good teachers were born, not made (Angus, 2001). The view has markedly changed over the last two centuries; teachers now must pass competency tests to verify they possess enough knowledge to teach our nation's children. However, this notion of teacher examination is not new and has actually had a cyclic effect during the development of the United States.

During the 1830s and 1840s, schools were changing from privately funded institutions to free common school (Angus, 2001). The country was littered with one-teacher schools serving children in small districts, while cities were populated with multi-classroom schools offering "graded" instruction. The idea of "common" free school brought to light that the teachers of the rural and urban schools should be equally qualified to teach and thus have had equal training. As these schools were markedly different, this idea of where and how teachers should be trained sparked controversy (Angus, 2001).

While the national movement toward centralized state authority did not take place until the late 19th century, some states were early supporters of teacher examinations. In 1834, Pennsylvania was the first state to require teachers to pass exams on basic skill competencies of reading, writing and arithmetic (Ravitch, 2003). In 1843, New York started the movement toward centralized state authority by "authorizing the state superintendent to set examinations and issue teacher certificates that were valid state wide (Angus, 2001)." By the turn of the century, most states had followed. But in order to acquire a state certificate, prospective teachers had to prove knowledge of U.S. history, geography, spelling and grammar in addition to basic skills (Ravitch, 2003). At this time, only three states, New York, Rhode Island, and Arizona (as a territory) required all new teaching certificates be issued by the state (Angus,

2001; Angrist and Guryan, 2005) The vast majority of teachers in the US during the second half of the 19th century had received a teacher certificate by means of examination (Angus, 2001).

Teacher testing was the primary means of certification during the beginning of the 20th century. At this time, teacher certification was identified with the completion of a teacher education program at a local college or university (Ravitch, 2003). The shift of human resources brought about by the outbreak of World War II depleted the teacher supply when women (the primary teacher population) took the jobs of men who had gone off to war. During this time, the interest in teacher examination diminished (Angus, 2001; Ravitch, 2003) as officials were forced to adjust requirements in an effort to keep their classrooms staffed.

The quality expected of teachers continued to be neglected after World War II until 1957 when the Soviets launched the world's first satellite Sputnik into space. The Soviets beating Americans into space was a wake-up call that sparked officials to attack teacher preparatory schools for "low standards of entry and exit, its Mickey Mouse courses, [and] lack of coherent professional knowledge base…(Angus, 2001)." Over the next 20 years, officials developed measures that would again require our classrooms to be staffed with qualified, competent teachers. Interest in teacher examination was revived, this time with greater emphasis on content knowledge.

In 1978, Florida's legislature passed a bill requiring prospective teachers to pass a written examination as a prerequisite in order for them to be certified (Hathaway, 1980). Three states (North Carolina, Mississippi and South Carolina) had already been requiring future teachers to pass the National Teachers Examination for certification (Hathaway, 1980). In 1983, the National Commission released *A Nation At Risk* which caused state and local education agencies to double their efforts to improve the state of the public education system. *A Nation At Risk* found that too many teachers performing at the bottom of their high-school and college courses were being placed into teaching positions, not enough emphasis was placed on content knowledge during teacher preparation, and in the core subjects of math, science and English, only half of the newly employed teachers were qualified to teach these subjects (Angus, 2001). In 1985, Arkansas governor Bill Clinton made national headlines when he proposed mandatory skills tests for all of Arkansas teachers, beginning and veteran (McLaughlin and Chaddock, 1998). Moreover a decade later, 43 states would require that all teacher applicants pass a standardized certification test for teacher licensure.

Teacher licensure to promote teacher quality

In the 1970s, two thirds of the states and some school districts began requiring students to pass minimum competency tests after citizens voiced their concern over declining test scores and illiterate graduates (Hathaway, 1980). After the publication of *A Nation At Risk*, the public demanded teacher

effectiveness be evaluated. Stakeholders were concerned that while student expectations had been increased during the previous decade, standards for educators had not been affected by the effort (Watkins and Coker, 1988; *Money,* 1993; Mitchell and Barth, 1999). The nation felt that in order to achieve higher standards, both students and teachers needed to be tested regularly. Students would need to pass national standardized tests before grade advancement, and teachers would need to pass competency tests every five years (*Money,* 1993; Hathaway, 1980).

In an effort to raise teacher quality, more rigorous certification examinations had been adopted (Angrist and Guryan, 2005). Policy makers wanted tests that would work as screening devices, identifying only applicants who were qualified to teach; the tests were expected to screen out applicants whose general educational background was weak or those whose subject knowledge was insufficient (Mitchell and Barth, 1999; "Report Criticizes," 1999; Hathaway, 1980; Angrist and Guryan, 2005). One reason incompetent teachers are still found in schools is due to the low entrance and exit requirements of teacher preparatory programs. The qualifications for entry into teacher preparatory programs are out of the purview of this paper.

Pitfalls to licensure

While most agree that the quality of our education system stems from the quality of our teachers, there is disagreement over the confidence placed in teacher tests identifying educationally qualified teachers with adequate subject knowledge (Hathaway, 1980). Two central issues have been identified concerning the inadequacy of teacher tests for licensure: the minimalist expectations required by most examinations ("Report Criticizes," 1999; Mitchell and Barth, 1999; Angrist and Guryan, 2005), and an inaccurate "snap-shot" of teacher skill and effectiveness (Watkins and Coker, 1988).

Teacher licensing exams are meant to establish a minimal competency level ("Report Criticizes," 1999; Mitchell and Barth, 1999; Newton, 2007). While it is expected that certified teachers will possess more content knowledge than their students, no subject tests have shown any tested knowledge at the baccalaureate level, which indicates that tests serve as a barrier to entry rather than a quality screen (Angrist and Guryan, 2005). Advocates of teacher examinations argue that standards have been set low because it is expected that teachers will continue to advance their knowledge after entry into the profession. Newton (2007) compared U.S. teachers' tendencies to further their education after entry into the field to those of Chinese teachers'. She discovered U.S. teachers were handicapped in the amount of time they had to devote to their own learning. A Chinese teacher is allotted 60% of a typical school day for instruction related activities, colleague collaboration, and independent studying, while the U.S. teacher is allowed one conference hour per day to accomplish the same tasks. The U.S. teacher rarely has time to do more than grade papers during this hour. The limited allocation of time implies that once U.S. teachers have entered the field, they already know all they need to know.

Another argument against teacher examination is that it does not provide an accurate reflection of an applicant's skill and effectiveness. While an adequate level of content knowledge is necessary, a content knowledge test will only provide evidence of adequate knowledge of the subject matter; it will not provide evidence of what is required to disseminate the information in a coherent manner and to actively facilitate learning.

The National Council for the Accreditation of Teacher Education (1997) supported the view of teacher testing, yet provided no clear standard for what teacher exams should assess. Educational Testing Service (ETS) subsequently developed the *Praxis* test series, used today by 39 states, as a valid measure of a teacher's classroom and academic ability.

Mandated Testing

Recall that one requirement of a highly qualified teacher as measured by NCLB was full state certification or licensure. States can implement any one of three strategies for choosing their standardized test: 1) generic tests not specifically designed to meet the needs of any one particular state, 2) generic tests with some slight modifications to meet applicable to general teaching guidelines or 3) custom made tests designed specifically to meet the needs of a given state. A report of the 2007 test requirements of the 50 states, the District of Columbia, and four U.S. territories aggregated state testing requirements (Baber, 2008). Results of this study are reported below. State tests included tests of basic skills, subject matter, and pedagogical skills. Four states were reported to have no examination required for state certification.

Test of Basic Skills

Forty-two of the states and territories require the test of basic skills at some point for teacher certification. The timing of the test requirement in the certification process varies from state to state as some states use the test for entry or graduation from a teacher education program, while others use the test for initial certification. The creator of the basic skills test also varies between states. Twenty-three states use the *Praxis* I Basic Skills test developed by the Educational Testing Service (ETS); nine states use the National Evaluation System (NES) Basic Skills Assessment; four states use their own state designed test; two states use "other types" of assessment; and five states use a combination of the assessments.

Subject Matter Tests

In order to meet content proficiency requirements, 44 states require an examination on content knowledge for teacher certification. Thirty-one states require the *Praxis* II Subject Matter Assessment; nine states require a NES assessment; two states offer state designed assessments; one state uses another state's assessment; and one state offers multiple assessment options.

Pedagogical Skills Assessment

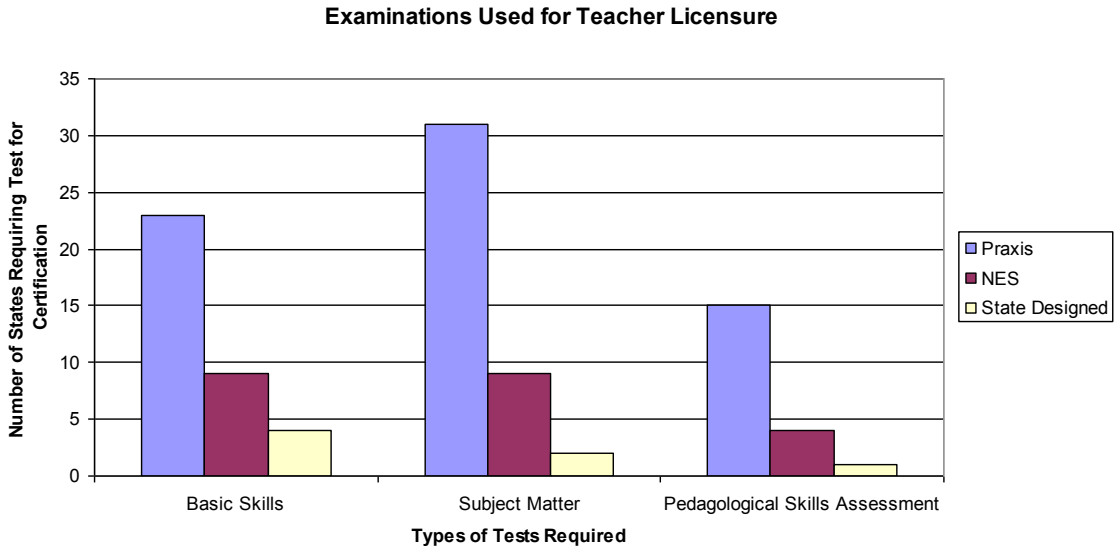
Only 21 states require an assessment of pedagogical skills for teacher certification. Fifteen states require the *Praxis* II Principle of Learning and Teaching (PLT) at one or more levels; four states require the NES pedagogical assessment; one state has a state designed pedagogical assessment and one state requires some other kind of assessment.

The *Praxis* Test series consists of the examinations employed most frequently for state certification. Frequencies of *Praxis* use compared to other identified examinations for certification requirements are shown in Figure 1. For this reason, this investigation will explore the *Praxis* as a valid measure of teacher qualification.

The *Praxis* Test

The *Praxis* series consists of three tests, of which states may chose to use all, none, or any combination of the three to grant state teacher licensure. Only two states, Arkansas and Utah, employ all three *Praxis* tests.

Figure 1. Frequency of Test Usage by State.



Praxis I

The *Praxis I* Pre-Professional Skills Test (PPST) is a measure used by colleges and universities as a screen for interested parties into the teacher education program. The *Praxis I* consists of three tests: a reading

test to measure one's ability to understand, analyze, and evaluate written messages; a mathematics test to measure mathematical skills and concepts an educated adult might need; and a writing test to assess one's ability to use grammar and language appropriately and to communicate effectively in writing. The test is a multiple-choice test with an essay section included in the writing test.

Praxis II

The *Praxis II* is a measure employed by 32 states as part of the licensing and certification process. The *Praxis II* consists of three groups of tests: Subjects Assessments, Principals of Learning and Teaching (PLT) Tests, and Teaching Foundations Test. Subject Assessments measure general and subject-specific teaching skills and knowledge. The PLT Tests measure general pedagogical knowledge at four different levels: Early Childhood, K-6, 5-9, and 7-12. Each applicant takes the test appropriate for the grade level in which he or she is seeking certification. The Teaching Foundations Tests measures pedagogy in five areas: multi-subject (elementary), English, language arts, mathematics, science and social science. Like the PLT Tests, applicants are expected to take the exam appropriate for their expected license. The *Praxis II* tests are a combination of multiple-choice questions, essay or constructed response questions, or a combination of both question types.

Praxis III

The *Praxis III* Teacher Performance Assessments is a measure used to assess beginning teachers in the classroom setting. This assessment contains 19 assessment criteria in four domains. The domains were selected as representations for the teaching and learning experiences of a beginning teacher. The domains are: planning to teach (concentration placed on an examinee's ability to organize content knowledge for student learning), the classroom environment (analysis of an examinee's ability to create an environment that facilitates student learning), instruction (examination of an examinee's ability to teach for student learning) and professional responsibilities (assessment of an examinee's capacity of an examinee's teacher professionalism).

The evaluation provided by the *Praxis III* exam is much more personal and time consuming than the *Praxis I* or the *Praxis II* exams. To assess evidence of a beginning teachers teaching practice, evaluators use: direct observation, structured interviews, and review documentation prepared by the teacher.

The implementation of using the *Praxis III* assessment also requires more preparation. Assessors are provided in-depth training and tools for evaluation; each teacher applicant is given orientation materials to prepare them in advance for what will be on the exam; and stakeholders are given administrative guidelines for program implementation and management over time.

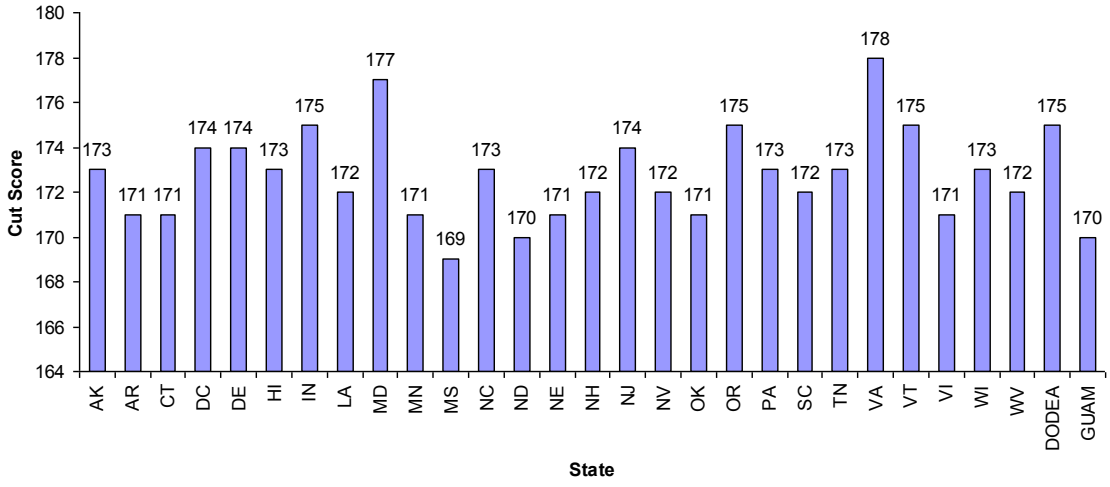
State Requirements

Despite the national push requiring qualified teachers in the classrooms, state agencies still have the autonomy to select their standardized tests, as we have seen above, as well as to set their own proficiency levels. (McLaughlin and Chaddock, 1998; *Praxis Test Series*)

Basic Skills

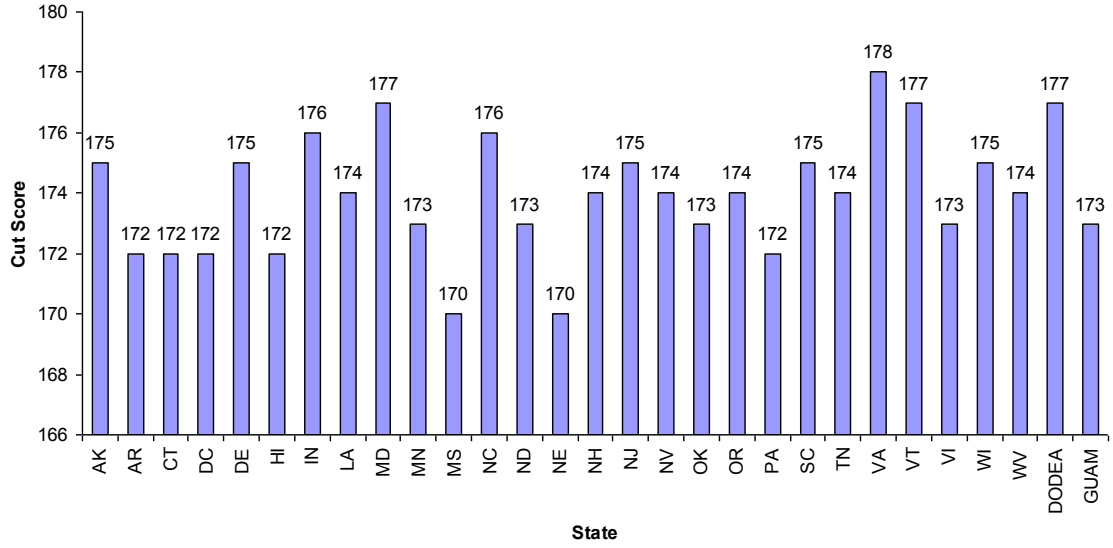
Since many states use the *Praxis* test series, it is easy to compare states proficiency cut scores using these exams. A comparison of states proficiency cut scores for the *Praxis I* Basic Skills tests for Mathematics, Reading and Writing can be seen in Figures 2, 3, and 4 respectfully. The scores on each test can range from 100 to 200 points.

Figure 2. *Praxis* I Basic Skills Cut Scores for Mathematics by State



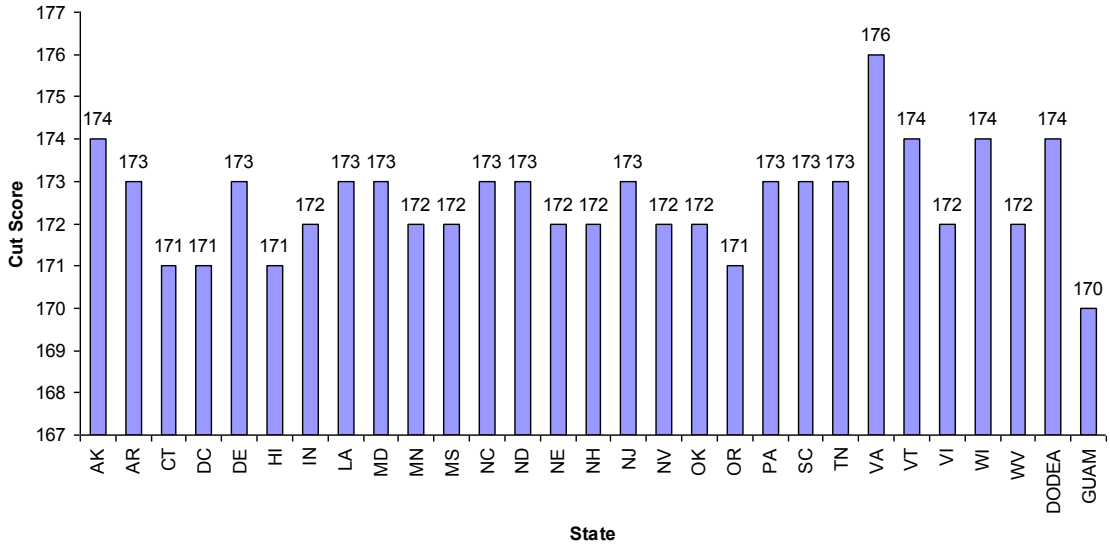
Praxis I Mathematics proficiency cut scores range from 169 in Mississippi to 178 in Virginia. The average proficiency cut score across the states and territories is 172.76.

Figure 3. *Praxis* I Basic Skills Cut Scores for Reading by State



Praxis I Reading proficiency cut scores range from 170 in Mississippi and Nebraska, to 178 in Vermont. The average proficiency cut score across the states and territories is 173.97.

Figure 4. *Praxis* I Basic Skills Cut Scores for Writing by State



Praxis I Writing proficiency cut scores range from 170 in Guam to 176 in Virginia. The average proficiency cut score across the states and territories is 172.55.

Content Assessment

While most states use the *Praxis I* Basic Skills test as a screener for applicants in to the teacher education program, it is not until seeking state licensure that applicants are asked to demonstrate their content area knowledge. Like the *Praxis* I test, states using *Praxis* II Subject Assessment tests are given the liberty of setting their own cut scores for each subject tested. A concern many stakeholders have is that teachers' knowledge is not adequately measured.

The first serious examination of teacher certification tests was a result of the 1975 federal challenge of South Carolina proficiency examinations (Popham, 1992). Over the past 25 years, most studies into teacher licensure exams employed the use of professionals to measure the quality of test items. Panelists were given the task of rating test items in regards to the amount of knowledge beginning teachers should possess. This inquiry was searching for evidence that test items were adequately measuring entry level competencies (Popham, 1992; Carlson, 1989). Through these investigations, several problems with the tests were identified.

The majority of examined tests showed lack of rigor. They consisted mainly of multiple choice items with no questions asked at the baccalaureate level (Mitchell and Barth, 1999; Harrell, 2009; Shanker, 1996). The test was designed to test teachers for minimal competencies one would need for their first year teaching. Teacher testing established a floor for the skills required by the test (Angrist and Guryan, 2005).

Let us consider the *Praxis* II exam for secondary mathematics. The test is designed to assess mathematical knowledge and competencies necessary for beginning teachers of secondary mathematics (*Praxis Test Series*). The exam consists of 50 multiple choice questions applicants are expected to finish in two hours. The content categories on the exam include: algebra and number theory, measurement, geometry, trigonometry, functions, calculus, data analysis and statistics, probability, matrix algebra, and discrete mathematics. The weights given to each content category can be seen in Table 1. In addition to content categories, five process categories (mathematical problem solving, mathematical reasoning and proof, mathematical connections, mathematical representations, and use of technology) were distributed across the content categories. Competencies for each content category and descriptions of the mathematical process categories can be found on the *Praxis* web page (www.ets/praxis).

Table 1. Content Assessed on the Praxis II Mathematics Content Knowledge Exam

Content Categories	Approximate Number of Questions	Approximate Percentage of Examination
Algebra and Number Theory	8	16%
Measurement	3	6%
Geometry	5	10%
Trigonometry	4	8%
Functions	8	16%
Calculus	6	12%
Data Analysis and Statistics	5-6	10-12%
Probability	2-3	4-6%
Matrix Algebra	4-5	8-10%
Discrete Mathematics	3-4	6-8%

Supporters of the *Praxis* II Content Assessment contend that this exam is sufficient for assessing whether or not applicants possess the beginning competencies any secondary mathematics teacher should hold. There are many scenarios depicting where a beginning mathematics teacher might land their first job. They could be one of a ten person mathematics department, like a big city might have. Or they could be the math department at a small, rural school. Either scenario, the competencies a beginning mathematics teacher may require range from basic math to Trigonometry. Will four questions on the *Praxis* II exam adequately measure if an applicant is ready to teach trigonometry*?* What if they missed all four questions pertaining to trigonometry on the test but their overall score was high enough to pass*?* Should teachers then take individualized competency tests for each subject?

The most basic problem with the teacher competency tests is that no set of classroom teacher competencies have been empirically validated for essential learning to take place (Hathaway, 1980). Teachers with minimal competency (as what is required by the *Praxis* II test) will not be able to get their students to local or state standards (Mitchell and Barth, 1999) because they too cannot meet them. A teacher cannot teach what they themselves do not know. Lack of sufficient content knowledge is a concern for many stakeholders.

Content on the *Praxis* II Mathematics content knowledge exam

The literature indicates that the *Praxis* content assessments do not adequately measure beginning teachers' knowledge. In response to this thought process, this researcher investigated the content of a popular text book, Prentice Hall Mathematics Algebra 2. After perusing through the table of contents and comparing the book's content to that listed as covered by the *Praxis* II secondary mathematics exam, I found that the contents of the text book would overall fall into the content categories on the

exam. Several concepts in the Algebra 2 book that I could not place into the *Praxis* content categories were: solve problems using properties of ellipse or hyperbola, application of the binomial distribution, demonstrate the understanding of the Fundamental Theorem of Algebra, and understanding and application of rational functions. Finding that most of the content was said to be covered by the test, I inquired as to how representative the questions (remember, there are only 50 questions) were of the material. To investigate this, I acquired a copy of a sample test for the *Praxis* II secondary mathematics exam from the *Praxis* web site (www.ets.org/praxis).

The sample test contained only 25 questions and was supposed to be representative of the test. The sample test was broken down and labeled into sections corresponding to the content categories. The least representative category was Measurement with 33% representation and the most represented category was Trigonometry with 75% represented. Table 2 shows the number of questions on the sample test per content category.

Table 2. *Content of Praxis II Sample Test with Percent Representation of Actual Exam*

Content Category	Number of Questions	Approximate Representation *	Percent
Algebra and Number Theory	5	62.5%	
Measurement	1	33.3%	
Geometry	2	40.0%	
Trigonometry	3	75.0%	
Functions	4	50.0%	
Calculus	3	50.0%	
Data Analysis and Statistics	2	36.5%	
Probability	1	41.5%	
Matrix Algebra	2	45.0%	
Discrete Mathematics	2	58.4%	

**Note: If a content category offered a range for the possible number of questions, the approximate percent representation was found by averaging the percents.*

Taking into account the sample test is half the length of the actual test, I still had some concerns after examining the content of the questions with respect to what the exam was actually supposed to measure and the content included in the Prentice Hall Mathematics Algebra 2 text book. If we consider the Discrete Mathematics section, the test specifications tell us the exam will cover three or four questions in this domain. While the sample test was over 50% representative, it only addressed two of the six topics the section is said to cover and the one discrete mathematical topic in the Algebra 2 text book was not one addressed.

There were additional concerns I had with the sample test; especially if the sample was truly representative of the actual test. First, the descriptions of the mathematical process categories use

vocabulary representative of upper cognitive level functioning described by Blooms Taxonomy. They used words such as “develop”, “apply”, and “demonstrate”. The sample test, however, used prompts of lower order cognitive domains requiring the applicant to define, or recall information rather than to apply it.

Secondly, the test specifications require an applicant to be able to graph equations (Algebra and Number Theory: Solve and graph systems of equations and inequalities, including those involving absolute value), yet applicants are allowed to use graphing calculators on the exam. This indicated that knowledge of calculator use trumped actual ability to graph equations. The solutions provided for the sample test even encourage applicants to use a graphing calculator [“One way to determine for which of the three given values of *k* the equation will have four distinct real roots is to graph the equations using your graphing calculator”].

Finally, my last concern pertains to the only given representative measurement question. The writers purport their question measures the measurement content category, but in reality, the question does not meet the measurement specifications and rather is an algebra question. The measurement question and measurement objectives can be seen together for comparison in Appendix A. The other questions did appear to measure content addressed by their categorical description; however, all content the test was said to measure was not represented.

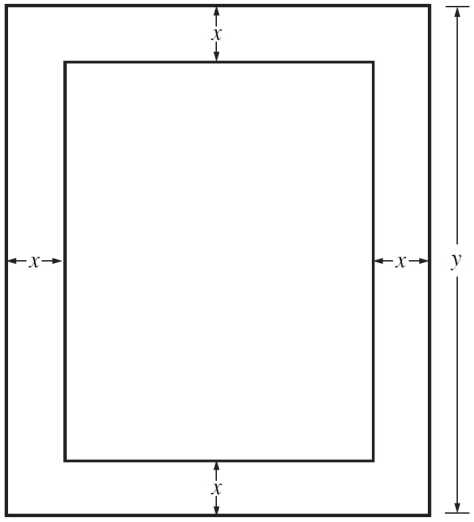
Conclusion

The goal of a teacher is to facilitate the student understanding of information. Teachers must be prepared to teach in a way that will allow students to make meaningful connections to the content knowledge and subject (Ball, 1990; Frykholm and Glasson, 2005). If a teacher does not possess the rich content knowledge required to do such, they will not be able to teach it.

Every state has the freedom to establish their own curriculum; underscore the important concepts teachers are delegated to teach. Yet 39 states are using the same off-the-shelf qualification exam aimed at assessing a beginning teacher’s competencies. While states establish their own proficiency cut scores, teachers who will teach from basic algebra through trigonometry are given the same low-level test. A test that purports to measure a grand spectrum of objectives through higher order cognitive domains actuality covers a smaller portion of objectives at more basic levels.

If schools are to have highly qualified teachers, as mandated by NCLB, states must demand evidence of more content knowledge from the teacher applicants. In order to accomplish this, states need to adopt more rigorous tests that are aligned with their individual state standards. Unfortunately, development such tests is timely and costly. Until states can afford the time and money needed for such tests, off-the-shelf tests are going to have to suffice.

Appendix A



The inside of a rectangular picture frame measures 36 inches long and 24 inches wide. The width of the frame is *x* inches, as shown in the figure above. When hung, the frame and its contents cover 1,408 square inches of wall space. What is the length, *y*, of the frame in inches?

(A) 44

(B) 40

(C) 38

(D) 44

Description of Content Category

Measurement

- Make decisions about units and scales that are appropriate for problem situations involving measurement; use unit analysis
- Analyze precision, accuracy, and approximate error in measurement situations
- Apply informal concepts of successive approximation, upper and lower bounds, and limit in measurement situations

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PROFESSIONAL DEVELOPMENT DAY: A TOWN/GOWN COLLABORATION THAT WORKED

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ABSTRACT

A recently formed state commission, UNC Tomorrow, asked citizens of North Carolina for suggestions to improve the state university system. Listed as a priority was the improvement of beneficial involvement of universities with their communities and increased accessibility of university faculty to K-12 school. In response to this citizen recommendation, a low cost, targeted event was planned for visual arts teachers which would benefit 35,000 school children. This paper describes the process needed to create a partnership between the university and the school districts to make an event like this successful.

Introduction

As coordinator of Undergraduate Art Education I supervise student interns when they go to area schools to student teach. UNC Pembroke interns in art education have two placements at different levels, either elementary, middle or high school. Averaging 5 or more interns a year, and making 6 scheduled observations per intern means that I have sustained contact with many art teachers in the different counties surrounding the university. In the main, these teachers are dedicated and diligent, but many are overworked and under-supported for whatever reasons by their local education agencies (LEAs) and the principals of their schools. While professional development is required to maintain their license, and to gain the National Board Teaching Standards certification, opportunities for professional development in the area of visual arts are few, dependent on attendance at the professional organization's state conference, the North Carolina Art Education Association. North Carolina is a wide state. The location of the conference alternates between the ocean coast on the east, and the mountains on the west, with a site somewhere in the center chosen every third year. The far travel distance makes regular attendance at conferences difficult to achieve. Over the years, as teachers have graciously accepted my college students as interns and I have observed the teachers and their students, I have recognized symptoms of art teacher burnout. In the case of an art teacher this means assigning less ambitious art projects in their classes; less use of paint and more use of the easier to clean up colored pencils and markers; less creation of 3-dimensional projects; and less projects needing to be completed over time.

The internship experience is an important one. Consistently, college students say on exit evaluations that the internship is what they consider to be the most important experience of their college career. This is where they put their knowledge of visual art content and teaching techniques together in a real

world experience, in a real school with real students responding to them. Although visual arts interns can learn what not to do by observing and working with a burned-out teacher, having clinical teachers in the field model best practices and encourage the college students as they create their units and assessment strategies is much preferred.

Professional development in the visual arts is essential for visual arts teachers just as it is in any discipline. Visual Arts professional development enables visual arts teachers to keep up with changes in their field, be they new techniques, new skills, new technologies, new emerging art forms, artists, or ideas. Professional development should give the visual art teacher a chance to learn something new that can be turned into a lesson plan and taught to their students in the schools. Additionally my hope was to provide professional development that would also give visual arts teachers a stimulating chance to create. My hopes were to provide an environment to excite and energize these teachers and revitalize their creative juices. I also wanted to thank the teachers who work so hard with me and the interns, so that they understand how much the university and the profession is indebted to them for the service they provide.

With the internship being such an important part of a future teacher's college experience, being a cooperating teacher is not an easy job. These teachers do not stay in a back room and drink coffee or do their own art leaving the college student to sink or swim in the classroom. Clinical teachers working with me observe their interns, check their lesson plans, and conference with me regularly. They work collaboratively with the interns who must create a portfolio documenting their accomplishments, backed up by assessment, in the class. My interns also write weekly reflections on their internships, and if I need to intervene, I don't hesitate to do so, either by phone or by a visit.

Methodology

The year was 2009, one of the worst in terms of the economy since the Great Depression. Fortunately negotiations for the Professional Development Day were begun before the school districts or the university were aware of how bad the crisis was. In August I approached the new chairperson of the Art Department with my idea for a professional development day for area art teachers hosted by the Art Department faculty. We decided that since the workshops would be on campus and on a week day rather than on a weekend when the building was closed and teachers might have other commitments, the faculty would be asked to volunteer their services. Their volunteerism could be used in their yearly evaluation under the category of "service" to the university and the community. Friday was determined to be the best day of the week because on that day instruction in the department was light.

While meeting with the department chairperson, I also sent out feelers to area LEAs to see if there was teacher and school board interest in having teachers come to UNC Pembroke campus during the week for faculty development. Realizing that teachers would have to be released from their classes, I knew that I would need the help of the school districts. For this reason, I looked for LEAs where the art teachers were organized under a coordinator who could speak to the teachers and be the liaison between me, as the representative of the university, and their school boards. Of the three counties

identified; Moore, Columbus, and Robeson, only two were able to respond. Appointments were scheduled with the coordinators who expressed interest, and the date of Friday, February 13th was set as the tentative date.

The planning of the Professional Development Day was announced at the first Department meeting of the academic year. From the onset it was labeled a department sponsored event so that faculty felt ownership. In the recent past the department had gone through significant changes. Until five years prior to 2009 the department's faculty had not changed for more than a decade, with some faculty there since the 1970s. With retirements, new positions were created and new faculty had been hired. The event could serve as an introduction of the new staff to area art teachers. After the meeting, I quickly emailed faculty asking them to volunteer to lead a workshop. To their credit, most full-time faculty agreed to volunteer their time to teach either a 2 ½ studio workshop or a 50 minute art history lecture workshop on the February 14th date. We were ready for the next step - getting permission from administrators and possible funding for the project.

The department chair contacted the Dean of Arts and Science, the division that housed the Art Department, for support. I, as Coordinator of the Undergraduate Art Education Program, contacted the Dean of the School of Education. To sell the idea of the Professional Development Day, we mentioned that this was outreach to the community, which also could be used for recruitment. It was hoped that the art teachers would encourage their students to enroll in UNC Pembroke, but also continue their own education and enroll in our Master of Art program. Complicating the matter, both deans were recent hires and unsure of the workings of the university. Although both deans tentatively approved of the project, they did not approve of it to the point of committing funding. For this, the Dean of Arts and Science recommended that the Art Department approach the Provost. Once guaranteed approval by the deans and the representatives of the LEAs, the chair felt comfortable approaching the Provost, who immediately asked to see an itemized budget before making a commitment. I needed to get faculty in the summer committed to offering their workshop in February. They needed to decide what they would teach and estimate the supplies they would need! Before faculty could make an estimate, they needed to know the workshop enrollment numbers. Not knowing how committed the teachers would be to attend the event, I chose the arbitrary number of 10 students per workshop. This is the number of students taught in an advanced Art Department studio course, and hoped that the number could be modified depending on how many teachers participated.

Faculty were slow to decide what they wanted to teach, and slow to hand in their supply list. Newer faculty were nervous about teaching professional adults in a workshop setting, and changed their ideas frequently. Three of the workshop teachers declared that they would need no supplies at all. The supply lists trickled in, forcing me to make decisions as to budget and supplies needed by faculty who did not respond. I estimated the amount of $150 per studio workshop, figuring that those who estimated they needed more funds than this would be offset by those who estimated they needed less. The tentative budget in the form of a supply list for the workshops was completed. On further contact with the Arts Coordinator of Robeson County it was decided that her school board could cover the cost

of hiring substitute teachers for the day to replace the teachers in the classrooms. This was a huge show of support from the County since a substitute would cost $85 to $90 for each of the forty teachers in her LEA. The Provost committed the small amount of funding for the eleven workshops, and the deans, who I asked to make welcoming addresses to the teachers on the morning of the event, were able to find funds to pay for lunch and a continental breakfast for the teachers, with the School of Education being able to pay for this with funds set aside for recruitment.

When the economy spiraled down, I feared for the health of the program. Thankfully, the department's request had come early in the school year and funds from the Provost had been transferred before the crisis hit and the state asked the university to cut expenditures. The economic crisis was slow to hit the LEAs also. Their budget, including the money set aside for the hiring of substitute teachers by Robeson County, was also not affected.

Art Department faculty decided what time of day they wanted their workshops to be and the day was planned beginning with a 7am breakfast and welcome orientation, morning studio workshops, followed by art history lectures, then lunch and afternoon studio workshops with the day ending at 4:30pm. Some teachers lived and worked far from UNC Pembroke. Some needed an hour and a half to two hours driving time to reach campus, so the 4:30 finish allowed them to return home at a reasonable hour. However, to earn one continuing education credit (CEU) needed to keep their license, the event needed to be ten hours long. Because of this, it was decided that those teaching art history lectures would assign reading that teachers would do on their own, after the event.

Announcements of the Professional Development Day and registration information were emailed out to the various teachers beginning in late October. All teachers have a school email address, but unfortunately some schools block outside contact. This caused some confusion that had to be resolved by the Arts Coordinators. On the registration form I asked that teachers write their contact information which I dutifully recorded so that I could get in touch with them if necessary. Teachers were asked to select first choice and second choice workshops and teachers were made to know that registration was on a first come, first serve basis. The two Arts Coordinators were also invited to attend workshops and both accepted, even though one was a theatre arts and not a visual arts specialist. The commitment of the Arts Coordinators of the counties was extremely important in the success of teacher registration. Their involvement and their ownership of the program energized the teachers in their LEA to take the development day seriously. The Arts Coordinator of Columbus county tried to come up with funds for substitute teachers also, and whenever possible, stressed to principals how important the day's events would be, encouraging them to provide the coverage and support. Having coverage provided by the LEAs in the form of substitute teachers made the visual art teachers realize that their school boards recognized the Professional Development Day as an important event that they needed to attend. As registration material filtered in, the Arts Coordinators worked with me in discovering which teachers had not yet registered. Some of these teachers still could not receive the announcement and registration email. Others stated that they did not want to participate and attend. Some reasons given for this were: the high cost of gasoline to travel to and from campus; or the unwillingness of a teacher to

disrupt his or her set teaching schedule. Some teachers did not want to have a substitute teacher in their classroom because items and art supplies either got misplaced or lost; others were hesitant to drive the great distance to campus; and etc. But as momentum built from the majority of teachers signing up for the event, remarkably *all* teachers in both LEAs enrolled, either coerced or cajoled by their peers or Arts Coordinators. (With the high cost of gas being a possible factor for those who had to drive far distances to reach the event, one coordinator set up a car pool for teachers with himself as the driver!)

As it became apparent that the economy, and especially the state economy, was in more and more trouble, the Art Department chairperson and I encouraged the workshop leaders to purchase their supplies early, before the fall semester ended. As I expected those who declared that they did not need supplies or a budget decided at the last minute that they actually did need them. Working with the department's administrative assistant, the purchase orders were completed and processed, so that supplies would be delivered by the February workshop date.

As the day of the Faculty Development Day neared, confusion arose over the lunch and breakfast and it seemed that the new deans would renege their funding at the last minute. Since neither had the available funds to pay for both meals, the fact that each division was providing one meal gave impetus for the other providing the second. The breakfast was ordered to be delivered by campus catering. Teachers were to go to the university's cafeteria for their lunch. No policy was in place for large groups eating at the cafeteria and one had to be devised. Because of this, teachers received a packet on registration containing a lunch ticket and a parking pass.

Faculty were continuously informed of registration names and contact information of their students. Because of this, those who wanted to could contact the workshop attendees before the actual day. This was helpful if the teachers needed to be informed of extra supplies that might be needed for the workshop. This was also important for the ceramics workshop, because ceramic pieces needed to dry and then be fired in the university's kiln if a teacher did not have a kiln of their own to use – a process that would not be completed for weeks after the workshop.

The Event

Finally February 13th arrived. I asked one arts coordinator to help with registration while the other acted as chauffeur. At 6 am the caterers began setting up, and at 7 am the teachers started to arrive. On receiving their packets, teachers signed release forms so that they could be photographed to use for university promotional information and the university photographers documented all workshops.

Some snafus arose on the day of the Professional Development Day events. One workshop leader misplaced her supplies and I needed to help her look for them. Two workshop leaders decided to combine forces and work together offering both morning and afternoon workshop. When students

complained about the morning workshop, I had to approach the faculty and have them change their approach. For every workshop I handed out evaluation forms, which gave me immediate feedback as to the success of the event. If there were problems with the morning sessions I was able to help correct them for the afternoon.

The vast majority of the evaluations were positive with the teachers rating most of the workshops as being excellent and relevant to what they will teach their own students in the area schools. Only two of the eleven workshops received less than stellar evaluations, with complaints against just one. All teachers showed up for the event, with only one needing to leave early because of a sick child. However, I noticed that two recent graduates of UNC Pembroke cut class! When asked about their failure to show up for a the workshops, they said that they had forgot the time, and stayed in the cafeteria too late. Curiously, this was typical of their behavior as undergraduates, making me realize that they still had a ways to go to becoming the mature professional they needed to be.

Conclusion

Faculty Development Day was a successful event for the university and for the two LEAs involved. For a total of less than $1500 enough supplies were purchased to cover the workshops. With the additional amount of $3000 coming from Robeson County to fund substitute teachers, and the added cost of $300 from the School of Education for breakfast and $200 from the College of Arts and Science for lunch, the total expenditure was approximately $5000. The university was united in providing needed outreach to community members. Thirty-nine teachers from Robeson County and nine teachers from Columbus County, plus the two Arts Coordinators were provided with a chance to create stained glass, drawings and digital art images, learn slump molding, sculpture, printing or water color techniques. They were able to learn about the art history of Native Americans, 14th Century manuscripts and the Seagrove Potters of our state. Feedback from the day of workshops was very positive and appreciative. Most of the teachers hoped to repeat the experience, while the enthusiastic Arts Coordinators hoped that we could repeat the event on a yearly basis.

With the downturn in the economy this was not to be. In the 2009-2010 school year there is little money in the LEAs for art teacher supplies let alone money to pay for substitute teachers. In addition, the university budget has been severely cut. But the benefits from the Visual Arts Teachers Professional Development Day linger on and planning and organizing the event has helped me in my relationship with the visual art teachers who attended. I have been able to place interns with teachers that I have not been able to place interns with before. The teachers are more eager to have interns work with them and are more eager to do the necessary work entailed in having an intern. Also, three of my five interns were hired in Robeson County upon graduation last year, while two of them were hired in Columbus County. Relations between art department faculty and community schools has been strengthened with faculty being asked to lead district workshops for teachers, and give workshops in individual schools, and the Arts Coordinators have both worked with me to write grants to help the visual arts and arts

education of our communities. While I do not yet have actual figures for this academic year, it appears that enrollment of students from area schools is up, especially in Art Department classes.

The secret to a successful event like this is shared ownership. While I made sure that the ball was kept rolling, and that the planning for the event proceeded at a steady pace, I involved the Chairperson of the department, the two deans, and the two arts coordinators of the counties. These in turn involved the university Provost, the faculty, the boards of education, and the teachers of the area. The deans gave welcoming speeches and personnel handed out recruitment information. Teachers were introduced, or reintroduced to a campus that has grown so much in the last ten years that it is almost unrecognizable to some, making it a little less intimidating institution. Faculty had community involvement to write up on their yearly evaluation reports, even though there was no money in the budget for raises for this new year. Furthermore, for so little expenditure area teachers, who are also community member, came closer to understand how important they are to the health of our university, our Art Ed program and our Art Department. This was a true collaboration that had excellent results.

References are available upon request.

THE PITHY ESSENCE OF AN ISSUE: TESTING THE SUMMARIZATION SKILLS OF TEXTERS

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ABSTRACT

A recent newspaper article examining the networking habits of people in their teens and twenties contained a comment that young people today are good at "getting to the pithy essence of an issue" (Zaslow, 2009). We propose to test this claim by examining the effect of short messaging services (SMS), or texting, on the summarization skills of college students. In the area of computer mediated communication, there has been some work done on instant messaging (IM) (Quan-Haase, 2008), but very little on texting, which is quickly replacing IM as the messaging system of choice among college students. Text messaging is growing around the globe with 740 billion messages being sent in the first half of 2009 alone (CTIA, 2009). Among college students a recent survey found 94% send and receive text messages, with 62% texting during class (Ransford, 2009). Previous work on IM, texting's technological cousin, suggests that students primarily use the technology for social purposes (Flanagin & Metzger, 2001) or socially useful purposes (Huang & Yen, 2003). This would suggest more casual communication and perhaps less need to reduce and summarize more complex ideas and concepts. Additionally, a study examining text messaging among children found that higher users of text messaging scored lower on verbal and verbal reasoning scores (Plester, Wood, & Bell, 2008). The use of texting technology provides students with a tool which generally limits users to 160 characters, encouraging users to be more efficient in the elucidation of key ideas and meaning. While this economy saves key strokes and shortens the length of messages, the question remains: does texting develop student's ability to be succinct? We propose that the amount of texting use by students will, contrary to the original idea quoted in the Wall Street Journal, not improve their summarization skills.

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THE GENTLE ART OF MENTORING: FACILITATING SUCCESS IN THE ACADEMIC WORLD

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ABSTRACT

Universities across the United States produce graduates who are well trained as scholars in their respective disciplines. However, most of these graduate students complete their degree programs and embark upon academic careers with no training in how to be a productive and successful college faculty member. While there is no way to guarantee a successful academic career, mentoring programs can provide needed support as one negotiates the challenges of balancing successfully the responsibilities of teaching, research/creative work, outreach and service, and collegiality (not to mention the daunting reality of university politics and protocol).

This paper begins with a review of the literature on *best practice* in mentoring faculty across various career stages. While research acknowledges that informal mentoring relationships can be productive, the consensus is that a more formalized mentoring process is necessary to ensure that all junior faculty have equitable access to mentoring (Harnish & Wild, 1994; Leslie, Lingard, & Whyte, 2005; Mullen & Hutinger, 2008; Savage, Karp, & Logue, 2004). Despite pitfalls, such as concerns about mentoring as a type of "formalized paternalism" (Selby & Calhoun, 1998), the literature generally supports the need for structured mentoring for our future colleagues while they are still students as well as formalized mentoring for new faculty. Examples of successful programs at universities across the country will be described. Mentored programs currently in place range from very informal and unofficial activities, to carefully organized programs. It includes university-sponsored events and formal evaluation. The author will provide results of a narrative inquiry, documenting her own journey as a department head as she worked with her faculty to develop a mentoring process for new faculty. Challenges and pitfalls will be discussed along with success stories. The paper concludes with a discussion of the implications of mentoring for both college faculty and for our students.

A CASE STUDY IN AUTHENTIC LEARNING: FIELD EXPERIENCE IN EDUCATIONAL LEADERSHIP DOCTORAL STUDIES

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ABSTRACT

This paper discusses the learning emerging from a field experience in a newly developed, Ed.D. program for current PK-12 school leaders at a large, urban research university. This case study presents an authentic learning field experience utilizing situated cognition (Brown, Collins, & Duguid, 1989) devised in accord with Dewey's (1916/2004) concept of experience. Until the recent establishment of the Ed.D. program, the university at which this field experience was developed offered only a Ph.D. as a terminal degree in education. School of Education administrators and faculty, aware of the cogency of the critique of the Ph.D. as an appropriate qualification for educational practitioners, sought and gained affiliation with the Carnegie Project on the Education Doctorate (CPED), and designed an Ed.D. program to incorporate the innovative approach fostered by CPED. The field experience discussed in this paper aligns with the CPED concept of a "laboratory of practice," where the laboratory consists of the schools in a small rural school district. This field experience engaged the Ed.D. students with the moderation of focus groups of school district staff members in conjunction with an ongoing professional development project. The Ed.D. students conducted focus groups on the concept of learning-centered leadership (Goldring, Porter, Murphy, Elliott, & Cravens, 2009). Learning-centered leadership is a concept embedded into the final stages of the coursework of the Ed.D. The process of constructing the "laboratory of practice," and the learning outcomes from the field experience for the Ed.D. participants and faculty are described. It is proposed that the learning arising from this field experience will impact strongly on the Ed.D. participants' practice in a subsequent field experience, and contribute towards highly competent performance on the "capstone experience" for this Ed.D. cohort.

Introduction

Herrington and Herrington (2006) followed an acknowledgment that the concept of authentic learning was not new, with an assertion that "its practice in higher education is arbitrary and undefined" (p. 10). The challenge for those teaching in universities, they suggested, is "to align university teaching and learning more substantially with the way learning is achieved in real-life settings" (p. 3) by taking into account more authentic approaches—such as the situated cognition approach championed by Brown, Collins and Duguid (1989) and Collins, Brown and Newman (1989). The word "situated" in the work of Brown and his co-authors referred to the evidence that they assembled to show that "just plain folks" (or JPF, in the Brown et al. preferred acronym) learned in ways that were quite distinct from the ways in

which students were asked to learn: JPF, they contended, leaned heavily on the meaning conveyed by the circumstances and the context in which their learning was immersed. In advancing the idea of a cognitive apprenticeship as a model for learning, Brown et al. found fault with teaching that assumed "that knowledge is individual and self-structured, that schools are neutral with respect to what is learned, that concepts are abstract, relatively fixed, and unaffected by the activity through which they are acquired and used" (p. 37)—in short, that "JPF behavior should be discouraged" (p. 37).

Along the same lines, for Barab, Squire and Dueber (2000), learning occurring exclusively in the university context was seen as fostering a gap between school learning and real-world application because the separation of learning from authentic use creates a content-culture incongruity in which students are learning content implicitly framed in the culture of schools, but whose use and value is explicitly attributed to authentic communities of practice that are not directly in evidence. (p. 38)

However, Barab et al. indicated, authenticity is not easily established, since authenticity in learning resides "not in the learner, the task, or the environment, but in the dynamic interactions among these various components…authenticity is manifest in the flow itself, and is not an objective feature of any one component in isolation" (p. 38).

Dewey (1916/2004) conceptualized the nature of experience in education as consisting of both an active and a passive element—the active element Dewey described as associated with trying, and the passive with undergoing. Dewey regarded the interplay of these dual elements as constitutive of experience. From his perspective, "when we experience something we act upon it, we do something with it; then we suffer or undergo the consequences. We do something to the thing and then it does something to us in return" (p. 133).

The intention to lessen the culture-content incongruity by invoking learning in an authentic setting, and engage the reciprocal process underlying experience crystallized into the field experience that is the focus of this paper. Participants in a new Ed.D. program in the School of Education at a large research university were invited to moderate focus groups on the topic of the learning-centered leadership of the principal with volunteer in a nearby small rural school district, and thereby to contribute to the data-collection aspect of an ongoing professional development project in a small rural school district. To enhance the aspect of authenticity, the field experience was specifically designed to emphasize the dynamic interaction among the program participants, a task (conducting a focus group), and the learning environment (a small rural school district). Since only one of the 20 participants in the Ed.D. cohort had prior experience of conducting a focus group, appropriate input was provided before the participants learned by experience as they tried to apply their newly acquired knowledge. The focus group participants, in turn, acted back on them (in this case, the action back took the form of the school district participants reactions to the focus group prompts).

This field experience was devised against the backdrop of recent endeavors to reform doctoral education for practitioners (for example, Shulman, Golde, Bueschel, & Garabedian, 2006). These reform

endeavors have re-focused higher education on the imperative of educating scholars who function adeptly in the real world of schools—conceptualized as laboratories of practice (Shulman et al., 2006).

The Purposes of the Field Experience

Lessen Content-culture Incongruity

There were three purposes served by the field experience that is the focus of this paper. First, the field experience was intended to lessen what Barab et al. (2000) labeled as the "content-culture incongruity" (p. 38). This incongruity had the potential to cloud the Ed.D. participants' understanding of what the core components of learning-centered leadership (Goldring, Porter, Murphy, Elliott, & Cravens, 2009) "looked like" at the grass-roots level in a context that was different from the one in which they exercised their leadership.

In brief, learning-centered leadership was characterized by Porter, Goldring, Murphy, Elliott, & Cravens (2006) as emanating from the thirty-six intersections of six core components of effective school performance (high standards for student learning, rigorous curriculum, quality instruction, culture of learning and professional behavior, connections to external communities, and performance accountability) and six key processes of leadership (planning, implementing, supporting, advocating, communicating, and monitoring). The core components and key processes were derived from an exhaustive reading of the literature in the field (Porter et al., 2006), and incorporated into a survey: the Vanderbilt Assessment of Leadership in Education (VAL-ED; Porter, Murphy, Goldring, & Elliott, 2008a). VAL-ED has shown itself to be a useful research tool (for example, Reardon, in press; Smith, 2009).

Authentic Learning

Second, by ensuring the appropriate confluence of the three components identified by Barab et al. (2000)—the learner, the task, and the environment—the intention was to provide an authentic experience of a how learning-centered leadership played out in an educational environment very different from the one with which the Ed.D. cohort participants were familiar. The participants' own school district covers a very extensive area—largely a commuter community—to the south of a major city. The participants' district has a large student population, and enjoys an enviable reputation for the excellence of its schools. This reputation has been maintained and enhanced by the participants in this cohort, all of whom provide leadership in a variety of roles in the district.

By contrast, the neighboring small rural school district in which the professional development project to which the Ed.D. participants contributed was being conducted consisted of a total of four schools: two elementary schools, one middle school and one high school. Civic leaders in this rural area are conscious of the demand for improved amenities from an increasingly discerning and growing population (a reticulated water supply and sewerage system had just been implemented at the time of this endeavor), but the area remains unmistakably rural. The stark difference between the two real-world settings was expected to shed new light on the learning experienced by the Ed.D. participants—regarding both

learning-centered leadership and the processes involved with the unfamiliar task of conducting focus groups.

Laboratory of Practice

Third, the small rural school district in which the evaluation project was being conducted was envisaged as a laboratory of practice, as conceptualized by the Carnegie Project on the Education Doctorate (CPED, Carnegie Foundation for the Advancement of Teaching, n.d.). Dewey (1916/2004) associated the "problem of instruction" with "finding material which will engage a person in specific activities having an aim or purpose…and which deal with things not as gymnastic appliances but as conditions for the attainment of ends" (p. 127). This "problem of instruction" has long been as relevant to the professor teaching graduate students as it has been to the pre-kindergarten through grade 12 teacher. Teaching practitioners in a learning environment that precludes practice militates against their attainment of the ends of the teaching. In this vein, Levine (2005) trenchantly condemned the majority of educational leadership programs as ranging from "inadequate to appalling, even at some of the country's leading universities" (p. 23). Part of Levine's critique had to do with low admission standards and low expectations, but Levine also took aim at irrelevant theory and outdated examples—reminiscent of Dewey's "gymnastics." Levine's overall verdict was that the doctorate in educational leadership was resoundingly poor preparation for practice.

Shulman, Golde, Bueschel, and Garabedian (2006) concurred with Levine (2005) in declaring that "the problems of the education doctorate are chronic and crippling" (p. 25), and sourced the heart of the problem to the fact that "the purposes of preparing scholars and practitioners are confused; as a result, neither is done well" (p. 25). Without denying the thrust of the reform proposals of Shulman et al., Evans (2007) warned against a single-minded focus on practice-as-it-exists as a guide for the future, arguing, rather, that the focus should be on practice-as-it-might-become. Evans sought to re-direct a potential over-emphasis on the part of Shulman et al. on the codification of current exemplary practice as a guide. Evans argued for a "more complex form of practice as *praxis*" (p. 553), which could more appropriately act as a "driving force for the proposed curriculum reforms" (p. 553). Praxis arises from a dialogue between reflection and action (Friere, 1970). Harris (2009) invoked a focus on praxis in the context of semi-structured reflective writing as part of a response to the "criticism that graduate programs [in education] are not bridging the gap between scholarly theory and practice" (p. 5). Semi-structured reflective writing (in blogs and survey responses) constitutes the data for this case study.

By acknowledging the laboratory of practice as a key aspect in the creation of a "professional practice doctorate" (Shulman et al., 2006, p. 28), CPED (n.d.) tacitly embraced Dewey's (1916/2004) solution to the problem of instruction, and linked pedagogical activities to the attainment of pedagogical ends at the doctoral level. CPED simultaneously addressed Levine's (2005) declaration that the Ed.D. was disconnected with real-world practice. While Shulman et al. were aware that their "professional practice doctorate" title was unlikely to gain traction, their insistence that the Ed.D. be re-conceptualized was well-made, and attracted commitment from a number of universities, including the university in which

the case study is situated. With the support of this university president, the School of Education took the unprecedented step of offering a cohort-based Ed.D. in the Educational Leadership Program—a program that had to that stage only offered a Ph.D. Affiliation with CPED was requested and achieved, and the Ed.D. designed by the faculty in the Educational Leadership Program was built on the CPED foundation.

The field experience reported here is this second of three such experiences over the final two semesters of the Ed.D. program. These are intended to build participants' skills as they approach the capstone experience of the program.

Laboratory of Practice Logistics and Outcome

The laboratory of practice was a small rural school district (fewer than 3,000 students), adjacent to the much larger suburban school district (more than 57,000 students) in which all the members of the cohort group of Ed.D. participants were employed. All except one of the cohort members were acting in administrative capacities. The single non-administrator was acting in a teacher leadership role.

The Initial Experience

As remote preparation for entering the laboratory of practice, the Ed.D. participants were provided with an introduction to the conduct of focus groups. There were then given the task of creating two short video segments (two minutes each) of their moderation of a focus group of friends or colleagues on a topic of mutual interest. The Ed.D. participants were asked to select one short segment in which their moderation skills were evident, and another segment in which their moderation skills were less than exemplary. These segments were shared with the cohort group for critique.

The Ongoing Professional Development Research Project

The Ed.D. participants were introduced to an ongoing research project being conducted in the small rural school district as a school-university collaborative venture. The aim of the project was to use VAL-ED as both a measure of the principals' learning-centered leadership, and as a framework for professional development.

The Task

The Ed.D. participants, with the enthusiastic support of the Superintendent and School Board, were invited to collaborate in teams to conduct focus groups intended to enrich the survey data gathered from VAL-ED during the first year of the project. The written task was as follows:

> In your randomly assigned Evaluation Teams of five, appoint a Chair, and plan to moderate a 45-minute focus group with a group of staff in your designated school in a nearby school district on their perceptions of their principal's leadership with respect to the core components of learning-

centered leadership. This is a "live" exercise. These focus group sessions are a significant part of a professional development research project.

The focus groups will be conducted by pairs of moderators. Each school team will consist of two pairs of moderators. Each pair will moderate a focus group simultaneously in the one school, with the Chair splitting his/her time between the two focus groups. Each pair of moderators will arrange the conduct of the focus group so that each member of the pair spends approximately 20 minutes in each of the note-taking and moderation roles.

Upon completion of this Field Experience, the Chair will collaborate with both pairs of moderators in writing a synthesis of the Team's findings. The raw data of the notes taken by each pair during the focus group must be included in the Appendices of this synthesis. Record your individual reflections on this Field Experience in your personal course blog.

The Outcome

The learning emerging from this field experience is analyzed in depth in the context of the framework provided by Herrington and Oliver (2000) and Herrington and Herrington (2006). The Ed.D. participants devised their own focus group prompts to address the core components of learning-centered leadership specified by VAL-ED, and used these prompts (after critique and review) to moderate the focus groups. With the cooperation of the principals of the four schools, the focus groups were held on a teacher work day, in the hour separating a morning administrative meeting from an afternoon series of parent meetings. After the focus group meetings, the Chair of each team convened subsequent meetings to synthesize the findings from the two focus group pairings into a single report on that school. These reports were integrated into the ongoing professional development research project, and formed the basis of discussions between the principal investigator and the respective school principals.

The Ed.D. participants were required to reflect on this field experience in their personal course blogs. In addition, one week later, they were required to respond to a single survey question that invited them to share what they had learned about the value of focus groups from their field experience. The survey prompt was intentionally general in preference to the more direct approach of, for example, asking for a response to each of Herrington and Herrington's (2006) critical characteristics of authentic learning. The intention was to avoid effectively leading the participants in their responses—a pitfall that the participants had been encouraged to avoid in the moderation of their focus groups. Both the Ed.D. participants' blogs and survey responses contributed to the data for this case study.

Data Analysis

Critical Characteristics of Authentic Learning

Herrington and Herrington (2006) discussed, in a broader context, the importance of nine critical characteristics of authentic learning that Herrington and Oliver (2000) had earlier extracted from an extensive literature review in the context of instructional technology. Herrington and Herrington described these characteristics as "based on constructivist philosophy and approaches, and specifically on situated learning theory" (p. 4). These nine characteristics provide a useful framework for analyzing the educational effectiveness of this laboratory of practice.

Structure of the Analysis

In the following, each of the critical characteristics, based on either Herrington and Herrington (2006) or Herrington and Oliver (2000), will be briefly described, followed by discussion of how each characteristic was intentionally addressed by the design of the field experience. Finally, evidence that the characteristic was indeed relevant will be provided from the Ed.D. participants' semi-structured writing.

Provide an authentic context. Herrington and Herrington (2006) suggested that an authentic context facilitated the investigation of "a realistic problem preserving the complexity of the real life setting" (p. 4), and is capable of sustaining exploration at some depth. They argue against "disembedding course materials from ordinary experience" (p. 4), and ask for contexts that provide "a realistic and authentic rationale for the study of a complex problem" (p. 4).

Design. Learning-centered leadership presents an answer to the "problem" of raising student achievement—a real issue for current U.S. principals, whether in rural, urban or suburban school districts. The National Association of Elementary School Principals (NAESP, 2009) is only one voice among many complaining of "the law's over-reliance [on] standardized assessments as the sole or primary measure of student, school, or educator success" (How do you measure success?). For the principal, the complexity of the problem of raising educational achievement for all students lies in the consensus from years of educational research that the principal's impact on student learning is indirect (Hallinger & Heck, 1996; Heck & Hallinger, 1999; Leithwood & Duke, 1999; Leithwood, Louis, Anderson, & Wahlstrom, 2004; Leithwood, Riedlinger, Bauer, & Jantzi, 2003). Changes at the leadership level of a school do not impact student achievement directly, but only through the teachers—Weick (1982) described this tenuous connection as loose coupling. This field experience was intended to motivate the Ed.D. participants to grapple with learning-centered leadership in a different context.

Practice. In the focus groups they conducted, Ed.D. participants encountered a wide range of responses—from indifference through to investment—when they asked their focus group participants about the extent to which they perceived their principals' practice as characterized by each of the six VAL-ED core components. In terms of indifference, as the Ed.D. participants recorded in their personal course blogs, one group was delayed while participants left to get food to bring to the session, and another group consisted of only six participants. Another pair of Ed.D. participants reflected in their blogs about the motivation of the winner of the "flip camera" incentive for participating in their group who immediately gave it to someone else.

At the other extreme, invested participants were keen to make their opinions heard—leading to survey responses to the effect that: "the focus group can quickly turn into a venting session," and "it is important to be willing to allow participants the opportunity to take the conversation in a direction that was not originally intended." The complexity of the situation was clearly evident in numerous survey response comments concerning the need to pay attention to "body language, intonation, and reaction to other group members [in order to] paint a more open and honest assessment of the topic."

Authentic activities. Herrington and Herrington (2006) suggested that tasks should "comprise ill-defined activities that have real-world relevance, and which present complex tasks to be completed over a sustained period of time" (pp. 4-5). They critique tasks that are "largely abstract and decontextualized" (p. 5).

Design. This field experience was intentionally presented as an ill-defined task. For example, in preparation for this field experience, the Ed.D. students were given the task of develop their own prompts. The Ed.D. participants were invited to infuse their own experience into their questions—which resulted in each focus group responding to a unique set of prompts.

Practice. The discussions of the prompts (which were critiqued by the whole cohort and revised accordingly prior to being used), and the discussions between the two teams that moderated the focus groups in each school after the event thrived on the ill-definition built into the task. As described above, the two teams were required to work with their Chair to develop a synthesis of findings. This conference process was enriched by the multiple perspectives amply represented in the data, since any simple-minded tallying of responses was rendered impractical. Two Ed.D. participants responded to the survey by referring to "the subtle indicators" involved in the process, and another commented on how "it was amazing to see how all the parts came into play to gain the data one needs."

Access to expert performances and the modeling of processes. Herrington and Herrington (2006) suggested that students be exposed to expert performance so that they have a model of how to act. Collins (1988), and Collins, Brown and Newman (1989) suggested that students should have access to expert thinking and thus gain the benefit of the modeling process. Herrington and Herrington suggested that "in many university courses, students are given no examples of…expert comment" (p. 5).

Design. Given that the Ed.D. participants were already in leadership positions in their school division, they were given the task of video recording themselves moderating a focus group as explained above.

Practice. While these videos, in some cases, were considerably less polished than a video of an "expert," they generated high interest and much good-natured banter among the cohort members, in addition to highlighting many instances of exemplary practice. This approach to discerning aspects of expert behavior and encouraging modeling carried over into the next characteristic: coaching and scaffolding.

Coaching and scaffolding. Herrington and Herrington (2006) acknowledged the potential for participants to learn from their peers. Coaching carries the sense of interaction between a more-skilled and less-skilled performer, although "in a situated learning environment…interactions with students…occur mainly at the metacognitive level" (p. 8). Scaffolding, in the Vygotskian sense, refers to the process whereby learners raise their level of performance within their zone of proximal development, when supported by more capable others (Vygotsky, 1978).

Design. The process whereby the Ed.D. participants were encouraged to moderate a focus group of their own choosing and share the edited video of their practice with their colleagues brought the coaching aspect to the forefront. The conduct of the focus groups in the small rural school district facilitated the aspect of scaffolding, as the moderation of each focus group was shared between two Ed.D. participants, allowing one to raise his or her performance to the level of some particularly skilled aspect exemplified by the other.

Practice. With respect to both the development of competent (if not expert) performance, and coaching and scaffolding, the Ed.D. participants appreciated having refined and shared their practice prior to conducting the focus groups in the small rural school district. They indicated that "having the skills to guide the focus group to stay on track and not wander was invaluable." Another commented that "the trick [was], however, having the ability to manage the focus group…this skill [came] with practice."

Authentic assessment. Herrington and Herrington (2006) suggested that authentic assessment required that "the assessment is seamlessly integrated with the activity and provide[s] the opportunity for students to be effective performers with acquired knowledge, and to craft products or performances in collaboration with others" (p. 8). They critiqued the culture of "competitive relations and individual assessment" (p. 8) that they suggested permeated the majority of university learning.

Design. As discussed above, this field experience was designed as a collaborative venture. The roles of moderator and note-taker were split between the two colleagues who conducted each focus group. The Chair "floated" between the two focus groups that he or she was leading, and the production of the synthesis document for each school required input to the Chair from the perspectives of each team member.

Practice. The production of the synthesis document was a frequent topic on the Ed.D. participants' personal blogs. In particular, one Chair suffered from a lack of credibility in the eyes of one of his two focus group pairings. This particular pairing was comprised of two school district colleagues who were not satisfied with the way in which the synthesis document failed to take account of their perspectives. This was a compelling example of the assessment of performance (in this instance, the performance of the Chair) arising from the context of the activity. It also provided a gauge of the serious approach taken by the Ed.D. participants to the field experience.

Multiple roles and perspectives. Herrington and Oliver (2000) suggested that the "ability to criss cross the learning environment" (p. 27) added to the effectiveness of the authentic learning environment. They argued that any authentic learning situation should support more than a single interpretation.

Design. In the lead-up to the conduct of the focus groups, a central office administrator of the small rural school district who was integrally involved with the ongoing evaluation project shared her perspectives of the district, and frankly answered any of the questions the Ed.D. participants raised. Her perspectives provided a backdrop against which the Ed.D. participants set their personal perspectives in the wake of the focus groups.

Practice. Differences in perspective were frequently discussed by the Ed.D. participants in their personal blogs. In some ways, their observations coincided with what they had been lead to expect (for example, with respect to the welcoming "feel" of one of the school buildings), but in other ways, their observations were starkly different (for example, one team felt "dismissed" by the school principal). There was a disparaging tone to many of the Ed.D. participants' blog reflections, and this gave rise to further reflection and, in some cases, revision of thinking.

Comments from the survey included the observation that "being the [Chair] was a great experience because it allowed me to move from one group to another and gain insight from various perspectives." From another team (in which the Chair filled-in for a team member who suffered a coughing bout and was relegated to a spectator role after only a few minutes) came the response "being the moderator and scribe were [good experiences]…the only thing about being the scribe is that you can't script all that you hear, and where it came from."

Collaborative construction of knowledge. Herrington and Oliver (2000) stressed the importance of "tasks that [were] addressed to a group rather that an individual" (p. 27). This type of task, they suggest, naturally arises in group settings, and thrives with effective incentives for whole-group achievement.

Design. As mentioned above, the Ed.D. participants were randomly assigned to the four teams for this field experience. Each team elected a Chair, and carried out the task of developing the focus group prompts around the core components. In addition, each team was required to arrange transport to its assigned school, and make its own arrangements for debriefing and generating the team synthesis.

Practice. The issue of bias in the collaborative constructing knowledge came to the forefront, fueled by the disparaging blog comments adverted to above, and gave rise to a number of discussions of the qualitative approach. The Ed.D. participants were encouraged to be aware of how their personal experiences and professional expectations could potentially play into their observations, and how the concept of "fact" is decidedly slippery when knowledge is being constructed from observations. One of the survey responses referred to focus groups as "effective…tools if the evaluators are well-prepared and unbiased…[but] it was difficult not to show my bias, even through body language and facial expressions."

Promote reflection. Herrington and Oliver (2000) proposed that the promotion of reflection in the context of authentic learning enabled the formation of abstractions, which they interpreted as "the facility for students to return to any element of the program and act upon reflection" (p. 27).

Design. The Ed.D. participants were required to reflect in their personal course blogs about their experience in the small rural school district, and respond to a general survey question.

Practice. The conscientious refining of their blog entries indicated an acceptance of responsibility for ensuring that the appropriate meanings were drawn from the focus groups. In their responses to the survey question, the Ed.D. participants often referred to how the field experience integrated with their personal traits. For example, one respondent, after commenting on how focus groups allowed individuals to share their thoughts, continued "I for one can safely say that I am more upfront and honest (and perhaps more willing to let my guard down) when I am around others" (parenthesis in original). Another responded by abstracting from the field experience and taking an epistemological approach: "Pondering this question leads me to compare focus groups to one-on-one interviews…I do believe that focus groups must provide more of a balance in gaining qualitative data." In this same vein, a third respondent suggested that "an interview can be deemed a less 'trustworthy' means of data collection, though not entirely."

Promote articulation. Herrington and Oliver (2000) referred to the making explicit of tacit knowledge as articulation. They associated articulation as emerging from "a complex task incorporating inherent, as opposed to constructed, opportunities…[to] enable social then individual understanding" (p. 27).

Design. This field experience engendered a social environment in which each individual developed his or her understanding of the core components of learning-centered leadesrhip. In utilizing their prompts, the Ed.D. participants followed a quintessentially Deweyan (1916/ 2004) experiential paradigm, offering their prompts to the focus group participants (they acted on the environment), and then listening as their focus group participants reacted out of their sense of the commensurability of the prompts with their beliefs and experience—whether positive or negative (the environment acted back on them).

Practice. There were several instances among the survey responses of respondents' tacit assumptions being made explicit. One of these assumptions had to do with the background knowledge required by moderators. One respondent commented that "[I think] the person [moderating] the focus group needs to be educated enough on the topic to help guide the panel being interviewed, yet far enough removed from the issue being investigated so [he/she] doesn't get sucked into it." A further instance had to do with the comprehensiveness of the data gathered from focus groups: "Focus groups are an extremely valuable component…as long as [they] are only a component. The most effective [evaluations] are multi-faceted, including surveys, observations, and interviews if warranted."

Conclusion

The field experience reported in this case study set out to situate the consideration of the concept of learning-centered leadership in an authentic setting featuring the confluence of learner, task, and environment in dynamic interaction. The situated learning resulting from this field experience lessened the incongruity of learning in a theoretical setting about the complexities of a concept embedded in practice. In moderating focus groups on the issue of learning-centered leadership, Ed.D. participants were engaged in the reciprocal process of acting on the environment, and being acted upon by the environment that characterizes experience. The design of the field experience was validated by the outcomes elicited in two semi-structured reflective modalities—a personal blog, and a response to a general, open-ended survey question.

The overwhelmingly positive verdict regarding the value of this field experience from both the Ed.D. participants and the principals of the four schools involved was heartening, and confirmed the current emphasis on the relevance of the laboratory of practice concept to the development of scholars of practice. Hence, the field experience was an effective learning experience.

Significant learning emerged from this field experience for the faculty who designed and conducted it. First, in terms of resource commitment, the Ed.D. participants' involvement in the activities associated with the field experience occupied a considerable part of the class time during the semester—despite the fact that a number of the activities were performed outside of class time (for example, the generation of the synthesis document). A conventional approach would have been much more economical.

Second, setting up the field experience involved much forethought, negotiation and planning over many weeks in the semester prior to the Ed.D. participants' being invited into the discussion. For example, apart from the obvious need to work with the small rural school district's administrative team and principals, the Ed.D. participants' own district administration had to be brought into the discussion so that the 20 participants could be released to travel to conduct the focus groups on the designated day. Thus, establishing the infrastructure that supported the field experience was a major task.

Third, the question as to whether this field experience constituted gymnastics should be addressed. It is conceivable that the Ed.D. participants gained deeper insights into the practical process elements of moderating focus groups than they did into the ways in which the core components of learning-centered leadership played out in a small rural school district. At the same time, learning about the process elements may be the most valuable outcome. At the time of writing, two- or three-person teams of the Ed.D. participants are immersed in a subsequent field experience in which they are evaluating programs in their own school division, using the skills they developed in the lead-up exercise and the field experience reported here. At this stage, it would appear that the authentic learning with which they engaged in the field experience reported here is paying dividends. They have all delivered interim reports to their "clients" on time, and are working towards developing final reports—which will be presented at a public hearing sponsored by the school board. The stakes are high, since they are well

aware that their evaluations may well have ramifications for their "clients" and the programs they oversee in a time of severe budget cutting.

This third of the series of three field experiences over their final two semesters of "coursework" constitutes the final step before the Ed.D. participants enter the capstone phase of their academic program. The capstone requires them to enter into agreements with other school districts or organizations with educational emphases to conduct program evaluations. These capstone projects will constitute a culminating field experience with the highest personal and professional stakes. While the outcomes of the capstone projects are yet to be determined, it seems that the field experience reported here has been a seminal event in the Ed.D. participants' growth, segueing into the subsequent and final field experience, and contributing to their readiness to engage with their capstone experience.

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USING PROGRAM ASSESSMENT TOOLS TO IMPROVE STUDENT LEARNING IN INTRODUCTORY ACCOUNTING

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ABSTRACT

Content coverage is critical in Introductory Accounting to ensure that students have a basic understanding of all aspects of financial accounting. However, by trying to cover all the material in the text, students may not be learning the most important ideas in Introductory Accounting. This paper discusses the use of program assessment tools in course design to enhance student learning in Introductory Accounting courses. Introductory accounting faculty need to step back and think about what is most important for students to learn. Instructors need to focus on important concepts and ideas that will help students understand the world of financial accounting. This paper offers an approach to course design that will help instructors. Backwards design (Wiggins and McTighe, 2005) is an approach in course design that identifies learning objectives of the course first. Asking this question before designing the course focuses the instructor on the larger picture of what students should understand after taking the course. This method of course design ties assessment into education at the planning point. Backwards design can be used to integrate program assessment into course planning. This paper applies backwards design to Introductory Accounting and discusses the benefits and challenges of using program assessment tools to improve student learning.

INFLUENCE OF THE FIVE FACTOR PERSONALITY AND LOCUS OF CONTROL ON RETENTION RATES IN AN ENGINEERING PROGRAM

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ABSTRACT

Retention rates for engineering programs have been, and continue to be, problematic even though a large number of students enroll in the programs. While it has often been assumed that low retention rates have been due to students' inability to handle the rigorous course work, recent studies have found that this is not always the case. Borkowski posited a model of academic success based on metacognitive and affective factors working in combination with basic aptitude. This study examined the affective factors of Borkowski's theory by exploring the impact of personality factors and LOC on retention rates in an engineering program. Entering freshmen students (n = 139) in the fall of 2007 and 2008 completed a series of questionnaires including the NEO-FFI and NDLOC scales, and retention information was obtained at the end of the freshman year. A series of ANOVAs and a

binary regression analysis were performed. Among the personality factors only Openness had a significant unique effect in the binary regression. While LOC was not found to be predictive of retention over the first year, it was predictive of students' college GPA. Results of the study lend partial support to Borkowski's model.

Keywords: Engineering, Retention, STEM Fields, Five Factor Model, Locus of Control

Introduction

The need for trained engineers in the United States workforce is constantly increasing, and the number of students graduating from engineering programs is not meeting this demand (Duderstadt, 2001). Even though students are applying to engineering programs at rates that match those of other college programs like medicine or law, the retention and graduation rates for engineering students are low (Duderstadt, 2001; House, 2000). Engineering programs are trying to attract and retain more students by incorporating cutting edge technology and degree options to help students be prepared to enter a diverse workforce. Duderstadt (2001) states "The changing technology needs of a global knowledge economy are challenging the nature of engineering practice, demanding far broader skills than simply the mastery of scientific and technological disciplines" (p. 1). Because of these demands a variety of specialties are being offered at the undergraduate and graduate level in order to encourage individuals to consider programs in engineering. These programs offer students extensive knowledge in areas such as technology, science, and mathematics that will aid them in engineering fields. Engineering represents a very diverse field of study offering a wide array of specializations ranging from aerospace, civil, chemical, electrical, mechanical, biomedical, and nanotechnology to name a few. While the number of applicants to engineering programs is growing, there is still not enough engineers to meet the workforce demand (Morton, 2007).

One of the concerns with the engineering programs in the United States is that while applicant and acceptance rates have remained constant over the past few years, the retention rates for these programs are low (Morton, 2007). A national average for 2000 shows that "only 35% of students who began college in SEM (science, engineering, and mathematics) majors persisted to eventually graduate from SEM disciplines" (House, 2000, p. 207). The areas where retention rates are the lowest for women and ethnic minority students. Ethnic minorities make up approximately one-third of the school age population, yet they are less likely to graduate from engineering programs than non-minorities (Tsui, 2007). The number of ethnic minority students pursing a degree in the science, technology, engineering, and mathematics (STEM) fields are increasing, but African Americans, Hispanic/Latino and Native Americans represents only about 11% of those employed STEM occupations (Tsui, 2007). For retention rates in engineering programs alone, only 32.3% of African Americans who enroll in the beginning of the program continue on to graduate (Georges, 2000). Georges states that "a minority student entering engineering is only half as likely to obtain a bachelor's degree as a non-minority student" (p. 34).

One way of improving retention and graduation rates among students entering engineering programs is to address their ability to succeed academically in these programs. A model by Borkowski and his

colleagues (Borkowski, Chan, & Muthukrishna, 2000) suggests that academic success is based on a number of interactive components. There are factors that will aid an individual in using his/her ability efficiently and effectively given basic aptitude is present. Borkowski's model proposes that there are two key aspects to the metacognitive process. One aspect involves acquisition procedures (executive processes) and the other focuses on affective factors (Borkowski et al., 2000). Executive processes are based on an individual's knowledge of his/her own learning styles and the use of this personal knowledge in an effective and efficient manner (Hall, Smith, & Chia, 2008). Affective factors include self-efficacy, motivation, locus of control (LOC), and personality characteristics or traits. When an individual demonstrates high levels of executive processes and the affective factors are such that they benefit the individual in academic endeavors, then that individual is more likely to be successful.

As noted above, one of the affective factors that may contribute to executive processes was personality. One way of assessing personality characteristics that has gained in popularity in recent years involved the Five Factor Model (FFM). The most widely used terminology for the FFM is that proposed by Costa and McCrae (1992). The five factors identified and named by Costa and McCrae are: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Numerous research studies have been conducted in recent years on the personality factors of the five factor model and academic success (Conard, 2006; Komarraju & Karau, 2005). Conard's (2006) research has assessed the incremental validity of the five factor model in predicting academic success beyond that accounted for by cognitive ability. He found personality measures (conscientiousness, in particular) showed promise in predicting academic outcome and he further suggested the potential use of such measures in college education.

Research has also been conducted on the affective factor of LOC as a predictor of academic success (Brownlow & Reasinger, 2000; Bursik & Martin, 2006; Silberstein, 2005). LOC can be viewed as a person's perception of influences on life comes or the underlying causes of events. Individuals with an internal LOC credit success and failure to personal attributes or their actions, while individuals with an external LOC credit outside forces such as luck or powerful others as being in control of their success and failure (Silberstein, 2005). The NDLOC has been frequently used by researchers to assess LOC in college populations (Nowicki & Duke, 1974, 1989). Research has shown the scale to be useful in predicting academic success in students. Individuals expressing internal LOC traits were more likely to succeed in academics compared to those with external LOC. Recent studies have also used LOC as one of the affective factors contributing to academic success (Brownlow & Reasinger, 2000; Gifford, Briceño-Perriott, & Mainzo, 2006; Hulse et al., 2007; Uguak, Elias, Uli, & Suaudi, 2007). Hulse and colleagues (2007) conducted research on the influence of LOC on academic success and found those students with higher internal LOC were more likely to succeed in academics.

The purpose of the current study is to examine the effects of personality traits as measured by the NEO-FFI and locus of control measured by the NDLOC on students' success and retention in the engineering program at East Carolina University. Engineering programs attract many students around the world, but within a few years many of these same students opt to change majors and/or drop out of the program prior to completion. The numbers of students completing engineering programs are low in comparison

to the numbers who initially enter these programs. The purpose of this study is to assess affective factors (personality and locus of control) that may help identify which students entering the program are more likely to be retained.

Method

Participants

The data collected for this study was a subset of a larger longitudinal study that is examining the recruitment and retention of engineering students over a four year period. Participants in the current study were recruited in the fall of 2007 and fall of 2008 from a COAD 1000, Student Development and Learning in Higher Education, class specific to freshmen students with engineering as their stated major. The COAD 1000 class was designed specifically for individuals new to the engineering program, and it allowed students to meet peers with the same declared major and learn more about different fields open to engineering majors. A total of 139 freshmen students from this course participated in the study.

At the end of their freshman year data sets from students were separated into retainees and nonretainees. Retainees were defined as students enrolled in the engineering program after completion of freshmen year. Nonretainees were students who were no longer enrolled in the program due to transferring to another university, declaring a new major, or dropping out of school at the end of their freshman year. Those participants who were still enrolled in the program but were not in good standing (less than 2.0 GPA) were included in the data analysis as retainees since they were still enrolled in the program. Table 2 depicts the overall demographic information of the students who participated in the study as well as the demographics for retainees and nonretainees.

Procedures

Participation in the study was voluntary and choosing not to participate, did not negatively impact a student's academic standing in the COAD 1000 course or the engineering program. The students who agreed to participate were asked to sign a consent form and any questions regarding the study were answered prior to their participation. The consent form requested the students' permission for the researchers to access their SAT scores (Verbal and Mathematics), calculus readiness test scores as measured by the ALEKS, and both their high school and college GPAs as part of the study. Next, students were asked to complete a series of self-report questionnaires including basic demographic information (i.e., gender, age, classification, and ethnic origin), the NEO-FF, and the NDLOC. Administration of the assessment battery took approximately 60 minutes. The Institutional Review Board (IRB) at East Carolina University reviewed and approved the current study, and APA ethical guidelines for research with human participants were followed.

Results

Descriptive statistics indicated that at the end of the first year in the engineering program 64 of the initial 139 students were retained (46%). Of those students who were retained, 57 (89%) were considered to be in good standing with college GPAs of 2.0 or greater. For nonretainees (*n* = 75), 29 (39%) were dropped from the engineering program due to poor GPA, while another 46 (61%) transferred to a different program of study at East Carolina University.

Table 1 presents the sample size, minimum score, maximum score, means, and standard deviations for the aptitude measures, LOC, and personality factors. The ALEKS score is based on a 0 to 100 point scale, GPA for college and high school is on a scale of 0.00 to 4.0, while the SAT Verbal and Math are based on minimum of 200 and maximum 800 points for each.

Table 1. *Descriptive Statistics for Aptitude measures, Locus of Control, and Personality Factors.*

	N	*Minimum*	*Maximum*	*Mean*	*Std. Dev*
ALEKS	126	18	89	49.59	17.843
High Sch GPA	138	2.143	4.00	3.07	0.402
College GPA	139	.186	4.00	2.24	0.853
SAT Math	136	370	770	554.49	70.446
SAT Verbal	136	350	690	491.40	64.981
LOC	139	1	31	11.93	5.441
Conscientiousness	132	18	43	29.48	5.055
Neuroticism	132	6	44	21.49	6.284
Openness	132	14	37	26.20	4.322
Agreeableness	132	14	42	27.55	5.074
Extraversion	132	8	40	29.57	5.041

Scores are based on raw data.

In order to determine if there were significant differences between the two groups in regard to basic aptitude, an ANOVA was performed with retention status as the grouping variable and SAT (Verbal and Mathematics) score as the criterion variable. The analysis used the p = .05 level of significance. In addition, effect sizes (eta squared, η^2) were computed to assess the degree of association between an effect and the dependent variables to determine the proportion of total variability attributable to a factor. Results of the ANOVA did not indicate a significant effect, $F(1, 122) = 1.78$, $p = .18$, $\eta^2 = .01$. There was not a significant difference between retainees and non-retainees on the SAT composite score, M = 1058.00, SD = 15.19, and M = 1030.87, SD = 13.56, respectively. Results suggested that retainees did not differ in the overall aptitude as measured by the SAT composite from non-retainees.

A series of one-way ANOVAs were performed with retainees vs. non-retainees as the grouping variable and scores on the measure of LOC and the personality factors from the NEO-FFI as the criterion variables. Results of these analyses failed to find any significant differences between the two groups. Table 2 presents the results of the analyses. Although it was anticipated that a few of the personality factors (i.e. Conscientiousness and Openness) would show significant differences between the two

groups, none of the analyses with the personality factors were significant. The ANOVA for LOC was also not significant.

Table 2. *Results from the series of One-way ANOVAs for Personality factors and LOC.*

Source	*MS*	*df*	*F*	*p*	η^2
LOC	2.39	1	2.41	.12	.02
Error	.99	137			
Neuroticism	2.46	1	2.49	.12	.02
Error	.99	130			
Openness	3.06	1	3.10	.08	.02
Error	.98	130			
Agreeableness	0.19	1	0.19	.66	.00
Error	1.00	130			
Conscientiousness	.65	1	0.65	.42	.01
Error	1.00	130			
Extraversion	.08	1	0.08	.77	.08
Error	1.00	130			

Scores are based on Standardized data.

A sequential binary regression was performed with the predictors entered in temporal order. The predicted event was retention in the program. The predictors were entered starting with: 1) measurements that were taken during high school (high school GPA and SAT Verbal and Mathematics scores); 2) next the ALEKS taken once students had been accepted to ECU but prior to beginning their first semester of college; 3) NEO-FFI and ND-LOC scores from students during the first semester of college; and 4) last, college GPA after completion of the students' freshmen year. Twenty cases were excluded from the analyses due to missing data. For the analysis, the continuous variables were standardized to allow for an easier interpretation of results. The first-entered block of predictors (high school GPA, SAT Verbal, and SAT Mathematics) from high school was significantly related to retention, $\chi^2(3, N = 120) = 10.963$, $p = .012$. This model correctly classified 62.5% of the cases. High school GPA,

$\chi^2(1, N = 120) = 4.464$, $p = .035$, and SAT Mathematics, $\chi^2(1, N = 120) = 4.394$, $p = .036$, had significant unique effects, but the effect of SAT Verbal fell short of significance, $\chi^2(1, N = 120) = 1.440$, $p = .230$.

Next, the ALEKS scores were added to the model, and the scores contributed significantly to predicting retention and correctly classified 71.7% of the cases. Adding ALEKS to the model significantly increased the fit between model and data, $\chi^2(4, N = 120) = 17.988$, $p < .001$. After adding ALEKS to the model, the unique effects of the other three predictors all fell short of statistical significance.

Adding the personality variables (NEO-FFI and LOC scores) did not significantly increase the fit of model and data, $\chi^2(6, N = 130) = 8.765$, $p = .187$. Among the personality variables, only Openness had a significant unique effect. The model was able to correctly classify 71.4% of the students retained in the program and 83.1% of those who dropped out of the program, for an overall success rate of 76.7% in prediction.

On the final step of the binary regression, college GPA was added to the model. Adding college GPA to the model significantly increased the fit between model and data, $\chi^2(1, N = 120) = 27.454$, $p < .001$. . The model was able to correctly classify 76.8% of the students retained in the program and 83.1% of those who dropped out of the program, for an overall success rate of 79.2% in prediction.

Table 3 shows the logistic regression coefficient, Wald test, and odds ratio for personality factors, LOC factor and aptitude measures. College GPA, ALEKS, and the five factor personality factor of Openness made significant unique contributions in predicting retention. For each standard deviation increase in college GPA, the odds of retention increased by a multiplicative factor of 5.99. For each standard deviation increase in ALEKS, the odds of retention increased by a factor of 2.516; and for each standard deviation increase in Openness, the odds of retention increased by a factor of 1.829.

Table 3. *Logistic Regression Predicting Retention Rates from aptitude scores and Personality and LOC factors.*

Predictor	*B*	Wald χ^2	*p*	Odds Ratio
HS GPA	.221	.461	.497	1.248
SATV	-.404	1.745	.187	.668
SATM	.334	.930	.335	1.396
ALEKS	.923	8.002	.005*	2.516
LOC	.285	.713	.399	1.330
Openness	.604	5.355	.021*	1.829
Neuroticism	-.596	2.859	.091	.551
Extraversion	-.151	.217	.641	.860
Agreeableness	.038	.016	.899	1.038
Conscientiousness	-.220	.461	.497	.802
College GPA	1.792	17.480	.000*	5.999

(*) Indicates significance at .05 level.

Although not part of the original study, an analysis was run to determine if any of the factors measured contributed to the prediction of college GPA. A linear regression using stepwise procedure was used with GPA as the criterion variable and all other variables (personality factors, LOC, High school GPA, ALEKS and SAT total) as predictor variables (Derksen & Keselman, 1992). The stepwise linear regression found high school GPA (t = 4.96, p < .001), the ALEKS (t = 3.151, p = .002), and LOC (t = -2.85, p = .005) to be significant predictors of college GPA. An interesting finding is that during Step 2 of entry, both LOC (t = -2.85, p = .005) and Conscientiousness (t = 2.054, p = .042) were significant at the .05 level, but once LOC was added to the model, Conscientiousness (t = -1.44, p = .152) was no longer significant.

Discussion

A binary regression was run in order to determine if any of the affective factors were predictive of retention. In the binary regression analysis predictors were added in temporal order: 1) high school GPA and SAT scores, 2) ALEKS scores, 3) affective factors of personality and LOC, and 4) college GPA. ALEKS scores. The personality factor Openness and college GPA were found to be predictive of retention. Openness was the only affective factor to add to the prediction of retention. Students who were retained in the program at the end of their freshman year obtained higher scores on this factor than their counterparts. While adding the Openness factor only made small statistical difference in retention at the end of the first year, it demonstrated that students who enter engineering program engaged in activities to further their knowledge and were open to trying new things are better prepared for the engineering programs. These students were more likely to be retained after the first year due to their desire for seeking out how things work and searching for new experiences.

The findings of this study were not supportive of previous research. Current findings indicated that there was not a significant difference between the two groups on the LOC scale in regard to retention;

however, results from Gifford et al. (2006) found that the more external LOC orientation an individual had, the lower cumulative GPA they had and the less likely they would be retained in their first year of college. It should be noted that Gifford et al. used correlations only.

The findings for personality traits were only partially supportive of previous research. In several studies, the Conscientiousness factor was found to be significantly higher in individuals who stayed in college and had higher academic success (Chamorro-Premuzic & Furnham, 2003; Conard, 2006; Komarraju & Karua, 2005). No difference was found in regard to Conscientiousness between retainees and nonretainees in the current study. Some studies also found those high on the Neuroticism factor would be less likely to be retained in college and have lower GPAs, but the current study did not find any difference in this factor (Chamorro-Premuzic & Furnham, 2003; Komarraju & Karua, 2005).

In the current study only the Openness factor was predictive of retention. Openness was a significant factor when added to the model. This finding was supportive of research by Chomarro-Premuzic and Furnham (2003) that showed Openness to be positively associated with final grades and learning strategies. Research by Komarraju and Karau (2005) also found Openness to also be associated with thinking, persisting, and a desire for self-improvement. These findings may be because the Openness factor has often been associated with active seeking and appreciation of new experiences (Costa & McCrae, 2007). These skills have been shown to be important for individuals who plan to make a career of engineering and often sought in the business environment.

The model proposed by Borkowski suggests that it is the indirect role of the affective factors that can assist the metacognitive factors in increasing chances of academic success when aptitude is held constant (Borkowski et al., 2000). Though LOC and personality factors were not significantly different in the ANOVAs, the findings from the binary regression analysis suggest that the Openness factor does play an indirect role in retention rates. Openness significantly increases the ability to predict retention in the binary regression model when added. It is this indirect role that is the main focus of this study, and while the other personality factors were not significant, this may be due to limitations within the study itself.

Although not part of the original study, a stepwise regression was conducted on the data to determine if any of the affective factors were predictive of GPA. High school GPA and scores from the ALEKS were shown to be strong predictors of college GPA but LOC was the only affective factor that met the criteria to be included in the regression. The more I-LOC orientation individuals reported, the higher their GPA was after the first year of the engineering program. This finding was supported by the Borkowski model (Borkowski et al., 2000) which suggested that the affective factors, like LOC, played an indirect role in academic success.

This study had several limitations that need to be noted. One particular limitation is that this study only looked at the student's first year in the engineering program, and several factors could impact the results on the retention rates and personality factors. The first year for any college student is an adjustment that can affect grades and retention. Many students have never lived independently, nor have they had to make decisions regarding their academic success. The choices to attend class or study

are based solely on the student's attitudes, and could play a role in the grades they earn in college. Also, another limitation from only testing first year students is that past studies suggest that students drop out from the STEM programs within the first two years (House, 2007; Spring & Schonberg, 2001; Tsui, 2007). A number of students continue to drop from the program during the second year because of differences in personalities or study habits. While the first year in the engineering program may be affected by students' ability to adapt to being on their own, conducting analysis on data collected from students two or three years into the program may better illustrate the differences in personality and LOC. This type of analysis could look closer at their personality and LOC factors over a broader time span. In addition, only the general trait of LOC of control was assessed rather than looking at LOC as a component of specific situations/environments.

Another limitation is that the participants in the current study are from a recently developed program in engineering at a southeastern university. This limits the external validity, and generalizations to other populations need to be made with this limitation in mind. There is also diversity of students in regard to gender and minorities representation in the current study. Only 19 (13.5%) of the 139 participants were women; and Hispanics accounted for 4% (6 students) of the total participants, African Americans 7.8% (11 students), and Asians 7% (10 students). This limitation does not allow for analyses to be conducted on possible differences for minorities and women in retention rates. Another limitation with using a new program with few students is that only large significant differences could be found with such a small sample size. For the results to find a significant finding at a medium effect, a larger sample pool is needed to allow for more external validity in the results. Future research should be conducted using more participants from various backgrounds. This will also add external validity to the research.

Future studies should expand research to examine the effects of LOC and personality factors over students' entire academic careers and also assess variations that occur due to gender and ethnic differences in engineering programs. A longitudinal study should be used to track students from freshmen year to graduation, and demonstrate any differences that can occur in personalities and LOC as the student progresses. As mentioned there is a need for more research to evaluate why there are such discrepancies between gender and minorities, even though these groups have the same aptitude ability.

This study was designed to examine the differences between retainees and nonretainees in a recently developed engineering program. The analyses of variance did not find any differences between these two groups on personality factors or LOC. However, the binary regression analysis found Openness to be a significant factor in predicting retention with retainees scoring higher on this factor. Surprisingly, Conscientiousness did not reach the criteria to be included in the model. The finding regarding Openness in predicting retention and LOC in predicting college GPA , however, lends partial support to the indirect role of affective factors in academics (Borkowski et al., 2000; Hall et al., 2008).

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THE PERSISTENCE OF SAT SCORES AS PREDICTORS OF DOWNSTREAM ASSESSMENT RESULTS

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ABSTRACT

An analysis of assessment results show a surprisingly persistent association between SAT scores and performance on various assessment exams employed in an undergraduate business curriculum. SAT score is consistently the strongest predictor of performance, with R2 values generally exceeding those reported in studies that examine the relationship between SAT score and undergraduate performance.

Key Words: SAT, Assessment, Business Education, College Entrance Examinations;

Introduction

The SAT exam is used by college admissions personnel to determine, in part, which applicants they will offer admission. However, the predictive validity of the SAT exam has long been called into question, that is, it has been suggested that the exam does not predict college student performance very well. For example, in a study of almost 4,000 undergraduate students entering the University of Pennsylvania, Barron and Norman (1992) found that while high-school class rank and achievement (SAT II) test scores predicted a significant portion of the variation in college GPA, SAT I scores did not. Data collected by the Department of Education between 1980 to 2004 show that SAT scores are only weak to moderate predictors of the future academic success of undergraduates (Kidder & Rosner, 2002). Various studies have reported R^2 values as low as 0.04, and generally less than 0.20, for SAT regressed on some overall measure of student performance (e.g., GPA). See Collier et al. (2007) for a review. Some studies have found higher correlations between SAT scores (or sub-scale scores) and specific courses or groups of related courses. For example, Shoemaker (1986) examined the relationship between SAT and the GPAs of engineering majors and found that SAT math scores where moderately correlated with GPA in the undergraduate engineering curriculum. On the other hand, Collier et al. (2007), found that SAT scores, verbal and math, do not have any predictive power for final grades in an exercise physiology class.

Criticisms of the SAT are myriad. It has been observed that exam is biased towards males (Marklien, 2009), whites (Chen, 2004), traditional learners, those for whom English is their second language, and those whose talents lie in creative and/or practical skills (Sternberg, 2003). The College Board agreed to significantly revise the SAT I exam to address concerns, and added a new writing component in 2005.

However, critics have maintained that the new test will still not accurately predict college performance and some (Hoover, 2002), and reached this conclusion before the new test was even released.

As a consequence of the substantial body of published literature criticizing the SAT exam, many colleges and organizations are viewing the exam with an increasingly skeptical eye. A commission created by the National Association for College Admission Counseling recommended, in September 2008, that colleges and universities move away from their reliance on SAT scores (Harper and Vanderbei, 2009). The National Center for Fair & Open Testing publishes a list of over 700 colleges that "deemphasize the use of standardized tests by making admissions decisions about substantial numbers of applicants who recently graduated from U.S. high schools without using the SAT or ACT." (http://www.fairtest.org/university/optional)

To be fair, there are other arguments against the SAT I besides questions over predictive validity. It has been argued, for example, that using achievement tests rather than aptitude test would give high school students more incentive to actually learn the subjects taught in high-school classes, i.e., history, the sciences, literature, etc. There are also other "less noble" incentives for colleges to drop the SAT from entrance requirements. Some have suggested that colleges that are "test-optional" understand that students who do well will most likely submit their SAT scores, while those who perform poorly won't. The result is a higher average applicant SAT score for their institution. Further, test-optional colleges also know that they will see an increase in their application pool, and if they still admit the same number of students as in the past, their percentage of admits will make them more competitive in college rankings. (Caperton, 2009).

Despite the criticism of the exam, seventy percent of the 2,500 accredited four-year institutions in the U.S. require the SAT and more students are taking the exam than ever before (Wise, 2009). The SAT is viewed as being more objective than competing measures of student quality, such as high school average, which has been called into question because of grade inflation. Consider that in 1987, 27 percent of SAT takers reported high school GPAs of A plus, A, or A minus; by 2007, this figure had grown to 43 percent (Caperton, 2009).

And so the debate about the merits and usefulness of SAT rages on. In this paper, we introduce a new facet to the discourse. We describe some results that we encountered over time as we implemented the assessment plan developed for our undergraduate business program. The findings described within are based on assessment results from over 1000 undergraduate business majors taking a variety of assessment exams over a period of three years. The exams included locally developed instruments as well as proprietary, nationally normed, exams. We were surprised by the magnitude, consistency, and persistence of SAT scores as the primary predictor of outcomes assessment results.

Context

The results described within pertain to the undergraduate business program at the State University of New York College at Brockport. SUNY Brockport is one of twelve comprehensive, primarily

undergraduate, liberal arts colleges in the SUNY system. Total undergraduate enrollment is about 7,800 students. Approximately 1,200 of these are pursuing a business-related degree.

It is appropriate to define a few terms and concepts before continuing. Henceforth, when using the term "assessment", we will be referring to learning outcomes assessment, i.e. the determination of the degree to which students actually learn the knowledge and skills imparted in their degree program. We contrast learning outcomes assessment with program outcomes assessment, which attempts to measure broader program such as student retention, alumni satisfaction and employer perceptions of academic program quality.

In pursuing assessment, measurement of learning may be direct or indirect. Direct measures require that students actually demonstrate a learning outcome. In contrast, assessment protocols may rely instead on indirect measures, such as a student testimonial indicating that the outcome was achieved (e.g., on an exit survey). While program outcomes assessment may be reasonably conducted through the use of alumni and exit surveys, surveys are not direct measures of learning and can only provide students' perceptions of the degree to which learning occurred.

As an institution accredited by the Association to Advance Collegiate Schools of Business (AACSB), we are working to meet the new AACSB Assurance of Learning (assessment) standards. AACSB Assurance of Learning standards require direct assessment of learning.

Another notion that is central to our discussion is the concept of low stakes testing. Low stakes testing refers to testing environments where test performance has little or no real impact on the test taker. Participation in the testing exercise may be optional and, depending on circumstances, performance generates no reward or punishment to the test taker (Bracey, 1996). The students' motivation to expend serious effort on the assessment exercise is, therefore, suspect.

Low stakes testing situations are typical when downstream testing is employed, i.e. students are tested some significant time period after learning was supposed to have occurred, perhaps in a capstone course or at some significant milestone (e.g. the end of the senior year of high school). The ETS Major Field Exam in Business is an example of an assessment instrument that business schools are likely to administer in a downstream format.

In order to address the motivational issue and minimize the additional resources required for the assessment task, some authors advocate embedded assessment, i.e., assessment exercises embedded as normal activities within a course. In theory, if assessment can be embedded within existing courses, administrative efficiency is gained as it is not necessary to develop (or procure), administer, evaluate, and analyze separate assessment exercises. Further, if course grades are influenced by the assessment exercise, student motivation may be improved. Pringle and Mitchell (2007) suggest that AACSB recommends the use of embedded assessments.

Embedded assessments, however, introduce their own set of limitations and challenges. In-class assessments may actually be measuring a student's short-term memorization skills rather than assessing true (retained) learning. In programs where multiple sections of the same course are taught by different faculty (including part-time or adjunct faculty), consistency in the administration, evaluation, and interpretation of embedded assessment exercises becomes an issue. Finally, relying solely on embedded assessment processes can pose significant problems for schools (such as ours) with large transfer populations, where certain courses, e.g., introductory accounting and economics courses, are likely to be transferred from a junior college by many students. For the sake of comparison, between transfer and native students, some downstream assessment of transfer and native populations is required. Thus, there are circumstances where downstream assessment is both necessary and legitimate, with the benefits of embedded assessment notwithstanding.

To summarize the discussion to this point, both embedded and downstream retention protocols can provide direct assessment measures and thereby satisfy accreditation requirements. Embedded assessments have advantages with regard to efficiency and motivation. Downstream assessments are plagued by the motivational issue but offer other advantages as described above.

In developing our learning outcomes assessment protocols, we have delineated learning outcomes for each course in our curriculum. Our assessment protocols attempt to determine the degree to which students can demonstrate the learning outcomes. Towards this end, we use a combination of locally developed and proprietary assessment exams, administered in a downstream format. Proprietary exams include the ETS major Field Exam in Business and the Test of Understanding of College Economics (TUCE), micro and macroeconomics (National Council on Economics Education, 2007). Some of the exams are intended to assess outcomes for a single course, e.g. introductory statistics. Others exams assesses outcomes from, multiple courses, e.g. accounting I and II.

We administer our exams at two milestones in the curriculum. The first milestone is enrollment in the Principles of Corporate Finance Course. This course lists several sophomore-level business courses as prerequisites and it is rarely transferred. As such, it provides an ideal opportunity to assess the following sophomore-level business courses for both transfer and native students:

- Introduction to macroeconomics;
- Introduction to microeconomics;
- Introduction to statistics;
- Introduction to financial accounting;
- Introduction to managerial accounting.

We also assess the students' math skills in the finance course.

The second milestone is enrollment in the capstone Corporate Strategy course. This course lists the business program core courses as prerequisites. As such, it provides an ideal opportunity assess the following junior-level business courses:

- Principles of Corporate Finance;
- Principles of Marketing;
- Organizational Behavior;
- Business Law;
- International Business.

We administer one assessment exam, each semester, in both the finance course and the strategy course. Exam topics are rotated each semester. We give the ETS Major Field Exam, in the strategy course, every fourth semester.

With each exam administration, students complete a demographic and control variable survey. Information gathered via this survey, plus information available from the campus information system, is used to construct the following control variables.

- Elapsed time since completion of course being assessed (semesters, months).
- Grade earned in course being assessed.
- Instructor of course being assessed.
- High school quality metrics (GPA, Rank, SAT/ACT scores)
- College quality metrics (Overall GPA, Major GPA)
- Student transfer status (transfer student, native student).
- Course transfer status (course being assessed taken locally or transferred)
- Hours worked outside of school each week
- Enrollment status (Part-Time, Full-Time)
- Major (Accounting, Finance, International Business, Management, Marketing, Prelaw)
- Gender
- Nontraditional student (age >25)
- Race/Ethnicity
- Total credit hours completed

Additionally, in cases where the course being assessed has a sequel, information related to progress in the sequel is used as a control. For example, the introductory statistics course is followed by a second statistics course. Students that have completed the sequel or for whom the sequel is in progress, could be expected to do better in an assessment of the foundation course, due to review and reinforcement of foundation topics. For us, this impact is limited to the introductory statistics course and the business law course.

Finally, the math skills assessment includes a self-assessment item for "math skills", where students self-report their math skills using the following scale:

1= very poor 2= poor 3=average 4=good 5=very good

Results and Discussion

Exhibit 1 conveys results from a regression analysis of control variables and assessment results. In all cases, the dependant variable is the students' scores on the assessment exam. The first column conveys the topic assessed and the number of students participating in the most recent administration of the exam. The second column indicates the proportion of variance, in exam scores, predicted by the student's combined (verbal and math) SAT score. The third column shows other control variables that were significant in the regression, with the sign of the coefficient shown in parenthesis. The right-most column shows the incremental contribution to R^2 associated with the significant independent variables, other than SAT. For example, a total R^2 of 0.46 was observed for the Accounting Exam. The bulk of this, 0.34, was due to SAT alone.

Exhibit 1: Variation Explained by SAT Alone and by Non-SAT Control Variables.

Assessment Exam Topic	R^2, SAT Alone	Other Significant Variables	Additional R^2, From Other Variables
Introductory Accounting (n=156)	0.34	GPA (+) Accounting Major (+) Transfer Student (-)	0.12
Introductory Statistics (n=130)	0.27	Gender: Male (+) GPA (+) Transferred course (-) Took/Taking Sequel (+)	0.19
Macroeconomics (TUCE) (n=142)	0.25	Gender: Male (+) GPA (+)	0.08
Microeconomics (TUCE) (n=148)	0.30	Gender: Male (+) GPA (+)	0.09
International Business (n=98)	0.24	Accounting Major (-) Transferred Course (-) GPA (+)	
Corporate Finance (n=119)	0.35	Gender: Male (+) GPA (+) Finance Major (+) Course Grade (+)	0.09
Marketing (n=122)	0.26	Marketing Major (+) GPA (+)	0.15
Business Law (n=136)	0.28	Gender: Male (+) Course Grade(+) Transferred Course (-)	0.30
Math Skills (n=120)	0.29	GPA (+) Self Assessed Math(+)	0.11
ETS Major Field Exam	0.34	Gender: Male (+) Major GPA	0.18

We were surprised by the strength and consistency of SAT as a predictor of performance. The observed R^2 values exceed many of the published results for the impact of SAT on College GPA. The significance of SAT persist regardless of whether the exam was locally developed or proprietary and nationally normed.

We were also surprised by how few of the control variables were always insignificant in predicting assessment results. In particular, the consistent lack of significance for certain control variables is baffling; these include 1) course grade, and 2) elapsed time since completion of the course being assessed. In a number of cases, certain control variables are significant when the analysis is limited to a

single variable, but then these variables drop out when SAT is entered into the regression. For example, simple t-tests comparing transfer and native students sometimes suggest that native students have significantly better assessment exam scores. However, when SAT is included in the analysis, transfer status drops out from the analysis. We were also surprised at the persistence of gender as a significant variable above and beyond the gender bias already incorporated in the SAT scores.

Further research is required to understand the implication of these results and how they should inform an assessment response. There are a number of hypothesis that could be explored. First, since the assessment exams are in a multiple-choice format, SAT scores may simply predict an ability to do well on exams that are in multiple choice formats. Alternatively, the SAT may reflect a student's ability to learn and retain information and concepts. This hypothesis is consistent with the nature of downstream assessments, where success requires longer-term learning rather than short-term memorization.

To the extent that business programs use assessment results as a measure of program quality, it suggests that business programs may want to take another look at SAT as a component of program admissions requirements. Our results suggest that SAT is a substantial and significant predictor of performance on important test such as the ETS Major field exam, which is administered by more than 30% of accredited business programs (Pringle and Michel, 2007).

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LESSONS LEARNED: PREPARING FACULTY TO TEACH IN AN MBA PROGRAM CONDUCTED IN CHINA

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ABSTRACT

In 1991 MBA programs were introduced to China. Since then the number of MBA programs in China have proliferated rapidly. With the globalization of business and the opportunity for an MBA graduate in China to make two and one-half times the salary of a non-degreed worker, the demand for the MBA degree continues to grow. Benedictine University sought and received permission in early 2004 from the Ministry of Education of the People's Republic of China and the Higher Learning Commission of the North Central Association of College and Schools to partner with Shenyang University of Technology to offer their MBA degree. This paper is a case study focusing on methodologies used to prepare faculty to teach in China, identifying the challenges faculty have encountered over the past six years and exploring opportunities to further support and enhance the andragogical skills of these faculty members.

Keywords: MBA, multi-cultural classroom, China, education, culture

Introduction

In 1991, MBA programs were introduced to China (Johnstone, 1997). Since then the number of MBA programs in China has proliferated rapidly. With the globalization of business and the opportunity for an MBA graduate in China to make two and one-half times the salary of a non-degreed worker (Johnstone, 1997), the demand for the MBA degree continues to grow. Benedictine University sought and received permission in early 2004 from the Ministry of Education of the People's Republic of China and the Higher Learning Commission of the North Central Association of College and Schools to partner with Shenyang University of Technology to offer their MBA degree. Since 2004, the Benedictine China MBA program has extended its program throughout China and into Vietnam and now has agreements with six partner universities in China and two partner universities in Vietnam. This paper is a case study focusing on methodologies used in Benedictine University's MBA program to prepare faculty to teach in China, challenges faculty may encounter, and opportunities to further support and enhance the andragogical skills of these faculty members.

Benedictine's MBA program is conducted as a partnership with various Chinese mainland universities. There are currently over 500 active students in the program and approximately 200 graduates of the

China MBA program. The MBA program curriculum is identical to Benedictine's MBA program offered in the U.S., which is approved by the North Central Association of the Higher Learning Commission. Students in the Chinese MBA program are required to take a total of sixteen courses: six foundation courses (leadership, ethics, financial accounting macro economics, etc.), seven managerial progress courses (managerial accounting, micro economics, marketing, strategic management, etc.) and three prescribed elective courses. On average, thirty-two faculty members are deployed overseas annually. However, with the expansion of this program into Vietnam, this figure is growing. Benedictine faculty teach eight of the required courses. These eight courses are considered the "softer side" of the MBA: Organizational Behavior, Leadership and Ethics, Entrepreneurship, and Strategic Management. Classes taught by the Benedictine faculty are conducted in English. The partner university teaches the more quantitative courses in the MBA curriculum such as financial accounting, economics, and financial management. Each course requires 30-35 contact hours and is held either in a two-weekend (Friday, Saturday, Sunday) format or a seven-day evening format.

Benedictine's China MBA is structured as a cohort program with class size ranging from fifteen to thirty students. Students progress through the curriculum in "lock step" fashion which allows students to form and maintain learning teams that provide essential peer support throughout the program. Students accepted into the program are required to attain a TOEFL score of 500 and have a cumulative GPA the equivalent of 2.0. Students are generally middle-level managers with two or more years of working experience in the government sector or state operated enterprises. Students are expected to spend an additional four to six hours per day studying the material. Each cohort completes the entire course of study in 18-24 months.

The goal of all MBA programs is to develop reflective, critical, and analytical skills (Debowski, 2005). The academic experience of Chinese students stresses finding the "correct" solution or the "right" answer. Consequently, reflective thinking tends to be a new concept for Chinese students, so a reflective learning strategy needs to be present in each course.

Faculty best suited for the China MBA program are those who are not only passionate about their area of expertise but are comfortable in a dynamic environment and can be flexible in their instructional style. Faculty with prior overseas teaching experience are preferable but there are many outstanding academic/practitioners with limited multi-cultural classroom experience who have much to offer the China MBA students. Consequently, the China MBA program administration has established a robust support structure for faculty. All faculty entering the program are provided with pre-deployment support in the form of a mentor and orientation to the program. New faculty are paired with a "seasoned" faculty member who has taught the course that the new faculty member will be teaching. This enables faculty to share experiences and techniques that have been successful and identify challenges the new faculty member may encounter when teaching in China. Faculty are regularly debriefed upon their return, and feedback is provided by the faculty member regarding travel and dealing with partner administration. In addition, classroom logistics are captured and help provide insightful content for faculty orientation sessions. In addition to this pre-deployment support, faculty

are offered three workshops annually. The workshops deal with program updates, training on classroom management tools (Blackboard and PeopleSoft), classroom management techniques and the use of Learning Kits. These workshops also provide a networking opportunity for faculty to share experiences with each other and pose questions regarding how best to handle situations encountered in the classroom. An international teaching certificate to be offered in 2010 to faculty teaching in the China MBA program is currently in development. All faculty teaching in China will be required to successfully complete this certificate. The certificate is designed as a four-course program dealing with topics such as teaching philosophy-East vs. West, psychology of adult learning, effectively using instructional technology tools, and instructional practices in the multi-cultural classroom. It is felt that this certificate will establish a level of international classroom competency that will enhance the quality and rigor of the China MBA program.

Another tool provided to faculty is called Learning Kits, which were developed to ensure curricular consistency and quality. A Learning Kit is developed for each course and contains a syllabus (a separate syllabus is provided for the weekend format and the evening, weekday format), PowerPoint lecture slides, test banks, case studies and instructor notes. The Learning Kit is maintained on a faculty Blackboard site so it is accessible anywhere in the world, making it convenient for faculty to use. The syllabus, PowerPoint slides, exams, and case studies are translated into Mandarin. Faculty may choose from these materials based on the topics being covered and on the knowledge level and interests of the student in each particular course. The Learning Kit allows faculty ”to get up and running” in a shorter period of time.

There was concern that the Learning Kit would impinge upon faculty’s academic freedom. Because the MBA curriculum is approved by the Ministry of Education of the People’s Republic of China, there is minimal ability to alter the course content and textbooks. Consequently, the very nature of this program limits faculty’s academic freedom.

One of the challenges lies with the translated materials. The program is taught in English by Benedictine faculty. Due to the accelerated nature of the courses, faculty and administration realized that it was important for students understand the readings and lecture notes as quickly as possible to be better prepared for class and contribute meaningfully to the discussions. Initially, all the translations were handled in the U.S. by Mandarin speaking faculty and outside translators. Unfortunately, as a result of varying dialects throughout China, some of the translations were not as effective as administrators had hoped they would be. Consequently, it is important that the China partner handle the translations so that the materials will be in a dialect familiar to the students. Due to the cost of translating the materials, the Chinese partner is often reluctant to assist with the translations. Currently, more effective ways of handling the translations are being investigated.

Each class taught by Benedictine faculty is equipped with a translator provided by the partner university. This translator has an MBA or PhD in the area being taught. Benedictine faculty are encouraged to meet with the translator one to two days prior to the start of class to ensure clarity of the translations and to

discuss the content being covered. The translator can often assist with developing case studies that employ real life examples from or state operated enterprises.

Faculty are encouraged to provide students with a glossary of terms prior to the start of the course so that definitions can be clarified if necessary at the onset of the class. Faculty are cautioned not to use slang or colloquial expressions. Too often students will try to emulate these colloquialisms and rarely apply them appropriately. Faculty are reminded that in global business one cannot always be certain of the audience's level in understanding idioms so it is preferable to eliminate such idioms when possible. Also the use of contractions is discouraged, particularly in written material, as contractions do not translate well.

Classroom management presents its own unique set of opportunities and challenges for faculty in the China MBA program. In each cohort there is a class leader or spokesperson, generally the individual most fluent in English, who can be helpful in translating instructions or alerting faculty if there is confusion in communication. This team spokesperson can also assist faculty to ensure that the team stays "on topic" during team discussions. The administration of exams has also raised an interesting classroom management issue. Faculty has found that multiple-choice exams are useful to validate the students understanding of key concepts. Faculty discovered that one or two-word answers could often be misinterpreted by students, resulting in the selection of the incorrect answer. Initially faculty used the translators to translate the multiple answers; unfortunately, it was found that the translator would emphasize the correct answers. Faculty now allow students to provide a one to two sentences rational as to why they selected their specific answer. Faculty found that they could better assess student learning using this method since the student's rational can demonstrate that they understand the concept but that the student simply failed to translate the multiple-choice answer correctly.

It is important for faculty to understand Chinese culture. This is a culture in which knowledge is something to be shared, and it is a culture that places a strong emphasis on excelling. Consequently, issues regarding academic honesty have come up occasionally. Some issues are similar to those found in U.S. classrooms regarding electronic devices brought into class and covertly used during exams. Simply requiring students to leave their device with the faculty member prior to the exam alleviates the problem. Occasionally, more unique issues arise. One of the more interesting issues is related to students sending a surrogate to take the course. These surrogates not only sit in on the class, but also participate in team activities and take the exams. Since faculty are not alerted, they are led to believe the surrogate is the enrolled student. This has occurred frequently and faculty are now provided with attendance sheets with photos of each student. Faculty are also encouraged to take attendance several times during the course to ensure students have not left during the breaks.

The Asian classroom traditionally uses the lecture method versus the Socratic method. The first time Chinese students are exposed to the Socratic method is often in the Benedictine MBA program. Based on the Chinese cultural learning style, faculty should realize that a lack of assertiveness on the part of individual students or on the part of the team does not necessarily convey understanding or agreement

(Haight, 2001). Instead, acquiescence may simply reflect politeness. It is important for faculty to remember that there is deference to the authority of the instructor and a reluctance to openly challenge the opinion of others as it may result in a loss of face for the student being challenged (Flowerdew, 1998). It is also important to remember that faculty is in a communistic society and in encouraging one student to challenge another may result in a student challenging a high ranking party official. This action can have serious repercussions for the student's personal and professional life. Faculty need to employ instructional techniques that foster critical thinking without causing students to lose face. Faculty may introduce a variety of contrarian perspectives to stimulate discussion, or offer alternative courses of action in case studies that allow students to debate the merits of each alternative. The focus is shifted from challenging one student against another to arguing the merits and weaknesses of a concept. Flowerdew (1998) suggests the use of group work to draw on the Confucian value of cooperation. Faculty is encouraged to allow students to present projects and findings as a team. This allows students to practice presenting in English in the supportive environment of the team.

Case analysis is another concept that is relatively new to Chinese students and a methodology generally not used in Chinese education. In the first course taught by Benedictine faculty, Leadership and Ethics, students are given an introduction into the case method. Culturally sensitive textbooks that include case studies of Chinese firms initially were difficult to locate. Faculty worked with the academic translator to develop relevant case studies. Fortunately, case studies of Chinese firms are more prevalent today. Since many Chinese MBA students will work for a global organization, students must have an understanding and appreciation for Western, Asian and European business practices. It is the responsibility of faculty to find a good balance between cases focusing on both global and Chinese businesses.

The final challenge in conducting an overseas educational program relates to logistical constraints resulting from time, communication, and distance. In U.S. MBA classrooms, pre-class assignments are commonplace. Benedictine faculty encountered difficulties in having Chinese students complete the pre-class readings and assignments. Whether this is due to cultural issues, a delay in the issuance of syllabi and texts, or communication failure is unclear. In retrospect, the failure appears to relate to a combination of these factors. Consequently, faculty should not anticipate that the students would have read the text or the syllabus. Faculty should also be cognizant that access to the Internet in China is limited by the government. Often in the U.S. MBA classroom, we will refer students to various websites as a resource; however, in China these sites may be inaccessible. Blackboard or some type of course management system can be used to provide easier access to supplemental materials for students. Overall, flexibility on the part of faculty is key. For instructors that prefer to follow defined course content, differ little from the syllabus, and cover the exact quantity of material in the initial lesson plan, this environment may not be optimal. Benedictine faculty encountered situations in which the students were provided a different textbook. Instructors faced with this situation found it necessary to adjust and re-sequence their PowerPoint slides, discussion, and activities to flow better with the alternate text. Faculty had less then 24 hours to make these adjustments.

Students are very interested in U.S. culture. Faculty should anticipate questions regarding American culture, America's views of China, and typical activities of the American family. Students are also interested in high profile topics such as Enron, Madoff, the economy, the banking crisis, and political elections. Although faculty must keep in mind that they represent the University, we encourage them to address these issues factually and, when possible, relate the issues to the topics they are teaching.

There are many opportunities for collaboration and research between Benedictine faculty and the China partner faculty. It is felt that this collaboration will be of benefit to students as well as the faculty. There are plans to offer an opportunity to Benedictine and China partner faculty teaching in the program to meet virtually through video conferencing. Benedictine administration has also discussed connecting Benedictine faculty with faculty at the partner university teaching in the same discipline to see if any natural collaboration for research and publication exists. Benedictine faculty and administration are working to offer an opportunity for U.S. MBA students to take one of their required courses in China with their Chinese counterparts. This international experience will also include visiting state-operated enterprises to provide students with insight into multinational firms. Finally, there has been discussion about allowing those students planning to attend commencement in the U.S. to take the last course, Strategic Management, at Benedictine University. This again offers an opportunity for U.S. and China students to work together in a classroom offering both a broader international perspective.

The China MBA program has been a successful and well-received program. The Chinese MBA students demonstrate an eagerness for knowledge and commitment that is unsurpassed by their U.S. MBA counterparts. Many of the Chinese MBA students attend the May commencement ceremonies and their pride of accomplishment is evident. Benedictine faculty who have participated in the program found it rewarding. Indeed, 100% of the faculty expressed a desire to go back.

The mission of the M.B.A. Programs at Benedictine University is to provide men and women with a collaborative educational experience that imparts superior management skills and best practices while instilling a sense of responsible and personal commitment to continuously improving the leadership of organizations. Benedictine University is dedicated to the education of undergraduate and graduate students from diverse ethnic, racial, and religious backgrounds. We feel that we offer an extensive level of training and support so that faculty can successfully provide the Benedictine students in the China MBA program with a collaborative educational experience which will help these students become successful global leaders. A program of this magnitude takes constant monitoring and refinement, but it has been a program with positive ramifications for faculty and students alike.

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AN EXPLORATORY STUDY OF THE CYBERBULLYING AND CYBERSTALKING EXPERIENCES OF STUDENTS AT A PUBLIC LIBERAL ARTS COLLEGE

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ABSTRACT

This article shows the results of a study of the cyberbullying and cyberstalking experiences of students at a public liberal arts college. A survey was administered online to sophomores, juniors, seniors, and graduate students at the college. The prevalence rates were 10% for cyberbullying and 9% for cyberstalking, shown in the sample of 471 respondents. Traditional age college students under 25 years of age were experiencing and participating in cyberbullying at higher rates than older college students. Prior experience as a victim of cyberbullying in high school was a significant risk factor for cyberbullying and cyberstalking in college implying that students' roles in cyberbullying are maintained from high school to college. The majority of college students are handling cyberbullying incidents themselves rather than utilizing campus resources, but two-thirds of respondents would be more likely to consider reporting an incident if there was a central e-mail address available for reporting incidents.

Cyberbullying Manifests Itself at Colleges

There is limited empirical research about cyberbullying at colleges and universities although there have been many incidents documented in the literature. One of the first highly publicized online harassment incident occurred in 1995 when Jinsong Hu was expelled from the Ph.D. program at California Institute of Technology for harassing another student by e-mail who was his former girlfriend (Harson, 1995). The problem of online harassment has progressed since the mid 1990's. The primary complaint from students and faculty at the early part of the 21st century was harassing e-mail messages, followed by cyberstalking, hacking, mail bombs, viruses, and hijacking (Rogerson, 2002). "Students attack other students, faculty, and administrators on web sites and in chat rooms based on physical appearance,

perceived sexual orientation, intellectual capabilities," "brag about drug and alcohol use", make sexually explicit statements, and post inappropriate pictures taken on campus (Dickerson, 2005).

In 2004 the website Facebook.com was founded. College students revealed pictures and personal information when they created profiles on this site. In October 2005, a Fisher College student was expelled for a Facebook.com post about a campus police officer, "loves to antagonize students and needs to be eliminated" (Schweitzer, 2005). In February 2006, four Syracuse University freshmen were placed in disciplinary probation for their harassing posts about a graduate student who was teaching a course (Pepitone, 2006).

Online College Gossip Web sites

Juicycampus.com was an online college gossip web site that expanded from 60 campuses in May 2008 to 500 campuses in October 2008. Derogatory comments were posted there about physical appearance, ethnicity, race, and implied sexual experiences of students. Many students harassed by those comments felt being humiliated, maligned, and having their reputation tarnished. The website caused controversy on college campuses across the United States. While some students liked the site for entertainment, others found it offensive. There was also disagreement among administrators, parents, and government officials regarding how to address the content of the postings. Students who did not like the site expressed their opposition to the site by complaining to advertisers, creating groups on Facebook.com to protest the site, creating websites to addresses issues about Internet speech, writing editorials in their college newspaper, posting comments directly on Juicycampus.com, filing complaints with their state Attorney General's office, and complaining to college administrators.

When harassing posts were true, the victims could be ostracized within the college community. Leaving campus or dropping out of school was a common reaction. The victims experienced strong emotions such as anger, crying, betrayal, and depression (McNiff, 2008). Much to the relief of college administrators, the web site closed in February 4, 2009 due to financial difficulties. However, the traffic to Juicycampus.com was immediately purchased by Collegeacb.com.

Studies about Online Harassment of College Students

A 2002 study of 339 undergraduate students at the University of New Hampshire revealed that approximately 10% of the participants received "repeated messages that threatened, insulted, or harassed" through e-mail or instant messages. (Finn, 2004) More than half of the respondents received unwanted pornographic messages or pictures (Finn, 2004). The messages were from strangers, acquaintances, and significant others. Only 6.8% of the students who were harassed online reported the incidents. The reasons the respondents cited for not reporting the incidents were that they did not consider the problem serious enough to report (37.5%), did not know who to report it to (12.5%), or handled the problem by themselves (19.5%) (Finn, 2004). Respondents who said they had reported the harassment were more likely to have received the e-mail from strangers and received pornography (Finn, 2004).

A 2004 Rochester Institute of Technology study revealed that 17% of students were harassed online and 8% were threatened (McQuade, 2007). Another study found that 1/3 of 235 undergraduates' experienced online harassment (Spitzberg and Hoobler, 2002). A more recent study by the Massachusetts Aggression Reduction Center (MARC) found that 8% of respondents were cyberbullied by instant messaging and 3% admitted to cyberbullying while in college (Englander, Muldowney, & McCoy, 2009).

Cyberstalking at Colleges and Universities

Cyberbullying can escalate into cyberstalking. Cyberstalking is a "repeated harassment through electronic communication that causes the victim to fear for his/her safety "(U.S. Department of Justice, 2000). Victims of cyberstalking are at risk of physical stalking and physical harm or homicide (United States Department of Justice, 2000). The intensity of the fear and anxiety of cyberstalking is similar to that of stalking in the physical world (Finn, 2004).

Cyberstalking is becoming an increasingly noticeable problem at American colleges and universities (Boyer, 2006). Cyberbullying offenders in high school may be "graduating" to more serious forms of online harassment such as cyberstalking in college. A study of 302 undergraduate and graduate students found that 13% of the students were victims of cyberstalking in college (Paullet, Rota, & Swan, 2009).

Colleges and universities vary in their responses to the problem. Some colleges and universities, in addition to defining terms such as e-mail harassment and cyberstalking (Virginia Polytechnic Institute and State University, 2010), state in their computer acceptable use policies the consequences of online harassment (Read, 2006). Larger universities have central offices for handling complaints and providing support services to victims. The University of Maryland at College Park has Project NEThics (Project NEThics, 2010) that has a central office responsible for handling violations of the university's acceptable use policy (Carlson, 2002). The staff provides information about computer use policies as well as contacts for helping victims of harassment. The office maintains a file for each complaint received. Most cases are handled directly by a staff member. In cases of repeat offenders the office staff may have to contact disciplinary offices on campus or the police.

Method

The purpose of this study was to determine, at a public liberal arts college, the prevalence rate of cyberbullying and cyberstalking, types of cyberbullying and cyberstalking incidents, impact of the cyberbullying incidents on victims, demographic factors of victims, if prior experience as a victim or perpetrator of cyberbullying in high school was a risk factor for victims, and how students would choose to report incidents of cyberbullying or cyberstalking.

A survey instrument was used to collect the data for the study. It was approved by Richard Stockton College of New Jersey's IRB for Human Subjects committee. The format of the survey was designed by

the authors with Zoomerang's online survey tool. There were 69 questions in the survey. The Zoomerang survey tool has a skip logic design feature that allows the survey to administer questions based on answers to previous questions. Most respondents did not have to answer all of 69 questions. Five of the 69 questions were open-ended. The other questions were multiple choice questions. The definition of cyberstalking was given in the survey as follows:

Cyberstalking is a "repeated harassment through the Internet, e-mail, or other electronic communication that causes the victim to fear for their safety" (U.S. Department of Justice, 2000). Technology is used to stalk the victim "with the intention of annoying, alarming, or threatening the victim." (U.S. Department of Justice, 2000). Examples of cyberstalking were given in a bulleted list that included:

1. Mass repeated unwanted e-mails or instant messages
2. Flooding a victim's e-mail account
3. Monitoring the victim's computer activity with a Trojan Horse or keylogger program.
4. Hijacking the victim's computer
5. Following a victim online
6. Damaging a victim's computer by e-mailing them a virus
7. Stealing the victim's identity by electronic means
8. Posting the victim's personal information in a on a website, in a chat room, on a message board, listserv, or Usenet group

This list was adapted from research conducted by Bocij (2003), Finn (2004), and Williard (2007). The definition of cyberbullying was given in the survey as follows: Cyberbullying occurs when someone uses technology such as e-mail, cell phones, web cameras, or pagers to offend or embarrass others (Aftab, 2010 a). Examples of cyberbullying were given in a bulleted list that included:

1. Sending embarrassing, offensive, or threatening e-mails, instant messages, or cell phone text messages
2. Posting racist, sexist, homophobic, or anti-religious comments online
3. Spreading gossip online
4. Attacking people on web sites and in chat rooms
5. Creating a profile of someone to an online social networking site such as facebook.com or myspace.com without their permission
6. Using someone else's IM screen name or e-mail account to harass others and not be held accountable.
7. Posting embarrassing pictures of another person online
8. Making harassing phone calls using a cell phone

The examples of cyberbullying were adapted from research conducted by Aftab (2010 b.) and Williard (2007) as well as anecdotal evidence seen by the researchers at Juicycampus.com.

The survey was administered online from October 26 to November 15, 2008. It was sent through e-mails to all sophomores, junior, senior and graduate students in Richard Stockton College of New Jersey. Freshmen were not considered in this survey because they did not have sufficient college experience yet. As an incentive for student participation in the study there was a lottery for a $50 gift certificate for Amazon.com. It took students about 30-45 minutes to complete the survey. A total of 5,806 surveys were sent out, and 471 complete surveys were returned.

The majority of the respondents in this study were female (76%) college students. This disproportionableness is consistent with the research finding that females are more likely to respond to an invitation to participate in an online survey (Patchin, 2006). The distribution of respondents' races was 83% white, 5% African American, 4% Asian, 4% Hispanic, and 1% biracial. Most of the participants were at traditional age (under age 25) (80%) and full time students (89%). The participants lived in a variety of settings such as on campus (34%), off campus by themselves (9%), off campus with roommates (13%), living with parents (34%), or living with other family members (6%).

Data and Analysis

Prevalence and Severity Rate

The prevalence rates were 10% for cyberbullying and 9% for cyberstalking, shown in the sample of 471 respondents. The cyberbullying prevalence rate, 10%, was similar to the rate of e-mail or instant messaging harassment reported in the University of New Hampshire study (Finn, 2004), but slightly higher than the 8% rate reported by the study at the Massachusetts Aggression Reduction Center (Englander, 2009). Both cyberbullying and cyberstalking prevalence rates in this study were lower than those reported in the University of Rochester study (McQuade, 2007) and the study of Spitzberg and Hoobler (2002). Of those with cyberbullying experience, 28% were bullied once, 50% were bullied for 2-5 times, 9% for 6-10 times, and 13% for more than 10 times.

About half of the 471 respondents had ever heard of college students cyberbullying (48%) or cyberstalking (50%) other people, 48% of the respondents had ever heard about college students being cyberbullied, and 47% had ever heard of college students being cyberstalked. When asked if cyberbullying was a problem for college students, 57% of the respondents said yes.

Type of Cyberbullying Incidents

Forty-six respondents said they had experienced cyberbullying. They were asked further questions in the survey about the type of incident, its impact, the relationship of the person that had offended them, if the victim told anyone about the incident, and if the victim had sought help from anyone on campus.

Table 1 shows the types of cyberbullying incidents reported by the students in the survey, which are sorted in descending order according to the frequency of occurrences. The focus of prior

Table 1. Types of Cyberbullying Incidents Experienced by Victims

Type of cyberbullying incident	n=46
Text messaging	43%
Received harassing cell phone calls	39%
Instant messages	37%
e-mail	35%
Posts to Facebook.com	22%
Received unwanted pornography	15%
Other, please specify	13%
Racist, sexist, anti-religious, or homophobic comments	11%
Phony profile	11%
Attacked in a chat room	11%
Embarrassing pictures posted to the web	9%
Posts on social networking sites	7%
Posts to JuicyCampus.com	2%

research about online harassment involving college students was on using e-mails and instant messages (Finn 2004; Englander 2009) to harass others. The results in this study indicate that cell phone calls, text messages, and web postings are becoming more frequently used media for cyberbullying.

Most of the victims reported that they knew their offenders. The relationship of the victim to the offender was ex-boyfriend/girlfriend (28%), other students at their college or university (26%), and students from other colleges/universities (26%). This result is consistent with the past finding that ex-intimates are a primary perpetrator of cyberstalking (Bocji, 2003). Only 37% of the victims did not know who their perpetrators were.

The most common theme of the cyberbullying incidents was calling the victim a slut, which was related to about 50% of incidents in the cyberbullying victim sample. Table 2 shows the themes of cyberbullying sorted in descending order of the percents of occurrences. The top five themes of cyberbullying involved are being called a slut, accusations damaging to the victim's reputation, sexism, offensive comments about appearance, and negative comments about intelligence.

Table 2. Themes of Cyberbullying

Did any of the cyberbullying incidents involve	n=46
Being called a slut	50%
Accusations damaging to reputation	35%
Sexism	35%
Offensive comments about appearance	30%
Negative comments about intelligence	28%
Offensive comments about weight	20%
Accusations about being a homosexual	20%
Other, please specify	17%
Racism	9%
Anti-Semitism	7%
Other anti-religious comments	4%

Impact of Cyberbullying Experiences on Victims

Table 3 lists the emotions experienced by the victims, ranked according to the percentage of victims who had the feelings. The most common emotions experienced by the victims included

Table 3. Emotions Experienced by Victims of Cyberbullying

Emotions	n=46
Anger	72%
Frustration	63%
Upset	52%
Felt Hurt	48%
Humiliated	39%
Distressed	37%
Sadness	35%
None of these emotions	15%
Depression	15%
Other, please specify	7%
Experienced suicidal thoughts	2%

anger, frustration, feeling upset, hurt, humiliated, distressed, and sad. These feelings were consistent with the results of the studies of Beran & Li (2005) and Patchin & Hinduja (2006) that the most common feelings for victims of adolescent cyberbullying were anger, sadness, frustration, and fear. According to research done by Beran & Li (2005) and Patchin & Hinduja (2006), victims of adolescent cyberbullying victims suffered more serious effects such as clinical depression, fear of going to school, and declining school performance; a few even committed suicide. In this study, respondents reported similar effects such as depression, grades dropping, and suicidal thoughts. In their responses to the open ended questions victims reported feeling stressed about the incidents, annoyed, and being afraid or scared. Since 20 of the 46 cyberbullying victims claimed to be cyberstalking victims, the findings about cyberbullying are also consistent with the definition of cyberstalking given by U.S. Department of Justice

(2000) which characterized cyberstalking to have the" intention of annoying, alarming, or causing the victims to fear for their safety" (U.S. Department of Justice, 2000).
The length of time of the effect of a cyberbullying incident on a victim varied. Twenty- four percent of victims in this study experienced a short term effects of less than a day, 22% said the incident affected them for up to one week, and 13% reported the incident affected them for as long as one month. Long term effects of one to three months were reported by 7% of the victims, four to six months by 11%, and seven to twelve months by 11% of the victims.

Over-25 students vs. under-25 students

In this study, students in two age groups, over 25 and under 25 (including at 25), were compared based on their cyberbullying and cyberstalking experiences. There were 92 respondents who were older than 25 years old and were placed the over-25 sample. The remaining 379 respondents were placed in the under-25 sample. The researchers hypothesized that there would be differences between the two groups with their demographics, cyberbullying and cyberstalking experiences in high school and college as well as their use of social networking sites. Statistical hypothesis testing was used to evaluate the significance of the percent differences between the two samples. The null hypothesis for a factor, such as social networking usage, for example, is that the two age groups have the same percentage of students who visit social networking sites. The p-value was calculated by using the method for statistical inference for the difference of two sample proportions with different sample sizes. The null hypothesis is rejected if the p-value is less than 0.05. Rejecting the null hypothesis implies that a significant difference exists between the two groups.

Table 4 shows the statistical results of comparing the two age groups based on demographic factors, cyberbullying experiences, and social networking usage. There was a statistically greater percentage ($p=0.031$) of students in the under-25 sample (11%) than in the over-25 sample (5%) who had experienced cyberbullying victimization in college within the past year. This result shows that younger students tend to be cyberbullied in college. In terms of cyberstalking experience, the two age groups did not show a significant percent difference.

The reasons why a greater percentage of students under 25 experienced cyberbullying in college were investigated through an analysis of other factors besides age. The results in Table 4 show that the percent of the under-25 group are significantly higher than that of the over-25 group for six possible risk factors. The significant factors are:

1. Being a full-time student (96% for under-25 vs. 46% for over-25)

2. Living on campus (41% for under-25 vs. 3% for over-25)

3. Experiencing cyberbullying in high school (18% for under-25, 4% for over-25)

4. Participating in cyberbullying in high school (6% for under-25, 1% for over-25)

5. Having a social network account (88% for under-25, 49% for over-25)

6. Visiting a social network 14+ times a week (35% for under-25, 13% for over-25)

Table 4. Over Age 25 Sample vs. Under Age 25 Sample

Factor	Over Age 25 Sample (n=92)	Under Age 25 Sample (n=379)	p-value	Is Percent Difference Significant
Female	71% (65)	77% (291)	0.249	No
Transfer Student	13% (12)	15% (55)	0.613	No
Full-Time	46% (35)	96% (364)	**<0.001**	**Yes**
Live on Campus	3% (3)	41% (159)	**<0.001**	**Yes**
White Race	87% (80)	82% (309)	0.214	No
Experienced Cyberbullying in College	5% (5)	11% (41)	0.031	Yes
Experienced Cyberstalking in College	8% (7)	9% (34)	0.754	No
Experienced Cyberbullying in High School	4% (4)	18% (67)	**<0.001**	**Yes**
Participated in Cyberbullying in High School	1% (1)	6% (24)	**0.002**	**Yes**
Have a Social Networking Account	49% (39)	88% (335)	**<0.001**	**Yes**
Visit a Social Networking Account 14+ Times per Week	13% (6)	35% (117)	**<0.001**	**Yes**

Some of the above risk factors may be contributing factors to interpret why younger students were more likely to be cyberbullied while other factors may not. Older students may have family responsibilities that consume their time not allowing them to be full time students or surf the Internet. They may find on campus living accommodations are not suitable for their lifestyle. Adults under the age of 25 are more frequent users of social networking accounts which possibly explain why there are a higher percentage of students under 25 than over age 25 that have social networking accounts and check them more than 14 times a week. Cyberbullying did not exist or was only starting when students over 25 were in high school so it is likely that a greater percentage of students under 25 than over age 25 would experience and participate in cyberbullying while in high school. There may be other risk factors that were not investigated in this study that might interpret why a greater percentage of younger college students were harassed.

Comparing Victims of Cyberbullying with the Regular students

The regular sample was the sample with all the participants Of 471 respondents, there were 46 students that reported cyberbullying victimization. Table 5 compares the responses of the sample of 46 victims with the sample of 471 uncharacterized students (regular students).

Table 5. Regular Sample versus Cyberbullying Victims Sample

Factor	Regular Sample (n=471)	Victims of Cyberbullying (n=46)	p-value	Is Percent Difference Significant?
Under Age 25	80% (379)	89% (41)	**0.070**	**at (p<0.10)**
Female	76% (356)	83% (38)	0.234	No
Transfer Student	14% (67)	19% (9)	0.326	No
Full-Time	89% (421)	95% (44)	**0.049**	**Yes**
Live on Campus	34% (159)	40% (19)	0.427	No
White Race	83% (389)	91% (42)	0.079	**at (p<0.10)**
Experienced Cyberstalking in College	9% (41)	57% (26)	<0.001	**Yes**
Experienced Cyberbullying in High School	15% (71)	41% (19)	<0.001	**Yes**
Participated in Cyberbullying in High School	5% (25)	15% (7)	<0.001	**Yes**
Have a Social Networking Account	81% (380)	85% (39)	0.472	No
Visit a Social Networking Account 14+ Times per Week	23% (123)	36% (14)	0.076	**at (p<0.10)**

The table shows the proportions of respondents in the regular student sample versus the proportions of respondents in cyberbullying sample that reported certain demographic factors, history of cyberbullying experience, and social network access.

There are four p-values that were less than 0.05, which indicate significant differences between the victims of cyberbullying and regular students. The statistically significant factors between the samples were there are a higher proportion of full time students ($p<0.049$), students who experienced cyberstalking in college ($p<0.001$), students who were a victim of high school cyberbullying ($p<0.001$), and students who participated in cyberbullying in high school cyberbullying ($p<0.001$) in the victims of cyberbullying sample than in the regular sample. The significantly higher proportion of full time students in the cyberbullying sample implies that full-time students were more likely to be targets of cyberbullying, which is consistent to the results addressed in the previous section where a greater percentage of under-25 group were full-time students and victims of cyberbullying. The second finding of having a significantly greater percentage of victims of cyberbullying that are also victims of cyberstalking, compared to regular students shows the significant correlation between cyberbullying and cyberstalking. The third finding of a greater percentage of the victims of cyberbullying, compared to regular students, had been cyberbullied in high school demonstrates that victims in high school tended to be victims also in college. Finally, the results show that a greater percentage of cyberbullying victims, compared to regular students, had participated in cyberbullying in high school. That is, victims of cyberbullying in college were more likely to be cyberbullying offenders in high school, compared to ordinary students in college.

Cyberbullying and bullying are often interrelated with cyberbullying being an extension of in school bullying (Beran, 2007). Past research of traditional bullying suggests that the students who are bullies, victims, and bully victims in elementary school maintain these same roles in high school and college

(Chapell et al, 2006). Research of students who were bullied in college found there is a positive correlation between having been bullied in college and bullied in high school in the physical world (Chapell, 2006). The data from our study suggest that roles in cyberbullying may be maintained over time similar to roles in traditional bullying. Further research is needed to investigate this phenomenon.

In addition to the four factors with p-values less than 0.05, there were three factors with p-values between 0.05 and 0.1 which can be called risk factors with some-significance. These factors are being under age 25 ($p<0.070$), of the white race ($p<0.079$), and visiting a social network account more than 14 times per week ($p<0.076$). The proportion differences between the samples for these factors should be investigated in further research as these could also be risk factors. The finding that a greater percentage of victims were under 25 years old, compared to regular students ($p=0.07$) was consistent with the result discussed in the previous section that age could be a risk factor for experiencing cyberbullying. Note that the percent difference for having access to a social networking account was not significant ($p=0.472$). This implies that having access to a social network was not a risk factor for being cyberbullied; but highly frequent visits to a social network would increase the stake of being cyberbullied.

Comparing cyberstalking victims to regular student group

Table 6 compares the sample of 41 victims with the sample of 471 uncharacterized students (regular students). It shows the proportions of regular student sample versus the proportions of the cyberstalking victims sample for demographic factors, history of cyberbullying experience, and social network access. Of 471 respondents, there were 41 being cyberstalked. The p-values, calculated by using the method for statistical inference for the difference of two sample proportions with different sample sizes, were used to make judgments of whether a sample proportion difference is of statistical significance or merely due to randomness of sampling.

Table 6. Regular Sample vs. Cyberstalking Victim Sample

Factor	Regular Sample (n=471)	Victims of Cyberstalking (n=41)	p-value	Is Percent Difference Significant?
Under Age 25	80% (379)	83% (34)	0.626	No
Female	76% (356)	80% (33)	0.541	No
Transfer Student	14% (67)	17% (7)	0.622	No
Full-Time	89% (421)	95% (30)	0.105	No
Live on Campus	34% (159)	34% (14)	1.000	No
White Race	83% (389)	82% (34)	0.873	No
Experienced Cyberbullying in College	9% (41)	63% (26)	<0.001	**Yes**
Experienced Cyberbullying in High School	15% (71)	41% (17)	0.001	**Yes**
Participated in Cyberbullying in High School	5% (25)	15% (6)	0.078	**At (p<0.10)**
Have Social Networking Account	81% (380)	85% (35)	0.495	No
Visited Social Networking Account 14+ Times per Week	23% (123)	49% (17)	0.001	**Yes**

There were three p-values in Table 6 which are less than 0.05, indicating significant differences between the cyberstalking victims and regular students. These factors were the percentage of students in the cyberstalking victims sample that reported they experienced cyberbullying in college ($p<0.001$), experienced cyberbullying in high school ($p< 0.001$), and visit a social networking account more than 14 times per week ($p<0.001$) is significantly greater than the percentage of students in the regular sample for these factors. The finding that there were a greater percentage of cyberstalking victims that were cyberbullying victims, compared to the regular students shows the significant correlation between cyberbullying and cyberstalking.

The exact reasons behind why there is a greater percentage of cyberstalking victims, compared to regular students and had cyberbullying experience in high school requires further research to investigate. In the prior section it was proposed that roles in cyberbullying may be maintained over time similar to roles in traditional bullying. The intensity of victimization in cyberspace could escalate from high school to college. Hence, the victims of cyberbullying in high school may be experiencing cyberstalking as a more serious form of victimization in college. The third finding was that a greater percentage of cyberstalking victims visited the social networking accounts fourteen times or more in a week, compared to regular students implies the relationship between the frequentness of visiting the social networking accounts and likelihood of being cyberstalked.

In addition to the above three risk factors with p-values less than 0.05, the proportion of cyberstalking victims that participated in cyberbullying in high school has a p-value between 0.05 and 0.1 which can be called a risk factor with near-significance. The proportion difference between the samples on this factor calls attention to a possible area for future research although it is not yet statistically significant. The finding implies that cyberbullying offenders in high school are more likely to be cyberstalking victims in college, compared to regular students.

Victims' Reporting Incidents

This study shows that 20% of cyberbullying victims did not tell any one about the incident. Most victims of cyberbullying said that someone helped them cope with the cyberbullying problems, who were their friend (72%), parent (39%), significant other (30%), brother or sister (20%), and same age relative (11%). Less than 10% of respondents sought help from the campus resources such as a professor (9%), the counseling center (7%), college administrator (4%), campus police (2%), and computer services (2%). The primary reason respondents gave for not seeking help from anyone on campus was that they handled the problem themselves (60%). Other reasons cited were they did not think the incident was serious enough to report (22%), they did not know who to report it to (18%), and they did not think the college would do anything about it (18%).

In the open ended questions respondents reported a couple of ways that they handled the incidents by themselves. These measures included blocking messages, changing e-mail address, and changing phone numbers. Some respondents said that talking with friends helped them solve the problem.

All of the respondents were asked how they would prefer to report a cyberbullying or cyberstalking incident. Over half (52%) of the respondents would send e-mails to a central email address, 21% would report it to an office on campus designated to handle cyberbullying and cyberstalking incidents, and 13% would call an anonymous hotline. Only 8% of respondents said they would report the incident to campus police (8%). And fewer students would report to other campus resources such as computer center (3%), a professor (2%), or the counseling center (1%). Students said that they would be more likely to report if a central e-mail address were available specially for handling cyberbullying or cyberstalking incidents.

Discussion

The Sample

The sample in this study was taken from one public liberal arts college. The findings are for cyberbullying and cyberstalking status in this particular liberal art college, which are not supposed to be generalized to all college and university students. In addition, the sample was a convenience sample because it was composed of the students who chose to finish the survey. Such a convenience sample may have some features disproportional with the population. The sample in this study, for example, was disproportionably represented by female students. Therefore, not all the findings are necessarily representative of the entire student body.

Definition of Cyberbullying and Cyberstalking

In the survey, the definitions of cyberbullying and cyberstalking were provided, and victims of cyberbullying and cyberstalking were asked to describe their experiences. It was found that victims of cyberstalking provided more detailed descriptions of their experiences than the victims of cyberbullying. There were 26 respondents who reported both cyberbullying and cyberstalking experience, of which 15 students reported the same incident for both cyberbullying and cyberstalking in the open ended question. That phenomenon can be addressed by the research result of the Finn (2004) who believed that college students do not understand the term cyberstalking. It may also be caused by the complication that an incident started with cyberbullying might have escalated to cyberstalking. On the other hand, there were 26 participants in the study who seemed to understand the terms cyberbullying and cyberstalking well. They either provided proper and different examples for their cyberbullying and cyberstalking experience, or clearly identified only a cyberbullying or cyberstalking incident.

Future Research

Some other sampling methods than the convenience sampling could be utilized to improve the sample's representativeness. A survey could include students from several colleges and universities to extend its representativeness. Students' understanding of the definitions of cyberbullying and cyberstalking could be investigated so as to make survey results more accurate. The correlation between cyberbullying in

high school and in college could be further studied. A detailed profile of the college cyberbullying could be established to help preventing it from happening.

Concluding Comments

This study has found that cyberbullying does not end in high school. In fact, participating in cyberbullying and being victims of cyberbullying in high school were significant risk factors for later experiencing cyberbullying in college. A possible explanation is that students roles in cyberbullying are maintained from high school to college similar to their roles in traditional bullying being maintained over time (Chapell, 2006). This study has also found that college students are experiencing cyberbullying predominately with calls and text messages from cell phones. The study by Finn (2004) did not find significant differences in age, race, class standing or residence for differences in online harassment (Finn, 2004). This study discovered correlations between cyberbullying experience and some factors like age, race, and social networking account access in a liberal arts college.

This study shows that college students are primarily handling cyberbullying incidents by themselves by blocking messages, and changing email addresses or cell phone numbers. They are seeking help from friends, parents, siblings, and significant others to cope with cyberbullying and cyberstalking incidents instead of using campus resources.

The majority of respondents in this study reported that they would like to report incidents of cyberbullying and cyberstalking stalking to a central e-mail address and almost two-thirds of the respondents said they would be more likely to consider reporting an incident if this resource was available. This is an important message for colleges and universities. Having a central e-mail address, which is low in cost and easy to implement, seems to be an effective measure of helping students handle cyberbullying incidents.

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DEMAND FOR JOB TRAINING PROGRAMS IN ILLINOIS: EVIDENCE FROM THE ILLINOIS POLICY SURVEY DATA

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ABSTRACT

The primary goal of my research is to examine how the demand for Job Training Programs varies among various income groups across Illinois counties. I want to investigate if there is a U-shaped relationship between income and demand for Job Training Programs. Theoretical framework of this model: At very low levels of income, demand for Job Training is high and as income rises, people demand less Job Training. At very high levels of income, perhaps because of altruistic motive, people demand increased levels of spending for Job Training programs. I also examine the influence of socio-economic and other demographic factors which might influence the demand for welfare programs. In my model, I also include regional unemployment rates as a proxy for local economic conditions—to investigate how local economic conditions might affect the demand for Job Training Programs.

I use survey data from Northern Illinois University's Social Science Research Institute for my empirical analyses. I employ probit equation in my research. The categorical variable (that is the dependent variable – demand for Job Training Programs) is of 0 and 1 format; 0 representing individuals who do not want increased spending for Job Training programs and 1 represents individuals who want increased spending Job Training Programs. Husted (1989 and 1990) had used national level data to examine demand for AFDC and food stamp programs on a national level. I limit my study to Illinois. I am using the LIMDEP statistical software.

THE IMPACT OF AACSB ACCREDITED EDUCATION ON MARKET WAGES: DOES IT MATTER?

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ABSTRACT

This paper will address the relationship between the accreditation of business schools, by institutions such as the AACSB, and the economic value of a qualification from an accredited school for a student – most particularly, in the starting salary such a student is able to command. The benefits of accreditation remain uncertain. Currently, there is a hole in the accreditation literature in this regard. If in fact, accreditation doesn't improve educational quality, then the benefits of seeking accreditation are uncertain or perhaps even nonexistent. Thus, the accreditation process might be viewed by skeptics as a means of increasing the compensation of professors. As such, the process of seeking accreditation might be viewed as a rent seeking exercise on the part of the business school. Specifically, the budgetary representative of the school can make the case, when at the budget table competing with representatives from different areas of the university, that more of the scarce resources of the university are needed by the business school to pursue accreditation and improve quality. Basic statistical techniques will be employed to estimate the impact accredited business education on starting and mid-career salaries. In comparison to those who have received a business education from an unaccredited school, we seek to estimate the impact of the completion of an accredited business curriculum on wages.

THE EFFECTS OF EARLY CHILDHOOD FAMILY AND LABOR MARKET EXPERIENCE ON ADULT EMPLOYEE ENGAGEMENT AND RETENTION

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ABSTRACT

Retention and engagement of employees, especially young newly hired (1-5 years) employees, are major concerns for all businesses today. Employers continue to create compensation packages, alternative work arrangements, and internal career building opportunities that will satisfy, engage, and ultimately retain their employees. Concurrently a growing body of social science literature points to the relevance and significance of early childhood family and work experiences as precursors and predictors of adult labor market success. This study utilizes a sample of approximately 4,000 25-28 year old men and women from the National Longitudinal Survey Youth 97 to examine employee engagement as measurements of job satisfaction (employee assessment) and promotion (employer assessment). The 11 years of longitudinal data allows the researcher access to current and early demographic and labor market variables. Two major hypotheses are tested: 1) are employees with certain childhood experiences more/less likely to be satisfied with their jobs? (Employee assessment); 2) are employees with certain childhood experiences more/less likely to be promoted? (Employer assessment) The findings from this exploratory empirical work demonstrate the potential importance of early childhood family and work experiences for both employee assessment, job satisfaction, and employer assessment, promotion as well as the need for fairly sophisticated econometric modeling to ensure appropriate estimation and resultant interpretation. The paper concludes with a call for corporate responsibility; for strategic intervention long before recruitment and construction of compensation packages; for a reallocation of corporate resources away from internal programs which such issues as intergenerational differences towards externally targeted programs designed to reach children, their families and their communities.

AN OVERVIEW OF THE U.S. OLIVE INDUSTRY AND THE NEED TO REDUCE LABOR COSTS

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ABSTRACT

The U.S. olive industry is faced with intense global competition from international olive producers and processors. The volume of imports has increased steadily as foreign producers have been able to offer their product at a lower cost. The single biggest advantage that our international competitors have is low cost labor to harvest their olives. Although most of the jobs involved in U.S. food production have become highly mechanized in the U.S., table olives continue to be picked exclusively by hand. Hand harvesting of table olives is still common because there is less fruit damage, and growers are assured of high fruit removal efficiency. California farmers produces around 99% of the total U.S. output with a farm gate value of around $60,000,000 worth of table olives with a total processed and canned value of approximately $220,000,000. This entire production and sales are at risk unless the California producers can lower their costs to be more competitive. Mechanically harvesting the crop is seen as the best opportunity to make a significant cost reduction and stay competitive. This presentation will provide an overview of the olive industry and provide a detailed discussion of the current efforts to reduce harvest costs by developing new techniques for mechanically harvesting olives.

USING ANOVA TO ANALYZE ECONOMIC DISPARITY: A CASE STUDY OF THE CAPE FEAR REGION, NORTH CAROLINA

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ABSTRACT

Using ANOVA analysis and Levine test, we investigate whether there is evidence of racial economic disparities in 10 counties in the Cape Fear Region of North Carolina. Using Census data 1990-2005, we test the Null hypothesis that per capita income means for Whites, Blacks, American Indians and Asians are equal. Likewise, we test the Null hypothesis that the per capita income growth means for the different races are equal. Empirical results reject the former, but not the latter null hypothesis. Policies are also suggested to correct economic disparities.

Key Words: Economic Disparity, Income Inequality, ANOVA Analysis, Levine Test

Introduction

Need for the Study

Nothing invokes more human emotion, envy, anger and political unrest than income disparities. The news media often reports stories about income disparity among rich and poor, poor and middle class,

males and females, Caucasians and African Americans CEO's and average wage earners, regions within a state and states within a nation.

Income disparity, however, is hard to measure. Thomas Sowell, aptly states" income statistics are classic examples of numbers that can be arranged differently to suggest, not merely different, but totally opposite conclusions". (p.124). Much of the controversy stems from the definition of income, differences in education, age, experience, skills, productivity and movement of people in and out an income brackets a variation in the size of households over time and choices made by income earners regarding where, when and how much to work.

In what follows, we investigate whether or not there is statistical evidence of economic disparities among different races by using data from 10 counties region of a southern state. We test the null hypotheses: (1) the per capita income means for whites, Blacks, American Indians and Asians are equal and (2) per capita income growth means for different races are equal. This is a two- part study. First, using ANOVA, we examine whether or not there is an income disparity among races using a widely accepted definition of income. In a subsequent study, we will use an explanatory econometric model to determine the possible causes of income disparities.

Motivation for this study is three fold: First, next year- 2010- the third decennial census survey will be conducted. It is worth investigating what happened to income disparity among races between two censuses: 1990 and 2000. Second, the counties which we study surround the Fort Bragg Army base which will add billions of dollars and 45,000 people to the regional economy under the Base Realignment and Closure (BRAC). An economic scan of the region with focus on economic disparities will provide a unique perspective to decision-makers regarding how the economic opportunities presented by BRAC can be utilized to correct some of the income disparities. Third, the study will inform the decision-makers whether the trend in economic disparities has improved or deteriorated during the period 1990-2000. The information presented in the study may be used by policy makers to evaluate existing policies and design new intervention strategies to effectively reduce economic disparities.

The study covers 10 counties in the Cape Fear Region. The counties include: Bladen, Columbus, Cumberland, Harnett, Hoke, Lee, Moore, Robeson, Sampson and Scotland. Other counties generally included in the Cape Fear Region were considered beyond the scope of this study.

All data were collected from the federal and state data sources. While the data in most instances are available for 1990, 2000, and 2005, the data for each time interval for each variable are not consistently available. The time series data at the county level by race, sex and age are particularly scarce.

Literature Review

While there are a plethora of national racial disparities studies (see Kopczuk (2009) for a comprehensive listing of references), there are very few regional studies (Lessman (2009), Shen (2007), Thimmaiya (2006), Dholakia (2003), Fang and Dewen (2002), Dapeng (1998), Coulombe (1997)), and even fewer

North Carolina specific studies. We could find one lone study by Renkow (1996) which analyzes the macroeconomic factors that are responsible for earnings growth differences between the rural and unban regions of North Carolina. Renkow found that differences in human capital stocks and local market conditions are primary contributors to the rural and urban earnings disparities during 1970-1990.

Economic Disparities

Disparity in Per Capita Personal Income

While the size of PI is a good indicator of the overall health of a county, the economic health and welfare of the population within each county is best measured by personal income per capita and its rate of growth. The per capita personal income (PCI) is calculated by dividing total personal income of a county by its total population. Since PCI makes adjustments for population, it is a good tool to measure the economic wellbeing of the residents of a county and to compare it over time among counties and across the state of North Carolina. In 1990, only one county in this region (Moore) had a per capita income higher than that of the state. By 2005, Cumberland and Moore counties had also exceeded the state average (see Tables 1-2). In 1990, only four counties (Cumberland, Lee, Moore and Sampson) had income per capita above 80 percent of the state average. By 2005, six counties had income per capita of more than 80 percent of the state average. There was, however, considerable disparity in per capita income levels among counties. In 1990, low income counties (with PCI between $11,000 and $12,999) were Bladen, Hoke and Robeson; middle income counties (with PCI of $13,000-14,999) were Columbus, Harnett and Scotland and high income counties (with PCI of $15,000 and higher) were Cumberland, Moore, Lee, and Sampson.

There was also considerable disparity in growth rate of personal income per capita. During 1990-2000, there was an even split in the growth rate of counties in the Cape Fear Region: five counties (Bladen, Columbus, Cumberland, Harnett and Scotland) reported a higher percentage change in PCI than the regional average, and five counties (Hoke, Lee, Moore, Robeson and Sampson) achieved less than the regional average percentage change (see Table 1). The relative performance of most of the counties in the region declined during 2000-2005 compared to the decade of the 1990's (see Figures 1 and 2). Only two counties (Cumberland and Sampson) had the unique distinction of achieving a higher percent change in PCI than the regional average. All other counties performed below the regional average (see Table 2). The relative performance of counties in this region, however, was not as dismal when compared to the state average during 2000-2005. Six counties (Bladen, Columbus, Cumberland, Harnett, Hoke and Sampson) achieved a greater percentage increase in PCI than the state average. Four counties (Lee, Moore, Robeson and Scotland) performed below the state average.

Table 1: Per Capita Income in all 10 Counties in the Cape Fear Region, 1990 and 2000

Counties	1990	1990	1990	2000	2000	2000	Change (2000 - 1990)	
	PerCapInc	% County Mean	% of NC	PerCapInc	% County Mean	% of NC	PerCapInc	Percent
All								
Mean	14274.3	100.00%	82.77%	22155.6	100.00%	81.85%	7881.3	55.21%
Std dev	2788.3991			4063.75716				
Bladen	12453	87.24%	72.21%	21082	95.15%	77.89%	8629	69.29%
Columbus	13193	92.42%	76.50%	22045	99.50%	81.45%	8852	67.10%
Cumberlar	15056	105.48%	87.30%	23903	107.89%	88.31%	8847	58.76%
Harnett	13341	93.46%	77.36%	21607	97.52%	79.83%	8266	61.96%
Hoke	11403	79.88%	66.12%	17270	77.95%	63.80%	5867	51.45%
Lee	17098	119.78%	99.14%	25169	113.60%	92.99%	8071	47.20%
Moore	20451	143.27%	118.58%	31530	142.31%	116.49%	11079	54.17%
Robeson	11586	81.17%	67.18%	17929	80.92%	66.24%	6343	54.75%
Sampson	15162	106.22%	87.92%	20479	92.43%	75.66%	5317	35.07%
Scotland	13000	91.07%	75.38%	20542	92.72%	75.89%	7542	58.02%
NC	17246	N/A	N/A	27067	N/A	N/A	9821	56.95%

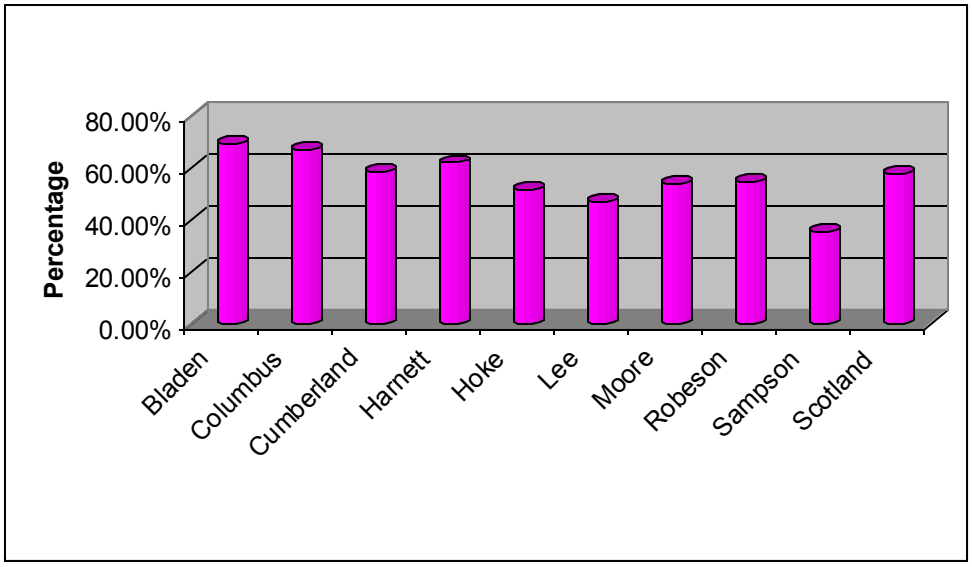
Source: Calculations by Authors; Data derived from the Bureau of Economic Analysis.

Table 2: Per Capita Income in all 10 Counties in the Cape Fear Region, 2000 and 2005

Counties	2000	2000	2000	2005	2005	2005	Change (2005-2000)	
	PerCapInc	% County Mean	% of NC	PerCapInc	% County Mean	% of NC	PerCapInc	Percent
All								
Mean	22155.6	100.00%	81.85%	25903.9	100.00%	83.45%	3748.3	16.92%
Std dev	4063.7572			5059.544				
Bladen	21082	95.15%	77.89%	24304	93.82%	78.30%	3222	15.28%
Columbus	22045	99.50%	81.45%	25319	97.74%	81.57%	3274	14.85%
Cumberlar	23903	107.89%	88.31%	33192	128.14%	106.93%	9289	38.86%
Harnett	21607	97.52%	79.83%	24869	96.00%	80.12%	3262	15.10%
Hoke	17270	77.95%	63.80%	20169	77.86%	64.98%	2899	16.79%
Lee	25169	113.60%	92.99%	27884	107.64%	89.83%	2715	10.79%
Moore	31530	142.31%	116.49%	35575	137.33%	114.61%	4045	12.83%
Robeson	17929	80.92%	66.24%	20429	78.86%	65.81%	2500	13.94%
Sampson	20479	92.43%	75.66%	24836	95.88%	80.01%	4357	21.28%
Scotland	20542	92.72%	75.89%	22462	86.71%	72.36%	1920	9.35%
NC	27067	N/A	N/A	31041	N/A	N/A	3974	14.68%

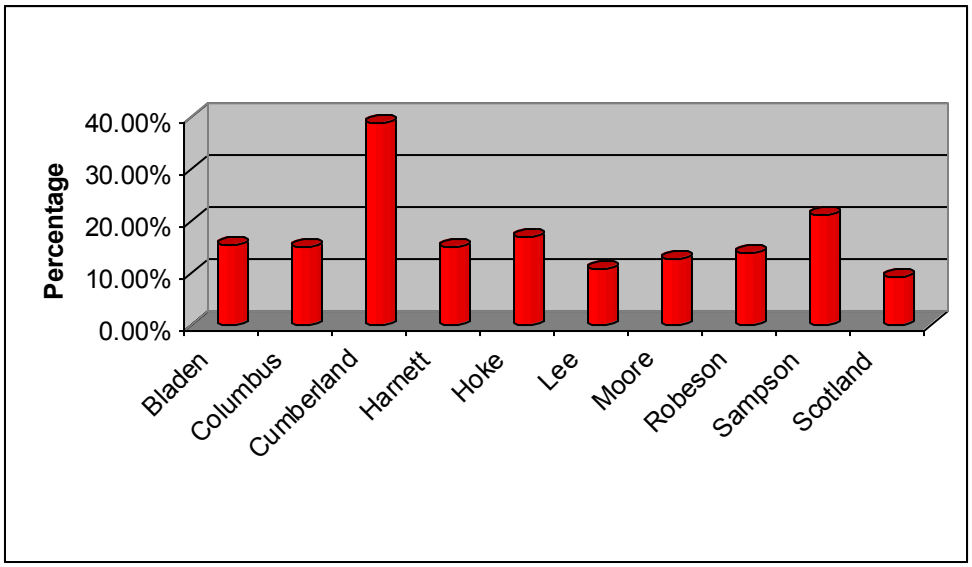
Source: Calculations by Authors; Data derived from the Bureau of Economic Analysis.

Figure 1: Personal Income Per Capita change in all Counties, 1990 & 2000



Source: Derived from Table 1.

Figure 2: Personal Income Per Capita change in all Counties, 2000-2005



Source: Derived from Table 2

What are the implications of the level and changes in personal income per capita for racial disparity? Assuming that the personal income distribution remains the same, the income disparity can be reduced if the counties with a large concentration of African Americans grow their income faster than other counties over a long period of time. The progress has been mixed. During the period 1990-2000, only two counties with a large concentration of African Americans achieved a lower percentage change in

personal per capita income than the regional average. During 2000-2005, per capita personal income growth rates of three counties were below the regional average. Even for those counties that performed better than the regional average, the growth in per capita personal income was less than stellar. Consequently, it is no surprise that there was no change in the relative positions of counties with a high concentration of African Americans.

Empirical Method

In this study we test whether there are Personal Income disparities among whites, blacks, Asians and American Indians. We use the ANOVA to carry out the test. The framework of the ANOVA test is as follows:

H_0: $\mu_1 = \mu_2 = \mu_3 = \mu_4$

Where H_0 is the null hypothesis that tests the population means of Per Capita Income for the four races (White, Black, American Indian and Asian) are equal.

Where, μ_1, μ_2, μ_3, and μ_4 delineate Per Capita Income means for Whites, Blacks, American Indians, and Asians respectively.

The alternative (Ha) is that at least one population mean differs from the other population means.

Ha: $\mu_i \neq \mu_k$ for some *i, k*

Assumptions underlying ANOVA

The three primary assumptions are:

1. The observations are random and independent samples from the populations.
2. The distributions of the populations from which the samples are selected are normal. This assumption implies that the dependent variable (Per Capita Income) is normally distributed (a theoretical requirement of the underlying distribution, is the *F* distribution) in each of the populations.
3. The variances of the distributions in the populations are equal. It is called the assumption of homogeneity of variance. This assumption, along with the normality assumption and the null hypothesis, provides that the distributions in the populations have the same shapes, means, and variances; that is, they are the same population.

Note that ANOVA is robust with respect to violations of the assumptions, except in the case of unequal variances with unequal sample sizes. Therefore, we will use the Levine's test to test for the homogeneity of variance. The null hypothesis for testing the assumption of homogeneity of variance is that there is no difference in the variances of the Per Capita Income averages of the four different races. Symbolically,

$$H_0 : \alpha_1^2 = \alpha_2^2 = \alpha_3^2 = \alpha_4^2$$

Where, α_1^2, α_2^2, α_3^2, and α_4^2 are the variances of the Per Capita Incomes of Whites, Blacks, American Indians, and Asians respectively.

$$H_a : \alpha_i^2 \neq \alpha_k^2$$

For some *i, k*

Testing the Null Hypothesis in the study

We will use ANOVA to test the Per Capita Incomes for Whites, Blacks, American Indians and Asians are equal in other words that there is no difference in the Per Capita Incomes' averages of the different races.

Computational Formulas for Sums of Squares

The computational formulas for **SS_B** (Sum of Squares Between), **SS_W** (Sum of Squares Within), and **SS_T** (Sum of Squares Total) can be derived using the formulas below. First of all, to simply the formulas, it is convenient to denote the sum of all the scores in the k^{th} group as T_k.

$$T_k = \sum_{i=1}^{n_k} X_{ik} \qquad (1)$$

Second denote the sum of all observations in all K groups as T.

$$T = \sum_{k=1}^{K} . \sum_{i=1}^{nk} X_{ik} \qquad (2)$$

Using this notation, the computational formulas for **SS_B** (Sum of Squares Between), **SS_W** (Sum of Squares Within), and **SS_T** (Sum of Squares Total) become, for between groups:

$$SS_B = \sum_{k=1}^{K} n_k \left(\overline{X}_k - \overline{X}\right)^2 = \sum_{k=1}^{K} \frac{T_k^2}{n_k} \qquad (3)$$

For within groups,

$$SS_W = \sum_{k=1}^{K} \cdot \sum_{i=1}^{n_k} \left(X_{ik} - \overline{X}_k\right)^2 = \sum_{k=1}^{K} \cdot \sum_{i=1}^{n_k} X_{ik}^2 - \sum_{k=1}^{k} \frac{T_k^2}{n_k} \qquad (4)$$

For the total,

$$SS_T = \sum_{k=1}^{K} \cdot \sum_{i=1}^{n_k} \left(X_{ik} - \overline{X}_k\right)^2 = \sum_{k=1}^{K} \cdot \sum_{i=1}^{n_k} X_{ik}^2 - \frac{T^2}{N} \qquad (5)$$

Steps for testing the Null Hypothesis

We will adopt the following 4 steps to test the Null Hypothesis:

Step 1: State the Hypotheses

H_0: $\mu_1 = \mu_2 = \mu_3 = \mu_4$

Ha: $\mu_i \neq \mu_k$ for some *i, k*

We are stating in the Null Hypothesis that there is no difference in the Per Capita Personal Incomes among Whites, Blacks, American Indians and Asians. We test this hypothesis at the .05 significance level.

Step 2: Set the criterion for rejecting H_0

The test statistic for one-way ANOVA is the *F* ratio defined as MS_B (Mean Square Between) divided by MS_W (Mean Square Between): MS_B/MS_W. The sampling distribution of the *F* ratio is the *F* distribution. There is a family of *F* distributions, each one a function of the degrees of freedom associated with the two variance estimates. In ANOVA, *K*-1 degrees of freedom are associated with MS_B, and *N-K* degrees of freedom are associated with MS_W. Thus, the sampling distribution of the *F* ratio MS_B/MS_W is the *F* distribution with *K*-1 and *N-K* degrees of freedom, or $\boldsymbol{F_{(K-1,\ N-K)}}$. In ANOVA, the alternative hypothesis does not specify the direction of the group differences; however, the region of rejection in the *F* distribution is only in the right-hand tail because the observed *F* ratio is a ratio of two nonnegative values, the mean squares. Large discrepancies among the sample means yield a large mean square among the groups, regardless of the direction of the differences. Because these discrepancies are squared, direction is lost.

In our study, there are *K*-1 = 4-1=3 degrees of freedom associated with MS_B and *N-K* = 40-4 = 36 degrees of freedom associated with MS_W. The critical value of *F* for 4 and 36 degrees for α = .05 is 2.61. Since we have set α = .05, the Null Hypothesis will be rejected if the calculated *F* exceeds 2.61.

Step 3: Compute the Statistics

We will report the entire summary table for ANOVA, including the sums of squares, degrees of freedom, and mean squares, as well as the *F* ratio in the results' section of this study.

Step 4: Interpret the results

This step includes deciding whether to reject the Null Hypothesis and then providing some clarification about what that decision means in the context of the variables and the setting. The decision about the Null Hypothesis is made by comparing the test statistic, the computed F ratio, with the critical value (2.61). If the computed F ratio exceeds the critical value, the hypothesis is rejected; if not, the hypothesis is not rejected.

Empirical Results

We used SPSS (Statistical Package for the Social Sciences) software to run the various tests. The following coding has been used to run the tests: White = 1, Blacks = 2, American Indians = 3, Asians = 4 .

The following tables summarize the descriptive statistics, the test of homogeneity of variances or Levine's test and the ANOVA results:

Descriptive Statistics Results

The descriptive statistics results for PCI 1990, PCI 2000 and PCI growth 1990-2000 are summarized in Tables 1, 2 and 3 respectively. For instance, for Blacks the mean PCI was $6,673.23 while it was $12, 437.30 for their White counterparts in the year 1990. In the year 2000, the mean PCI for Blacks increased to $11,322.80 while it increased to $19,588.00 for their White counterparts. These income increases resulted in 70% income for Blacks growth between 1990 and 2000 while their White counterparts enjoyed an approximately 57% income growth during the same period. Refer to Tables 3, 4 and 5 for the statistics for the other races.

Table 3: Descriptive Statistics PCI 1990

Race	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	10	12437.30	1683.982	532.522	11232.65	13641.95	10708	16630
2	10	6673.20	850.087	268.821	6065.08	7281.32	5704	8231
3	10	8186.10	2237.665	707.612	6585.37	9786.83	6098	13945
4	10	9300.70	4887.200	1545.468	5804.61	12796.79	4400	20166
Total	40	9149.32	3475.112	549.463	8037.93	10260.72	4400	20166

Table 4: Descriptive Statistics PCI 2000

Race	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	10	19588.00	2840.885	898.367	17555.75	21620.25	17085	26407
2	10	11322.80	1592.937	503.731	10183.28	12462.32	9624	14163
3	10	12368.90	2070.936	654.888	10887.44	13850.36	9708	15746
4	10	15841.60	3030.072	958.193	13674.02	18009.18	10089	20372
Total	40	14780.32	4040.813	638.909	13488.01	16072.64	9624	26407

Table 5: Descriptive Statistics PCI GROWTH 1990- 2000

Race	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	10	.574824	.0752501	.0237962	.520994	.628655	.4481	.6920
2	10	.700395	.1460622	.0461889	.595908	.804882	.3964	.9289
3	10	.589123	.4325129	.1367726	.279722	.898524	-.1679	1.2722
4	10	1.100762	.9416486	.2977754	.427147	1.774376	-.4997	2.8709
Total	40	.741276	.5482951	.0866931	.565923	.916629	-.4997	2.8709

Test of Homogeneity of Variance Results

In table 6, the Levene F statistic (F = 6.276) is greater than the critical value for F ($F_{4,36}$ = 2.61); we reject the null that the different variances are equal, thus, the assumption of homogeneity of variances is not met, in other words at least one population variance differs from the other population variances. The significance value (or p-value) for the Levene's test is .002, which is less than the set a priori α at .05. Keep in mind that even though the assumption of homogeneity of variances is violated in this case, ANOVA is robust with respect to violations of the assumptions, except in the case of unequal variances with unequal sample sizes. Luckily, our sample sizes are equal.

Table 6: Test of Homogeneity of Variance PCI 1990

Levene Statistic	df1	df2	Sig.
6.276	3	36	.002

In table 7, the Levene F statistic (F = .881) is less than the critical value for F ($F_{4,36}$ = 2.61); we cannot reject the null that the different variances are equal, thus, the assumption of homogeneity of variances is met. The significance value (or p-value) for the Levene's test is .46, which is greater than the set a priori α at .05.

Table 7: Test of Homogeneity of Variance PCI 2000

Levene Statistic	df1	df2	Sig.
.881	3	36	.460

In table 8, the Levene F statistic (F = 6.299) is greater than the critical value for F ($F_{4,36}$ = 2.61); we reject the null that the different variances are equal, thus, the assumption of homogeneity of variances is not met, in other words at least one population variance differs from the other population variances. The Sig. value (or p-value) in the printout for the Levene's test is .002, which is less than the set a priori α at .05. Keep in mind that even though the assumption of homogeneity of variances is violated in this case, ANOVA is robust with respect to violations of the assumptions, except in the case of unequal variances with unequal sample sizes. Luckily, our sample sizes are equal.

Table 8: Test of Homogeneity of Variance PCI GROWTH 1990-2000

Levene Statistic	df1	df2	Sig.
6.299	3	36	.002

ANOVA test results

Table 9 summarizes the ANOVA test results of the Null Hypothesis that the Per Capita Mean incomes in 1990 of the different races are equal. The F statistic for the ANOVA (F = 7.352) is greater than the F critical value (F_{cv} = 2.61); therefore the Null Hypothesis that PCI means of the different races are equal is rejected. The probability statement this latter test statistic is "The probability that the observed differences in the sample means would have occurred by chance if this Null Hypothesis were true (that is the population means were equal) is less than .05." The Sig. value (or p-value) in the printout equals .001, which implies that the probability of such an occurrence is actually less or equal than .001. The conclusion is that not all the population means are equal. At this point, we do not know which means differ significantly. This determination will be made using post hoc multiple-comparison tests in future studies.

Table 9: ANOVA Test PCI 1990

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.789E8	3	5.964E7	7.352	.001
Within Groups	2.921E8	36	8112576.964		
Total	4.710E8	39			

Table 10 summarizes the ANOVA test results of the Null Hypothesis that the Per Capita Mean incomes in 2000 of the different races are equal. The F statistic for the ANOVA (F = 23.263) is greater than the F critical value (F_{cv} = 2.61); therefore the Null Hypothesis that PCI means of the different races are equal is rejected. The probability statement this latter test statistic is "The probability that the observed

differences in the sample means would have occurred by chance if this Null Hypothesis were true (that is the population means were equal) is less than .05." The Sig. value (or p-value) in the printout equals .000, which implies that the probability of such an occurrence is actually less than .001. The conclusion is that not all the population means are equal. At this point, we do not know which means differ significantly. This determination will be made using post hoc multiple-comparison tests in future studies.

Table 10: ANOVA Test PCI 2000

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.201E8	3	1.400E8	23.263	.000
Within Groups	2.167E8	36	6019547.247		
Total	6.368E8	39			

Table 11 summarizes the ANOVA test results of the Null Hypothesis that the Per Capita Mean incomes' growth rates between 1990 and 2000 of the different races are equal. The F statistic for the ANOVA (F = 2.202) is less than the F critical value (F_{cv} = 2.61); therefore the Null Hypothesis that PCI means of the different races are equal failed to be rejected, in other words at least one population mean growth differs from the other population means. The probability statement this latter test statistic is "The probability that the observed differences in the sample means would have occurred by chance if this Null Hypothesis were true (that is the population means were equal) is greater than .05." The Sig. value (or p-value) in the printout equals .105, which implies that the probability of such an occurrence is actually greater than .105. The conclusion is that at least two population means are equal. At this point, we do not know which means do not differ significantly. This determination will be made using post hoc multiple-comparison tests in future studies.

Table 11: ANOVA Test PCI GROWTH 1990-2000

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.818	3	.606	2.202	.105
Within Groups	9.907	36	.275		
Total	11.724	39			

Conclusions and Policy Recommendations

This study investigates the economic disparities in the USA by using data from the Cape Fear Region Counties in North Carolina. Data on Per Capita Income and Personal Income for the 10 counties in the Cape Fear Region are obtained from the US Census Bureau and the other institutions. We use an ANOVA analysis to test whether the Per Capita Income Means and Per Capita Income Means growth are equal for Whites, Blacks, American Indians and Asians in the 10 counties.

The ANOVA test reject the Null Hypothesis that the Per Capita Income Means are equal but fail to reject that the Null Hypothesis that Per Capita Income Means growth are equal.

Education is one the most important factors in reducing disparities. Income per capita in the 10 counties closely correlated with the number of college degree holders. The adult education correlation coefficient is 0.8521 for the Cape Fear Region. In a flat world, the most rewarding investment is in human capital. Indeed, the most effective way to reduce disparity within the region and between the races is to reduce the dropout rate and encourage citizens to enroll in higher education. The average drop-out rate in this region is approximately 18 percent, which is three percentage points higher than state and national averages. Further, only 18 percent of adults in this region have college degrees, despite the fact that the difference in the median salary of high school and college graduates is more than $22,000 per year. Liberal Arts education, although important, is not enough. A skilled labor force must have vocational-based training as well as professional degrees that are geared toward careers which are projected to increase in the future. According to the Bureau of Labor Statistics, the following occupations (in descending order) are projected to experience the largest employment between 2004-2014: home health aides; network systems and data communications analysts; medical assistants; physician assistants; computer software engineers; physical therapists, dental hygienists; dental assistants, database assistants; physical therapists; forensic science technicians; veterinary technologists and technicians; diagnostic medical sonographers; occupational therapist assistants; and medical scientists except epidemiologists. Occupations projected to experience the largest numerical decreases in employment (in descending order) between 2004-2014 include: farmers and ranchers; stock clerks and order fillers; sewing machine operators; file clerks; mail clerks and mail machine operators except postal service; computer operators; secretaries except medical, legal and executives; cutting, punching and press machine setters, operators and tenders, metal and plastic; telemarketers; word processors and typists; credit authorizers, checkers and clerks; machine feeders and off-bearers; textile winding, twisting and drawing-out machines setters and operators; office machine operators; switchboard operators and door-to-door sales workers.

There is a dire need for each of the counties to prepare the youth for future occupations and dissuade them from enrolling in curricula that prepares them for professions in declining occupations. Schools and colleges should carefully review and implement the recommended competencies listed in the 2000 report issued by the Secretary of Education and entitled What Work Requires of Schools: A SCAN Report for America 2000. The county government has an important role in workforce development. Instead of providing free education to all students who enroll in community colleges (as has been recently suggested), it should provide funding for non-credit career preparatory courses.

BRAC is often hailed as the magic wand that will transform the Cape Fear Region within the next three to four years. It is true that BRAC will bring unprecedented opportunities to the 10 counties in the region, but are these counties ready to seize the opportunity? In a region where less than 18 percent of the adult population hold college degrees and SAT scores are below the state average, the prospect of

great strides in gainful employment are bound to be limited. High- demand and high-salary jobs will be filled, but will the citizens of the 10 counties fill these positions or will workers from outside?

It is time the county planners realize that job creation is not an end in itself. It is simply a means to raise the standard of living and improve the quality of life. Accordingly, the emphasis must shift from quantity to the quality of jobs that are created.

The counties must assess and identify their strengths and learn how to leverage their assets in a flat global economy. Instead of directing economic development efforts in multiple directions, policy makers must develop a more strategic approach which focuses on a cluster of industries. This requires the cooperation of all sectors of the economy: businesses, government, civic leaders, labor, and educators. Instead of establishing business councils, one should opt for Community Economic Development Councils that include all of the entities listed above.

Counties can emulate the best practices of some cities and counties in the United States that have developed exemplary programs for employer-based training. The funding for employer-based training is provided by imposing a supplemental unemployment insurance tax. This will ensure that existing industries will stay in a county because they will have an incentive to continuously upgrade the skills of their employees. Alternatively, the county could share some of the costs with industry in developing industry-led skills alliances.

The investment in infrastructure to build entrepreneurial capacity, a knowledge base, career training facilities and to connect low income areas in a county by providing access to high-speed broadband internet and efficient public transportation will be an effective strategy to reduce economic disparities.

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CREATING VIRTUAL COOPERATIVE LEARNING EXPERIENCES FOR ASPIRING SCHOOL LEADERS AND PRACTITIONERS WITH WEB 2.0

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ABSTRACT

This study, *Creating Cooperative Learning Experiences for Aspiring Leaders and Practitioners with Web 2.0*, was funded by a UNCC Curriculum and Instructional Development Grant. The project is evolutionary and revolutionary in its vision and mission. In the area of classroom instruction for aspiring school leaders it is a logical ***evolutionary*** step which encompasses technologies typically familiar to our master's level students, but seldom used as means and methods of deepening the understanding of content by students both in and outside the classroom. In this aspect, this grant would fund the development of the *wiki* as an instructional tool designed to produce both a depth of reflection and application of classroom instruction.

It is ***revolutionary*** through the creation of a virtual social network dedicated to educational leadership. First it connects current Masters of School Administration (MSA) students to each other; second, it connects current students to MSA graduates who are now practicing school administrators. This connection between current students allows for an ongoing deepening of content and application impossible or at least impractical in the typical classroom and out-of-classroom environment. The third connection comes in the vision of this grant to fulfill a Department of Educational Leadership goal: *the creation of a network of students and practitioners to solve the problems facing schools today.* This third

aspect would almost immediately take the lessons from this grant beyond its creator to a broader audience, a goal of the CID grant process.

The objectives of the grant were to:

1. To teach students through Web 2.0 technologies
2. Increase faculty-student interaction outside the classroom
3. Increase student engagement through virtual cooperative learning
4. Create a self-sustaining and self-correcting feedback process as a practicum experience in knowledge building and problem solving
5. Improve learning outcomes through virtual cooperative learning
6. Increase networking as a leadership practice of current and former students

After a full pilot in the summer of 2009, the objectives were implemented in two fall classes: *Legal Aspects of Schooling* and *Curriculum Leadership*. Each class was administered a 55 item survey to determine their perceptions of the value teaching using Web 2.0 technologies, compared to traditional face-to-face and online classes they have experienced.

This presentation will review the processes and products of the grant as well as a preliminary analysis from the student survey data.

Keywords: Web 2.0, Teacher-Student Interaction, Virtual Cooperative Learning

INCORPORATING WEB 2.0 TECHNOLOGIES INTO THE COLLEGE CLASSROOM

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ABSTRACT

Web 2.0 Technology is comprised of a number of on-line interactive tools that allows users to read, write, and edit web content. Examples include blogs, podcasts, multimedia, social bookmarking, wikis, and social networking. Initially students are mostly familiar with these social networking tools (e.g., Twitter, Facebook) from recreational use. There has been an increase in the use of social networking tools in a professional domain (professional networking, LinkedIn, funding announcements for NIH). Is there a role for social networking tools in higher education classrooms? This paper reviews some of the more common uses of social networking tools in higher education classroom and discusses possible differences between higher education and elementary or secondary education incorporation. Potential applications of smart devices are also reviewed, including a discussion of existing educational apps that may translate to the higher education environment.

DISTANCE LEARNING STUDENT SEGMENTS

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ABSTRACT

The use of distance education technologies has increased dramatically with current statistics indicating distance education is being used by about 2/3 of US higher education institutions. The increased reliance on distance education highlights the need to better understand students in terms of their preferences for and attitudes toward this learning format. The authors present an a segmentation study of students that categorizes students into groups based upon their perceptions of distance learning technologies.

Introduction

Instructional formats that have allowed for instructors and students to be separated by time and space have been in existence for at least since the 19th century (Cantelon 1995). However, the demand for these instructional formats has increased worldwide as national economies have become increasingly dependent upon knowledge and knowledge management and as technologies (e.g., the Internet) that facilitate communication across time and space have been developed (Jones 1997). To meet this demand, secondary educational institutions have become increasingly interested in distance education technology to mediate instructor-student and student-student communication. In fact, the U.S. Department of Education reports that 65% of postsecondary institutions offer at least some distance education courses (US Department of Education 2008). This figure has doubled in the past decade as only one third of all higher-education institutions in the United States offer distance education courses in 1999 (Lewis et al 1999).

From a student's perspective distance education technologies hold the promise of making education more convenient as the technology removes time and location boundaries from education. In other words, the transfer of knowledge that defines education can occur outside of a traditional classroom location and at a time decided upon by students individually. Current distance education technologies vary in their ability to remove these boundaries as some technologies (e.g., videoconferencing) require students to attend class at a particular location (although the instructor may be at a different location)

and at a particular time. Other technologies (e.g., on-line lectures) allow students to participate in a course from any location and at any time.

While distance education technologies impact the convenience of students' educations, they also impact educational outcomes (i.e., student learning). Some studies have found distance education to be comparable to traditional (i.e., face-to-face) education in terms of student learning outcomes (e.g., test scores) (Gibbons 1989; Alavi, Yoo, and Vogel 1997). Other studies have found that distance learning may actually lead to improved educational outcomes in some situations (Sitzmann et al 2006). The amount of learning that takes place via distance or in a face-to-face setting is likely to depend upon student characteristics (e.g., motivation) that have been found to vary across delivery methods (Alavi, Yoo, and Vogel 1997; Klein et al. 2006; Knoll and Jarvenpaa 1995; Webster and Hackley 1997). The fact that student characteristics impact the effectiveness of the delivery method suggests a need to match the delivery method to the type of student (e.g., Morrison et al. 2003). This, in turn, suggests a need to segment consumers based upon their attitudes toward distance learning technologies.

The present study investigates students' perceptions of various types of distance education technology and uses these perceptions to cluster/segment students. This study should be of interest to any educator or educational institution that is considering an investment in distance education technologies, and is seeking to maximize the investment's ability to improve the educational experiences of students. The following section presents a discussion of distance education technologies and is followed by a description of an empirical study designed to measure student perceptions of these technologies.

Distance Education Technologies

Student Perceptions of Distance Education Technology

From the student's perspective, distance education technology would seem to have a two-fold purpose as an educational tool. First, the technology should make education more accessible to students by making it more convenient for students to take classes and/or enroll in programs. This convenience may be achieved in one of two ways: by making class attendance more convenient by allowing students to participate in classes from an increased number of locations (i.e., locations that are convenient given the students' locales) and/or by allowing students to participate in class at more convenient times (i.e., times that are more convenient given students' schedules). Therefore, an important component of a technology's ability to enhance students' educational experiences is the technology's ability to increase the convenience of the experience.

The second purpose of distance education technology would seem to be related to students' learning. More specifically, as the goal of educational institutions is to educate students and the goal of students is to be educated, distance education technology should aid students in their attempts to learn course materials. Therefore, an important component of a technology's ability to enhance students'

educational experiences is the technology's ability to aid students' learning. A technology can be a learning aid in a number of ways including increasing the student's ability to communicate with the instructor or other students, increasing the student's ability to access or review course content, etc.

Traditionally, distance education has been conducted without the support of advanced technologies. For example, correspondence courses have been (and are) offered using a format whereby the instructor and the student communicate through handwritten or typewritten correspondence transferred via the postal service. However, technology-based distance education has become more prevalent with the dissemination of various types of technology that allow for richer and/or faster communication between the instructor and student (e.g., videoconferencing, email, CD-ROM based software). Currently, there are two principle types of distance education technology: non web-based technology and web-based technology.

Non Web-Based Technology

Non web-based technology in distance education takes many forms such as one- or two- way videoconferencing, videotaped lectures, and television broadcast of lectures. This technology allows for versatile communications as a variety of images and sounds (e.g., the instructor, students at various locations, in-class visual aids, video taped presentations) can be transmitted. Typically, non web-based technology is used in an attempt to replicate the traditional-classroom experience in a distance education format that allows for the education of large numbers of students and/or for the education of students in geographically dispersed locales. As such, this type of technology features the instructor's presentation of materials as they would normally be presented in a traditional classroom setting. Many of these technologies also feature students sitting in a classroom whose location is different than the instructor's location. Further, these technologies allow for interaction between the instructor and the student. However, the interaction may be asynchronous and dominated by the instructor. An example of the use of non web-based technology in distance education include the linking of classrooms at two separate universities via a videoconferencing system that enabled a single course to be taught at two universities simultaneously (Alavi, Yoo, and Vogel 1997).

Non web-based technology should improve the convenience of students' education experiences as it allows the student to participate in class without commuting to a central location at a particular time. However, the increase in convenience may be minimal in the case of some web-based technologies (e.g., video-conferencing) that still require students to attend a particular location (albeit a location that may be closer to their homes/offices) and have a designated class meeting time.

Many facets of non web-based technologies may be perceived by students as aids to learning. These include the ability to see and hear the professor, the ability to ask questions and receive feedback in real-time, and the ability to have face-to-face interactions with other students. Also, by replicating (or attempting to replicate) the traditional classroom experience, non web-based technology minimizes the psychological hurdles students face when taking a distance education course, as it allows the student to use the same strategies and processes used in traditional classrooms with which they are familiar.

However, students may experience a feeling of being disconnected from their instructor and/or their classmates because of dispersed locales of class participants. Students may perceive this disconnected feeling to be a hindrance to learning.

Web-Based Technologies

Web-based technologies include web-sites, discussion groups, chat rooms, on-line testing, email, and integrated software packages such as WebCT and Blackboard. Rather than trying to replicate a traditional classroom setting, web-based technologies typically create unique learning environments. These environments typically feature less versatile communication than that offered by non web-based technology as it is more difficult to transmit images and sounds because of the time and effort required to digitize material and the limited bandwidth of communications imposed by relatively slow modems. Consequently, the majority of web-based communications involve the transmission of textual information. However, these communications do allow for a great deal of student-instructor and student-student interaction although much of this interaction is asynchronous.

The limited nature of web-based communications may be perceived by students as a hindrance to learning as most students are used to the rich communications that are afforded by a traditional classroom setting. However, the lack of richness may be offset by the quantity of communication that may result from the ability to submit questions and comments at any time. With regards to convenience, web-based technologies should greatly improve the convenience of students' educational experiences as they allow for learning to take place at a time and place chosen by students individually.

Study

Data Collection

Data was collected from students enrolled in a graduate level Marketing Management course at a Midwestern university with a large part-time MBA program. The course was taught using a distance education format that resulted in the simultaneous instruction of three sections of the course (with each section meeting in a different location). The course featured a variety of distance education technology including a videoconferencing system that linked the three sections of the class during each class meeting, a course web site that allowed students to access relevant course information at their convenience, and internet discussions that allowed students to ask questions/pose comments to class participants (i.e., the instructor and other students) at their convenience. As part of a routine, end-of-the-term course evaluation, students were asked for their perceptions of the various technologies used in the course. Specifically, students were asked to rate each technology (i.e., the videoconferencing system, the website, and the internet discussion pages) in terms of its convenience and the extent to which it aided students' learning of course materials. The ratings were captured using seven-point Likert type scales.

Analysis & Results

Factor Analysis

A principal components factor analysis with varimax rotation was used to assess the dimensionality of the data. Using the eigenvalue-greater-than-one criteria, two factors were extracted that in total accounted for 72.9% of the variance in the data. The rotated factor solution (see Table 1) revealed the factors are defined by the type of technology (i.e., non web-based vs. web-based) rather than by the attributes of the technology (i.e., the technology's convenience or the extent to which the technology aided learning). More specifically, both videoconference items loaded on the same factor while all items pertaining to the course web-site and the discussion pages loaded on a second factor. Thus, student perceptions of distance education technologies appear to be bi-dimensional with the dimensions being perceptions of non web-based technology and perceptions of web-based technologies.

TABLE 1

Rotated Factor Solution

		Factors	
		Web-Based Technologies	**Video-conferencing**
Non web-based technology	Learning aid	.315	**.719**
	Convenience	.050	**.935**
Web-Site	Learning Aid	**.820**	.101
	Convenience	**.723**	.412
Discussion Pages	Learning Aid	**.839**	.090
	Convenience	**.848**	.270

As the factor analysis results supported a bi-dimensional view of the data, scales were created to represent each of the dimensions. More specifically, the items used to assess the perceptions of the non web-based technology system were combined into a multi-item measure of videoconference perceptions, and the remaining items were combined into a multi-item measure of web-based technology perceptions. Cronbach's Alpha calculations reveal both the videoconference and the web-based scale to be reliable (a= .68 and .86 respectively).

Descriptive Statistics for Technology Scales

Descriptive statistics for each of the scales (see Table 2) reveal students have slightly positive perceptions of web-based technology (mean = 4.80; st. dev. = 1.15) and neutral perceptions of non web-

based technology (mean = 3.86; st. dev. = 1.20). Further, students' perceptions of web-based technology is significantly higher than perceptions of non web-based technology (p = .00). 73.9% of the respondents rated web-based technology more positively than non web-based technology while only 14.4% of respondents rated non web-based technology more positively than web-based technology (12.6% indicated their perceptions of web-based technology equaled their perception of non web-based technology).

Table 2

Descriptive Statistics of Multi-item Scales

Scale	Alpha	Mean	S^2	95% Confidence Interval	
				Lower Bound	Upper Bound
Non Web-based	.68	3.86	1.45	3.64	4.08
Web-Based	.86	4.80	1.33	4.59	5.01

Cluster Analysis

Using each respondent's scores for the videoconference and web-based technology scales, a cluster analysis was conducted to form a taxonomy of students based upon their perception of distance education technologies. A hierarchical cluster analysis technique, using squared Euclidean distance calculations and Ward's linkage method, was used due to the exploratory nature of the research.

Two decision criteria were used to determine the appropriate number of clusters. The first criterion was to minimize the number of clusters. This criterion, which is consistent with the idea behind cluster analysis (i.e., to place individuals into groups), helps to ensure clusters are formed in a parsimonious manner. Without this criterion, there would be no reason to perform a cluster analysis as each individual could be thought of as a separate group. The second criterion was to maximize the differences between clusters. This criterion helps to ensure that clusters formed are meaningful in terms both the homogeneity within each clusters and the heterogeneity between the clusters. These decision criteria are contradictory as maximizing the differences between the clusters tends to increase the number of clusters formed which directly contradicts the first criterion. Therefore, the criteria must be balanced against one another in determining an appropriate cluster solution.

To arrive at an appropriate cluster solution, a three-stage process was used:

Stage 1: Form various numbers of clusters: Four alternative cluster analyses were conducted on the data. The analyses varied in terms of the number of clusters formed with the number of clusters

ranging from 2 to 5. Descriptive statistics of the clusters formed by each of the alternative solutions is provided in Table 3.

Table 3

DESCRIPTIVE STATISTICS FOR ALTERNATIVE CLUSTER SOLUTIONS

# clusters formed	Cluster	n	Video scale		Web-based scale	
			Mean	St. dev.	Mean	St. dev.
5	A	32	3.86	.50	5.71	.55
	B	15	2.23	.65	4.57	.63
	C	26	3.35	.56	3.71	.63
	D	35	5.17	.53	5.13	.89
	E	3	1.67	.29	1.58	.63
4	A	32	3.86	.50	5.71	.55
	B	41	2.94	.80	4.02	.75
	C	35	5.17	.53	5.13	.89
	D	3	1.67	.29	1.58	.63
3	A	32	3.86	.50	5.71	.55
	B	44	2.82	.90	3.86	.96
	C	35	5.17	.53	5.13	.89
2	A	67	4.54	.84	5.41	.79
	B	44	2.82	.90	3.86	.96

Stage 2: Assess the differences between the clusters formed by the alternative solutions:

The differences between the clusters were assessed using discriminant analysis and t-test of the differences in the group means. Discriminant analysis was used to assess each cluster solution's ability to meet the second decision criteria (i.e., to assess the significance of differences between the clusters formed by each alternative solution). To assess each solution's ability to satisfy the second decision criterion, the percentage of correct classifications (i.e., hit ratio) was calculated for each alternative solution. The hit ratio, which is analogous to R^2 in regression analysis (Hair, et al. 1998), can be used to assess the predictive accuracy of the discriminant analysis. Further, high predictive accuracy can be taken as evidence of significant differences between clusters. The percentage of correct classifications for the various solutions ranged from 94.6%, for the two-cluster solution, to 98.2%, for both the three- and four-cluster solutions (see Table 4). Thus, the three and four cluster solutions were retained for further analysis while the two and five cluster solutions were discarded at this point.

Table 4

DESCRIPTIVE STATISTICS FOR DISCRIMINANT ANALYSIS

# clusters formed	Cluster	n	Correctly Classified		
			n	%	Overall %
5	A	32	31	96.9	96.4
	B	15	13	86.7	
	C	26	25	96.2	
	D	35	35	100	
	E	3	3	100	
4	A	32	31	96.9	98.2
	B	41	40	97.6	
	C	35	35	100	
	D	3	3	100	
3	A	32	32	100	98.2
	B	44	42	95.5	
	C	35	35	100	
2	A	67	64	95.5	94.6
	B	44	41	93.2	

T-tests of the difference between group means were used to further assess the differences between the clusters for the three and four cluster alternatives. More specifically, the degree to which both the perceptions of non web-based technology and the perception of web-based technology scales were significantly different among the clusters formed by the alternative solutions was assessed. The t-tests revealed that for the both the three-cluster and four-cluster alternatives, significant differences existed among both scales between each of the groups (i.e., each group was significantly different from all other groups on both scales).

The four-cluster solution was retained for two reasons. First, the four-cluster solution is parsimonious (although not as parsimonious as the three-cluster solution). Second, the four-cluster solution provides more information than the three-cluster solution because it resulted in four significantly different groups rather than three significantly different groups.

Description of Clusters

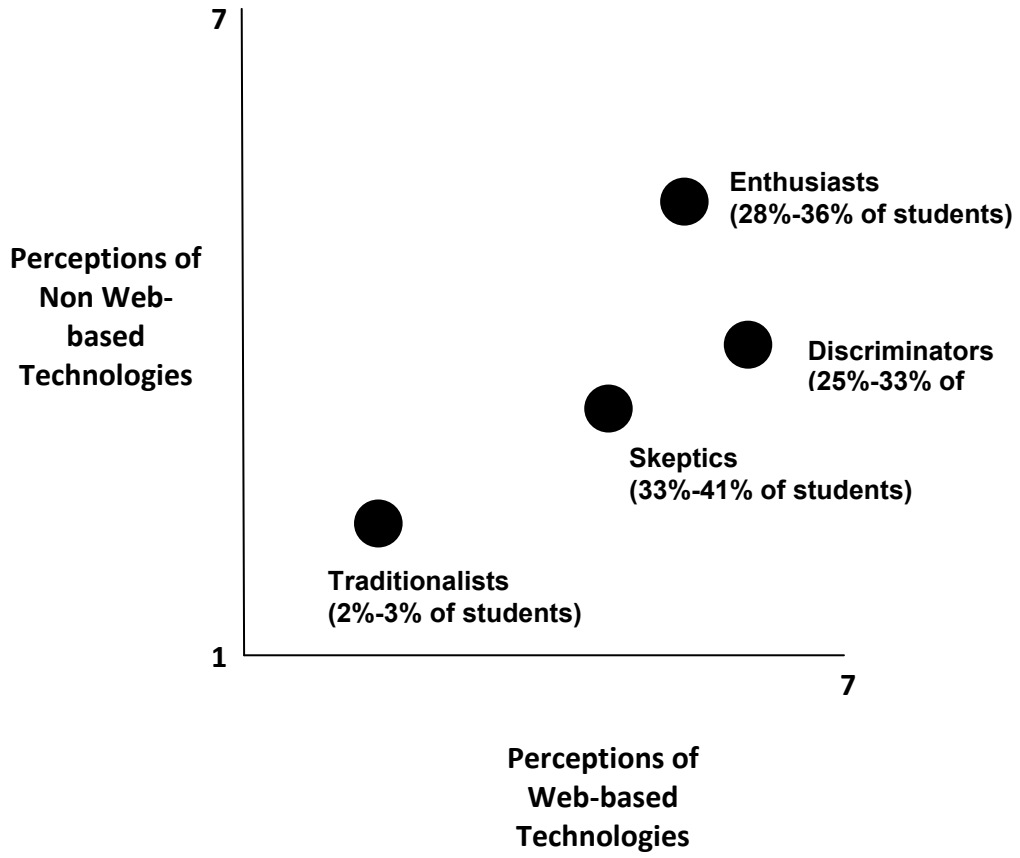
The retained cluster analysis demonstrates that students can be categorized into one of four groups with respects to their perceptions of non web-based technology and the perceptions of web-based technology (see Figure).

Traditionalists

Traditionalists are those students having strong, negative perceptions of both non web-based technology and web-based technologies. These students would seem to strongly prefer a traditional classroom environment where communication is exclusively face-to-face. The data from this study indicate 2.2% - 3.2% of the student population can be categorized as traditionalists. This low percentage suggests that the majority of students are at least somewhat receptive to various distance education technologies.

Figure

GROUP MEANS FOR THE FOUR- CLUSTER SOLUTION



Skeptics

The second group consists of those students having neutral attitudes toward the web-based technologies but negative attitudes toward non web-based technology. The data from this study suggests that 32.6% - 41.2% of students fall into this category. These students seem to be open to the

use of web-based technology as their perceptions of web-based technologies are neither negative nor positive. However, these students do have negative perceptions of non web-based technology. This suggests that these students are likely to perceive distance education as a viable alternative (or complement) to the traditional classroom provided that web-based technology is used to implement a distance education format.

Discriminators

The third group consists of students having positive perceptions of web-based distance education technology but neutral perceptions of non web-based technology. The data suggests that 25.0% - 32.6% of students can be categorized into this group. Students in this group seem to be open to any technology-based distance education format as they do not have negative perceptions of either type of technology. Further, they would seem to be in favor of those formats that feature web-based technologies. This suggests that 1/4 to 1/3 of students perceive any form of distance education as a viable alternative (or complement) to a traditional classroom setting.

Embracers

The fourth group consists of students having positive perceptions of both types of distance education technology. The data suggest this group accounts for 27.5% - 35.5% of the student population. This group would seem to be proponents of distance education in general as they have approximately equally positive perceptions of both types of technology. Thus, the data indicate that approximately 1/3 of students are in favor of distance education technologies and may even prefer this class format to the traditional classroom format.

Discussion

The student clusters extracted from the data indicate that distance education is likely to be well received by students as the majority of students had positive perceptions of at least some type of distance education technology. Among those student who do not have positive perceptions of distance education technology, nearly all appear to have neutral perceptions of web-based technology. However, there appears to be a small percentage of students with extremely negative perceptions of the use of distance education technologies.

The presence of four distinct clusters suggests that the appropriate distance education format depends upon the student audience with some students preferring a mix of distance education technologies, some preferring only web-based technologies, some without an affinity for any type of distance-learning format, and some who strongly object to distance-learning formats. Thus, students' perceptions of distance-learning technology should be incorporated into institutions' decisions concerning distance education because students' perceptions will impact the institutions' ability to attract, retain, and satisfy students.

Institutions offering degree programs using distance education formats that are based upon a particular technology should seek to attract those students with positive perceptions of the type of technology used. In other words, attempting to attract students with a predilection for distance education in general may be insufficient to ensure the student retention and satisfaction. Rather, student retention and satisfaction are likely to be (at least partially) dependent upon student perceptions of particular types of distance education technology.

Institutions incorporating selected distance education courses into their curriculum should offer a variety of technologies across courses. This would enable students to self-select the type of technology and/or the mix of technology they prefer. Thus, offering a variety of technologies across classes and/or a mix of technologies within classes should enable the school to satisfy and retain students.

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A STUDY OF THE RELATIONSHIP BETWEEN STUDENT ACHIEVEMENT AND PRINCIPALS' EFFECTIVENESS AND FLEXIBILITY

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ABSTRACT

The purpose of this study was to estimate the relationship between teachers' perceptions of their principal's leadership style, as measured by the Leader Behavior Analysis II-Other (LBAII-Other), and student achievement in mathematics and reading, as measured by the West Virginia Educational Standards Test (WESTEST). The LBAII-Other was mailed to 515 teachers, and 376 teachers returned surveys. Indices for effectiveness, flexibility, and primary leadership style were identified for 67 school principals in 6 West Virginia counties. Using correlation and regression analyses, the study found that neither the regression of flexibility and effectiveness on mathematics achievement (R^2 = .04, F = 1.41, p > .05), nor the regression of flexibility and effectiveness on reading achievement (R^2 = .01, F = .25, p > .05) was statistically significant. Researchers and policymakers are encouraged to consider constructs directly influenced by the school principal, such as school climate and teacher morale, as correlates of effective school principals.

Introduction

Public schools are criticized for their failure to meet the needs of all students. According to Braun, Sum, and Yamamoto (2007), the achievement gap among demographic groups remains consistent and many students lack the academic preparedness to be successful. Student achievement can be attributed to a variety of factors, one of which is school leadership. Because of the accountability mandates legislated by No Child Left Behind (2002), more responsibility is directed to school principals for increasing student achievement (Edigar, 2002; Kelly, Thornton, & Daughtery, 2005).

Principals have not always encouraged collaboration among teachers nor have they empowered teachers in school decision-making processes. Goleman (2006) argued that these traditional leadership practices are detrimental to the school climate and do little to promote teacher satisfaction and cooperation. Collaboration among stakeholders in the decision-making process is essential in this era of

accountability. As early as 1985, the Carnegie Forum to Study Education and the Economy emphasized shared governance and the need for teacher participation in principal leadership. The study also emphasized the need for collaborative decision making with teachers and the community. Change in leadership practice requires principals to become more flexible and effective in their leadership style.

According to Adams (1999), principals are leaving administrative positions because of the increased demands associated with accountability, and newly certified administrators are staying in the classroom. Because of the increased need for school administrators, school districts are seeking out educators who possess the characteristics considered important to effective school leadership. The search for candidates with effective principal characteristics led researchers to study the practices of effective principals (Gordon, 2003a). School communities and educational leaders are demanding more accountability from principals as instructional leaders because of low student achievement. Successful leadership reform requires more flexibility and effectiveness from the leaders (Blanchard, Hambleton, Zigarmi, & Forsyth, 1987). School leaders who can develop positive relationships among teachers and students also may increase student achievement (Ewing, 2001). Teacher satisfaction is contingent upon the collaboration and support of school principals (Gordon, 2004).

School systems across the state of West Virginia are particularly plagued with meeting accountability mandates of NCLB. Some systems face serious sanctions for failing to meet Annual Yearly Progress (AYP). During the 2007-2008 school year, only one of six county school systems located in a specific region of the state met AYP (West Virginia Department of Education [WVDE], 2008). The purpose of this study was to investigate the relationship between student achievement and both principal flexibility and effectiveness. The findings may increase awareness of the impact of effective leadership behaviors on student achievement. These findings may help identify ways to improve achievement and guide the direction of professional development for school leaders in the areas of school improvement and increased student achievement.

Review of Related Literature

"Leadership depends on the situation. Few social scientists would dispute the validity of this statement. However, this statement can be interpreted in many different ways, depending, at least in part, on what one means by leadership" (Vroom & Jago, 2007, p. 17). According to Zigarmi (2005), research has supported the contention that a *best* leadership style does not exist. Gates, Blanchard, and Hersey (1976) claimed that effective leadership depends on the situation. The Situational Leadership II (SLII) theory is based on the notion that leadership style influences the behavior of others (Blanchard, Zigarmi, & Zigarmi, 1985). Blanchard et al. found that effective and flexible leadership styles differ with specific situations. Zigarmi explained that the SLII theory considers employees' developmental levels, or "the competence and commitment of the follower to perform a particular task or achieve a particular goal" (p. 184).

The situational leader can choose from one of four leadership styles (i.e., directing, coaching, supporting, and delegating) according to the situation (Blanchard, 1990). The directive style of leadership is associated with the autocratic approach, and the leader guides, controls, and supervises every aspect of the teacher's behavior. The supportive leadership style is most similar to the democratic approach and the leader praises, listens, and facilitates subordinates. Both the directive and supportive styles can be desirable, and the most important consideration is given to how one can best manage the employees under his/her supervision.

According to Blanchard (1990), the directive leadership style is effective when a leader must make an immediate decision to get things done. This approach also is effective when working with people who lack experience and knowledge in their jobs. The supportive approach works well with people who lack confidence and who may benefit from encouragement and confidence building to enhance performance. Blanchard felt that both approaches work well in some situations but may be inappropriate in other situations. Experienced teachers, for example, likely prefer the supportive approach, whereas inexperienced teachers may seek more direction and therefore prefer the directive approach.

The SLII theory supports the notion that no single leadership style is better than another. Effective leaders need to be able to adapt their leadership styles to meet the needs of different situations; therefore, different styles may be more appropriate at different times (Zigarmi, 2005). The issue then arises as to which leadership style is the most appropriate in a particular situation. Flexible, directive and supportive behaviors are required, depending on the conditions presented by the individual, group, or organization. Several situational variables can determine the most appropriate style for a given situation. These variables may include job demands such as complexity, priorities, and time lines. Management or administrative expectations, employee skills, and commitment levels also may influence the choice of leadership style. The follower is a key factor in determining the most effective leadership style and behaviors for a particular situation. Specifically, the amount of directive and supportive behavior that the leader should provide depends on the developmental level of the follower in regard to a specific task.

Results of research based on the SLII theory differ with respect to the relationships between leadership styles and other educational variables. Cornman (2005) surveyed 76 elementary school principals on the LBAII and found that principal flexibility was related to mathematics achievement in high performing schools. However, neither the flexibility nor the effectiveness of the principal was related to achievement in low performing schools. Leader effectiveness was not related to achievement in either mathematics or communication arts among high achieving schools. Neither leadership flexibility nor effectiveness differed among principals in low and high achieving schools. Finklea (1997) found that principal effectiveness among a sample of secondary school principals in South Carolina was related to student achievement, measured as the percentage of students who scored at or above the 50th

percentile on the Metropolitan Achievement Test. Finklea also acknowledged the relationship between student socioeconomic status and achievement.

Ewing (2001) compared the leadership styles of principals to student achievement in high-, middle-, and low-achieving schools. The study specifically examined principals' self-perception of leadership effectiveness and flexibility. The study surveyed 50 principals using the LBAII-Self and 750 teachers using the LBAII-Other among a sample of public schools in Chicago. Student achievement was determined by the state basic skills test in reading and mathematics. Leadership styles of the principals were significantly related to student achievement in the areas of reading and mathematics. However, no significant relationship was found among effectiveness, flexibility, and student achievement. A significant relationship was found between principal flexibility and effectiveness, which suggested that the higher the rate of flexibility (style selection being equal) that was practiced by the principal, the higher the rate of effectiveness (the best style selected for the situation).

Other researchers have shown that self-perceptions and peer perceptions of leadership style may differ. Delgado (2004) showed that principals tend to perceive themselves as less flexible than their supervisors or peers. Furthermore, whereas principals perceive themselves as having a coaching style, their supervisors and peers see the principal more as a supportive principal. Muñoz (2001) surveyed 12 principals using the LBAII-Self and 582 teachers using the LBAII-Other in a study of the principal's leadership styles among a group of 20 secondary schools regarded as the top schools with respect to student achievement. The coaching (S3) and supporting (S2) leadership styles were the most prevalent among the top-performing secondary schools in Manila, The Philippines. Unlike the findings by Delgado (2004), this study showed there to be congruence between the actual and preferred leadership styles of the principals' and between the principals' self-perception of their leadership style and the teachers' perceptions of the principals' leadership styles.

Other studies have shown that leadership style relates to school climate (Kelley et al., 2005). Kelley et al. related certain leadership dimensions and school climate measures in 31 elementary schools. In addition, the teachers' perceptions of their principals' leadership styles and the principals' own perceptions of their leadership styles were compared. The results indicated that the teachers' perceptions of their principals' effectiveness were related to school climate.

Delgado (2004) described a good leader as follows, "an exemplary leader encourages the heart, models the way, inspires a shared vision, enables others to act, and challenges the process" (p. 13). Delgado concluded that effective leadership is a necessity in the schools because principal accountability for student achievement has increased, and principals are now required to be the instructional leaders of the schools (Gordon, 2003b). The results of this study could challenge educational leaders and educators to continue to investigate the most effective leadership styles that could promote teacher satisfaction and productivity, which in turn should increase student achievement. The results may increase the awareness of a need to reexamine current policy and procedure that evaluates principal effectiveness as

well as reexamining the criteria for meeting adequate yearly progress (AYP) according to the No Child Left Behind Act (2002). The sanctions for failure to meet AYP could be reconsidered in favor of policies that continue to encourage the use of data to inform decisions and direct improvement, but discourage the labeling of schools and personnel based strictly on measures of student achievement and performance indicators.

Research Hypotheses

This study examined the following four hypotheses:

H_{01}: There is no relationship between principals' flexibility, as measured by teachers' perceptions of the LBAII-Other, and reading achievement on the WESTEST.

H_{02}: There is no relationship between principals' effectiveness, as measured by teachers' perceptions of the LBAII-Other, and reading achievement on the WESTEST.

H_{03}: There is no relationship between principals' flexibility, as measured by teachers' perceptions of the LBAII-Other, and mathematics achievement on the WESTEST.

H_{04}: There is no relationship between principals' effectiveness, as measured by teachers' perceptions of the LBAII-Other, and mathematics achievement on the WESTEST.

Method

Participants

Data were collected from teachers in 80 schools across 6 school systems in West Virginia. A total of 2,694 teachers were employed in these schools. Using a sample size calculator, a sample of 515 teachers was determined appropriate. A list of teachers was obtained for each school, and teachers were proportionally selected according to the total number of teachers in the school. A minimum of 5 teachers was selected from each school in an effort to receive enough surveys to calculate the leadership style indices for the principal of each school. Teachers for each school were numbered consecutively according to a school directory and randomly selected from the list using a random numbers generator. The LBAII-Other survey was mailed directly to the teachers along with a self-addressed stamped envelope for returning the survey and a consent form. Three hundred and seventy-six teachers returned surveys; only 337 were used because some teachers changed schools during the summer, and their ratings were not for their principal during the year for which achievement data were collected.

Teachers were asked to answer the 20 multiple-choice questions on the LBAII-Other regarding their perceptions on how their principals handle the different situations as presented in the question. Teacher perceptions of leadership style were used in this study based on the recommendation by Zigarmi (personal conversation, May 23, 2008) who stated that to obtain an accurate account of principals' leadership behaviors, teachers needed to be surveyed because 60% of principals perceive their

leadership behaviors differently from their teachers. Each returned survey was hand-scored and the responses to the 20 questions were recorded on the scoring guide. The principal's effectiveness score, flexibility score and primary leadership style were recorded as perceived by each teacher. The principal's primary leadership style was determined according to the most frequent style that occurred among the teachers from the school who returned surveys. A minimum of three survey responses from each school was required to calculate the average flexibility and effectiveness scores for the school's principal. Eight schools did not meet the minimum criteria of 3 survey responses; therefore those schools did not receive calculated scores for the principals. Data for 67 principles were included in the analysis.

Instrumentation and Procedures

Leader Behavior Analysis II (Other). The LBAII-Other consists of 20 situational questions that characterize the principal according to one of the four leadership behavior categories (i.e., directing, coaching, supporting, and delegating). Six different scores can be calculated from the LBAII-Other; two are considered as primary scores and four are considered as secondary scores. Flexibility and effectiveness scores are primary scores, and the numerical values calculated for each of the four leadership styles are secondary scores. Each question represents a specific situation that could be encountered by a school leader. The four response choices for each situation represent statements regarding how a principal might choose to respond to a particular situation. Each respondent chooses one answer from the four choices that best represents his or her perception of the principal's response to the situation. The scorer records the responses to the multiple-choice items on a matrix that includes a style flexibility grid and an effectiveness grid. The leadership style selected most often among the 20 situations is considered the primary leadership style.

The four leadership styles are categorized according to level of directive and supportive behaviors. Leaders labeled S1 are high directive-low supportive. These leaders define roles, goals, and tasks for the subordinates. Leaders labeled S2 are highly directive and highly supportive. Leaders labeled S3 are low directive and high supportive. Leaders who were S4 were low directive and low supportive. They provide very little direction or support. The primary leadership style was calculated by recording the highest column total from the style flexibility grid in the appropriate area on the matrix that corresponded with one of the four leadership styles.

Flexibility measures the leader's variability in selecting a leadership style. Participants' responses from the LBAII-Other were recorded on the flexibility grid. This grid allows the scorer to match the response to each of the 20 items to the leadership style reflective of the response. The frequency with which the principal is perceived to demonstrate each style determines the flexibility scores. The flexibility score ranges from 0 and 30, with the norm ranging between 14 and 20. The higher the flexibility score, the more flexible the respondent was in changing the leadership behavior to match the needs of the situation and the group (Zigarmi, Edeburn, & Blanchard, 1995).

The effectiveness score rates the respondents' answers to the situational problem about effectiveness. According to the scoring guide, one response is the most appropriate action that the leader should take. The LBAII designates a certain style as being the most effective in certain situations. The results produced values of excellent, good, fair, and poor. These ratings correspond to numerical values. A value of 4 is given for each excellent choice response. The LBAII-Other was designed with four possible responses per question, with one particular response being the best response for the situation. With 20 situations being presented, each respondent received a score ranging from 20 to 80 that indicated the respondent's ability to choose the most appropriate leadership behavior for the situation.

Cronbach's coefficient alpha was used to test the LBAII-Other for internal consistency. The internal consistencies on the LBAII-Other were extremely good, with scores ranging form 0.54 to 0.86 (Zigarmi et al., 1995). The reliability coefficient of preferred response was alpha .9812 (Zigarmi et al., 1995). Blanchard, Zigarmi, and Nelson (1993) stated that numerous studies have been conducted using the LBA and the LBAII. The content, construct, and predictive validity have been examined over a period of 10 years to confirm the test validity (Blanchard et al., 1987).

WESTEST. The WESTEST is a criterion-referenced assessment that was designed and developed by the West Virginia Department of Education's Offices of Assessment, Instructional Services, Special Education Programs/Services and Technology, along with West Virginia educators, business/community representatives, and CTB/McGraw-Hill. The WESTEST measures student achievement on the West Virginia Content Standards and Objectives (CSOs) in reading, language arts, mathematics, science, and social studies content areas. The WESTEST includes selected response (multiple choice), short answer, and constructed response items. Student achievement on these tests are reported as performance levels, and the school level achievement measure used in this study reflects the percentage of students in the school that achieved distinguished, above mastery or mastery levels of performance on either the mathematics or reading content tests.

Results

Measures of central tendency for the two achievement measures and for the principals' effectiveness and flexibility measures are shown in Table 1 for the 67 schools and respective principals. Achievement scores, as reported by the West Virginia Department of Education, reflect the percentage of students for a given school that achieved a score in any one of the three highest achievement categories on the WESTEST. These categories are labeled as distinguished, above mastery, or mastery. For the sample of schools, the mean percentage of students who earned an achievement of distinguished, above mastery, or mastery was 75.27% in mathematics and 79.43% in reading. The 67 schools were divided at the 50^{th} percentile to create two groups of schools with respect to mathematics achievement and reading achievement. The 50^{th} percentile was determined by the median score for both the mathematics and reading achievement distributions. These scores were 78 and 80 respectively. Those schools in which

78% or fewer students scored at one of the top three levels of performance in mathematics were referred to as low performing schools and those schools with more than 78% of their students scoring in one of the three top categories were referred to as high achieving schools. After grouping the schools with respect to the median mathematics achievement, the prevalence of the four leadership styles, as perceived by the teachers of the school principals, was determined for both the high and low performing schools with respect to mathematics achievement. This same comparison was done for school principals and the school reading achievement scores.

Table 1. *Descriptive Statistics for Mathematics Achievement, Reading Achievement, Effectiveness, and Flexibility (N = 67)*

	Math	Reading	Effectiveness	Flexibility
M	75.27	79.43	46.25	20.33
Mdn	78.00	80.00	46.00	20.00
Mode	79.00	80.00	46.00	20.00
SD	8.41	6.94	3.71	2.31
Skewness	-.71	-.38	.00	-.66
Kurtosis	-.06	.67	.37	1.16

Cross tabulation results indicated that in the high achieving mathematics schools, the coaching style of leadership (S2) was most prevalent. Thirty-one percent of the teachers in these low performing schools rated their principals as coaching. The coaching principal is perceived to provide high direction and high support. The most prevalent leadership style among the low achieving mathematics schools was delegating (S4). Twenty-one percent of the teachers choose this leadership style to describe their principals' expected behavior. The delegating style can be described as low support/low direction of the principal.

The most prevalent leadership style among schools with high reading achievement was the delegating leadership style (S4); 34.5% of the teachers indicated that their principals led with low support/low direction. In comparison, most teachers in schools that scored low in reading achievement perceived their principal as having a coaching leadership style (S2). The directing (S1) leadership style was least prevalent among principals in high achieving math schools and low achieving reading schools. This style is characterized as a high direction/low supporting principal. In contrast, the low achieving mathematics schools found two leadership styles to have the same number of responses. The two styles of choice were directing (S1) and supporting (S3), with 21.1% of the teachers rating their principals as directing and 21.1% rating their principals as supporting leaders.

Tables 2and 3 show that there is very little difference in the mean effectiveness and flexibility scores among the high and low reading achievement groups. Similarly, there is very little difference in the mean flexibility and effectiveness scores among high and low achieving groups with respect to mathematics. Table 4 shows that bivariate correlations between reading achievement and math

achievement were very high (r = .70, p < .01). Neither flexibility nor effectiveness is significantly related to either math achievement or reading achievement, and they are not significantly related to each other. These results suggest that effective principals, as perceived by their teachers, can be either flexible or nonflexible, and they can be found in both high and low achieving schools.

Table 2 *Descriptive Statistics for Effectiveness and Flexibility Scores Among Schools with High and Low Achievement in Mathematics*

	M	*N*	*SD*
Low-achieving schools			
Flexibility	20.32	38	2.70
Effectiveness	46.08	38	3.33
High-achieving schools			
Flexibility	20.34	29	1.71
Effectiveness	46.48	29	4.20

Table 3 *Descriptive Statistics for Effectiveness and Flexibility Scores Among Schools with High and Low Achievement in Reading*

	M	*N*	*SD*
Low-achieving schools			
Flexibility	20.10	38	2.53
Effectiveness	46.34	38	3.86
High-achieving schools			
Flexibility	20.62	29	1.97
Effectiveness	46.14	29	3.56

Table 4 *Bivariate Correlation Coefficients Among Mathematics Achievement, Reading Achievement, Effectiveness, and Flexibility*

	Math	Reading	Effectiveness	Flexibility
Math	1	--	--	--
Reading	.70**	1	--	--
Effectiveness	.19	.08	1	--
Flexibility	-.09	.03	-.03	1

** p < .01

Standard regression analyses were used to determine if principals' flexibility and effectiveness, as perceived by their teachers, can predict mathematics and reading achievement aggregated at the school level. The regression model for predicting reading achievement from principal flexibility and effectiveness scores was not significant, (R^2 = .01, F = .25, p > .05). Neither the standardized regression coefficient for flexibility (β = -.03, p > .05) nor the standardized regression coefficient for effectiveness (β

= .08, $p > .05$) was significant. Both the regression analysis and Pearson correlation analysis showed that there was no significant relationship between the principal's flexibility scores and reading achievement ($r = .03$, $p > .05$); it was therefore concluded that there is no relationship between school principals' flexibility and the aggregate reading achievement of their students. Further, neither the regression coefficient nor the Pearson correlation coefficient estimate of the relationship between school principals' effectiveness and reading achievement was significant ($r = .08$, $p > .05$); therefore, it was concluded that there is no relationship between principals' effectiveness and reading achievement.

The regression model for predicting mathematics achievement from principal flexibility and effectiveness scores was not significant, ($R^2 = .04$, $F = 1.41$, $p > .05$). Neither the standardized regression coefficient for flexibility ($\beta = -.08$, $p > .05$) nor the standardized regression coefficient for effectiveness ($\beta = .02$, $p > .05$) was significant. Because both the regression analysis and Pearson correlation analysis showed that there was no significant relationship between the principal's flexibility scores and mathematics achievement ($r = -.09$, $p > .05$), it was therefore concluded that there is no relationship between school principals' flexibility and the aggregate mathematics achievement of their school. Further, because both the regression coefficient and Pearson correlation coefficient estimates of the relationship between school principals' effectiveness and mathematics achievement ($r = .19$, $p > .05$) were not significant, it was also concluded that there is no relationship between principals' effectiveness and mathematics achievement.

Discussion

School systems across West Virginia are failing to meet the AYP mandates of NCLB (2002). Achievement data for subgroups of students are alarming, and educators must find solutions to narrow the achievement gap. This study found no significant relationships between school principals' effectiveness and flexibility and aggregate school-level achievement in either mathematics or reading. It is widely accepted that principals have an effect on student achievement. The manifestations of effective leadership must be studied to determine the leadership behaviors that effect school and student success in this era of accountability. While many definitions exist in regard to effective leadership, most researchers have found that leadership affects schools in various aspects. Mediating variables such as teacher morale and school climate potentially conceal the relationship between leadership styles and student achievement. Including measures of teacher morale and school climate with leadership measures may reveal significant relationships because principals may affect student achievement through their affect on teacher morale and school climate.

These insignificant findings of this study do however offer significant implications. In any account of educational history, the turn of the 21st century and the passage of NCLB will be remembered as the beginning of a new era in accountability for student achievement. With the change in practice that accompanied change in policy, school principals are among other educators who find the pressures of accountability to be stressful and the mandated curriculum in opposition to their ideological beliefs regarding the goals of education. School administrators are joining other fellow educators and leaving

the profession in opposition to the criticism and sanctions garnered because of poor student achievement.

The media are quick to spotlight failing schools and target their principal and teachers as responsible for low achievement and minimal improvement in achievement with time. The insignificant findings of this study suggest that a principal's effectiveness is not reflected in a single index of student achievement and therefore, student achievement should not be used as the sole criteria for determining principal effectiveness. Reform initiatives for evaluating school personnel should consider multiple measures. Results from single indicators of performance should not be considered as valid indicators of either student achievement or school personnel performance, especially in consideration of performance awards, either monetary or otherwise and either individually or at the school level. These findings should inform change in the procedures for evaluating school personnel. Evaluations that rely on the perceptions or observations of one stakeholder do not adequately reflect the principal's performance. Improvements in the validity and reliability of measures and methods for evaluating principals, in addition to measuring attributes such as instructional leadership, teacher morale and school climate, will provide a more comprehensive and fair evaluation of school principals.

The findings of this study support the contention that the principal is not the single individual to be responsible for school wide achievement. As such, school leadership is to be viewed as a collaborative effort and involves the fostering of relationships among teachers, community, parents and administration in the efforts to improve student achievement. The education community should offer guidance and support to school principals as opposed to targeting the principal as responsible for failure. When personnel can work in an environment that encourages reflection on strengths and weaknesses and encourages professional development opportunities for growth, they will then be eager to go to school and better serve the needs of children.

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CAN A BUSINESS ETHICS COURSE AFFECT ACADEMIC DISHONESTY?

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ABSTRACT

Academic dishonesty is a concern with both instructors, who must deal with the unethical behavior, and business practitioners, who feel this unethical behavior leads to unethical professional behavior as these students graduate and enter the workforce. Many in both groups believe that student behavior can be modified, corrected, or shaped so that unethical behavior is reduced, both in the classroom and after graduation. The purpose of this study is to assess the effects of a business ethics course on students' level of academic dishonesty. The effects are assessed by a pretest and posttest of multiple sections of an environment of business course with an ethics component. Several hypotheses are proposed based on several types of academic dishonesty. New measurement scales were developed based on previous work in the area. The results revealed a decrease in academic dishonesty during the course, but only in one of the five factors analyzed. Conclusions, limitations, and future research directions are discussed and interesting questions are raised regarding the business school curriculum and how it is addressing ethics.

COMBATING PLAGIARISM IN HIGHER EDUCATION: A PROACTIVE APPROACH TO ACADEMIC INTEGRITY

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ABSTRACT

Student plagiarism has become one of the most prominent challenges to academic integrity facing educators in higher education. Many institutions resort to the use of expensive plagiarism detection software services while others provide students with learning experiences specifically focused on avoiding plagiarism to ameliorate this problem. The authors report on a study that examined the effects of integrating documentation tutorials in graduate level Education courses on the number of incidences of detected plagiarism. Findings revealed that instruction on documentation cut the instances of plagiarism in the experimental groups approximately in half compared to the control groups. The authors conclude that faculty should include tutorials on proper documentation in their instruction while applying consequences for academic misconduct consistently.

Introduction

Student plagiarism has become one of the most prominent challenges to academic integrity facing educators in higher education. Tricia Bertram Gallant (2008), the Academic Integrity Coordinator at the University of California, San Diego referred to a recent "moral panic" about widespread academic dishonesty, including all levels of educational institutions as well as student, faculty, and administrative fraud. At the institutional level, strategies for managing this phenomenon vary widely but usually fall into one of two categories: viewing academic dishonesty as a moral issue or as a crime (Blum, 2009). Gallant (2008) identified the same two categories as integrity and rule compliance, respectively. In the first category, the institution creates an honor code under which students agree to uphold honorable behavior. In the second category, rules, regulations, enforcement procedures, and disciplinary action are implemented to force students to follow ethical procedures.

In this age of technology, where even elementary school students know that cut-and-paste refers to electronic text editing rather than scissors and glue, neither approach seems to be as effective as it once was. While honor codes and strict rules and punishments may still be necessary, they are not sufficient. Several educators and researchers (Blum, 2009; Gallant, 2008; McCabe, 2005; McLafferty and Faoust, 2004) have suggested that educational institutions need to deploy a combination of approaches. In addition to instituting honor codes or explicit rules and procedures, these codes and rules must be supported at the classroom level, between educators and their students. Further, because understandings of what constitutes plagiarism and what does not are often vague and differ between academic disciplines and between individual instructors, the concept needs to be clearly presented to students in the context of the specific academic environment – the classroom. Gallant (2008) suggested that the only effective way to approach this multidimensional issue is to reframe the goal: instead of laboring to apprehend and penalize students for plagiarism, institutions should focus on providing a culture that supports academic integrity in both students and faculty, and educators should focus on ensuring that their students are learning.

With a focus on learning in mind, the authors of the present study examined the effects of providing education about plagiarism and proper documentation on the number of incidents of plagiarism in graduate classes in two different universities in the southern United States. They compared the number of detected plagiarism cases in classes which received tutorials about proper documentation to the number of cases in those classes which did not receive such education. In the next sections, the authors provide a review of the recent literature on academic integrity and plagiarism, then discuss the methodology, findings, and implications of their study.

Literature Review

According to many educators and researchers, academic dishonesty has reached new heights (McCabe, 2005; Nagin & Pogarsky, 2003; Smith, Dupree, & Mackay, 2005; Smith, 2000). Smith (2000) found that over fifty-nine percent of students at a liberal arts college admitted on a survey to some form of plagiarism. Almost forty-nine percent of the students intentionally copied a sentence, phrase, or a paragraph from a source without citing it. Furthermore, Smith found that over twenty-seven percent copied or modified research papers from other students.

McCabe (2005) administered a survey of forty thousand undergraduate students in sixty- eight universities in the United States and Canada. He found that twenty-one percent admitted some incident of cheating on an exam while fifty-one percent admitted to serious cheating on a written work. He also reported that four out of five of the students who admitted to cheating on a written assignment had used the Internet, either cutting and pasting from online sources or downloading whole papers. He found that younger generations were more “lenient” in their definitions of the actions that constitute plagiarism. Interestingly, McCabe also reported that many students were troubled by the lack of response from their institutions in addressing academic misconduct. When the students were aware of

others cheating and felt that the faculty were ignoring it, they were more likely to choose to cheat or plagiarize in order to maintain high grades in the competitive environment of the university.

On the other hand, faculty reported that they found the institutional process that dealt with academic misconduct to be overly bureaucratic and legalistic. Faculty also complained about the lack of support from administrators in addressing cases of academic misconduct (McCabe, 2005). Similarly, Sampson (2005) argued that many administrators were reluctant to address such incidents and support their faculty. She pointed out that most higher education institutions have policies that address academic misconduct which provide students with the benefits of due process, but which place a huge burden of proof on the professor, adding that only the "very brave educator is willing to wade these waters"(p.6).

Consequently, Jane Halonen of James Madison University asserted, "It's demoralizing to think that students might be taking advantage of you, and it's awful to feel like a detective. It's a part of being a faculty member that people don't enjoy" (as cited in Murray, 2002, p. 22). Some faculty have argued that it is not their responsibility to seek out and address cases of student academic dishonesty, claiming "they are paid to be teachers, not police, and that, if students have not learned the difference between right and wrong by the time they get to college, it's not their job to teach them . . ." (McCabe, 2005, p. 28).

Institutions that have made academic integrity a priority and placed the responsibility of such integrity on students have reported significantly lower rates of academic misconduct (McCabe, 2005). According to Jackson and Ayres (2006), administrators at Collin Community College in Texas enacted an honor code system as a result of the pleas of the college instructors, while administrators at the University of Texas at Dallas offered seminars on plagiarism at the beginning of each semester to combat this problem.

Grassian (2004) contended that students lacked understanding of the actions that constituted plagiarism. Therefore, she proposed a comprehensive program to battle information illiteracy. She asserted that such programs could be offered by librarians in a series of classes which would include the difference between search engines and data bases, proper methods of citing and documenting sources, and evaluation of sources. Grassian also recommended that faculty members clarify their expectations to both librarians and students, as McCabe (2005) maintained.

Vernon, Bigna and Marshall (2001) presented a two-fold approach to combat plagiarism. They proposed that instructors provide education on the actions that constitute plagiarism and the consequences of such actions. They also advised informing students that the instructors were technologically literate in order to reduce the number of incidents of plagiarism in their courses.

Similarly, Scanlon (2003) advocated the implementation of an awareness campaign on university campuses to battle academic misconduct. He advised that institutions make expectations and policies explicit and educate students of fair usage in academia. McLafferty and Faoust (2004) agreed that the most effective deterrent of plagiarism was to educate the students on the topic. Sampson (2005) shared

this perception, asserting that "The school must provide an environment where educators are supported in their efforts to educate against and penalize academic misconduct. If the purpose of education is to teach people, then expulsion needs to be the last course of action rather than the first" (p. 10).

The use of specific, faculty generated topics and specific formats have also been suggested in order to make plagiarism more difficult for students (Campbell et al., 2000 and Mellow, 2000, as cited in Smith, Dupree, & Mackey, 2005). However, Smith et al. (2005) argued that such practices discourage students' creativity and curiosity by limiting their choices and forcing them to pick topics for projects they may not be interested in pursuing.

Sterngold (2004) commented on the ease with which students resort to plagiarism due to the availability of modern technology. He cited reasons for the increase in plagiarism such as the billions of websites available online, students' weak writing skills, and advanced degree programs which dropped many of the comprehensive writing assignments such as theses. He advocated that instructors provide students with tutorials on proper paraphrasing, documentation, and the process of writing while still enforcing a system of consequences. Murray (2002) also recommended a combination of approaches, urging that teachers explain the actions that they considered plagiarism to their students, set rules, have students practice documenting resources, limit sources students can use, assign phased papers (students turn in their papers in phases such as outline, rough draft, etc.), and use software programs to check students' work.

Clearly, much of the literature recommends combining institutional rules with classroom instruction, but rarely do the researchers suggest how this classroom instruction should be implemented or provide empirical data demonstrating the results. In the following section, the authors report their research on the effects of providing informational sessions on plagiarism and proper documentation on the number of reported incidents of plagiarism. They describe their methodology and share the results of their study.

Methods and Results

The researchers examined the effects of providing education about plagiarism and proper documentation on the number of incidents of plagiarism in graduate classes from two different universities in southern United States and in two different areas of study, research/statistics and curriculum leadership. The researchers closely monitored assignments submitted by students in Master's level courses during four semesters. The results of that monitoring appear in Table 1 below. The researchers used a commercial plagiarism "catcher" and set the level of tolerance at the 20% mark in order to accommodate bibliographic references and general recurring phrases which could not be avoided but which often appeared as uncited quotations (for example, "No Child Left Behind"). The authors also read the texts reported by the software as plagiarized to make certain that the text was intentionally plagiarized. For example, the software might have reported a text to be plagiarized if the

student forgot to include a quotation mark at the beginning or the end of specific text, and the instructor might have to override the program and discount such an incident.

Until the final semester of observation, the percentage of students who plagiarized was consistently one-quarter to one-third of the enrollment in these courses, and the percentage of their work that was lifted without appropriate citation was consistently one-quarter of their papers.

Table 1. Summary of Results

Group	Number	Detected incidents	Percentage
No Tutorial session	142	50	35.2%
Tutorial Session	192	33	17.2%

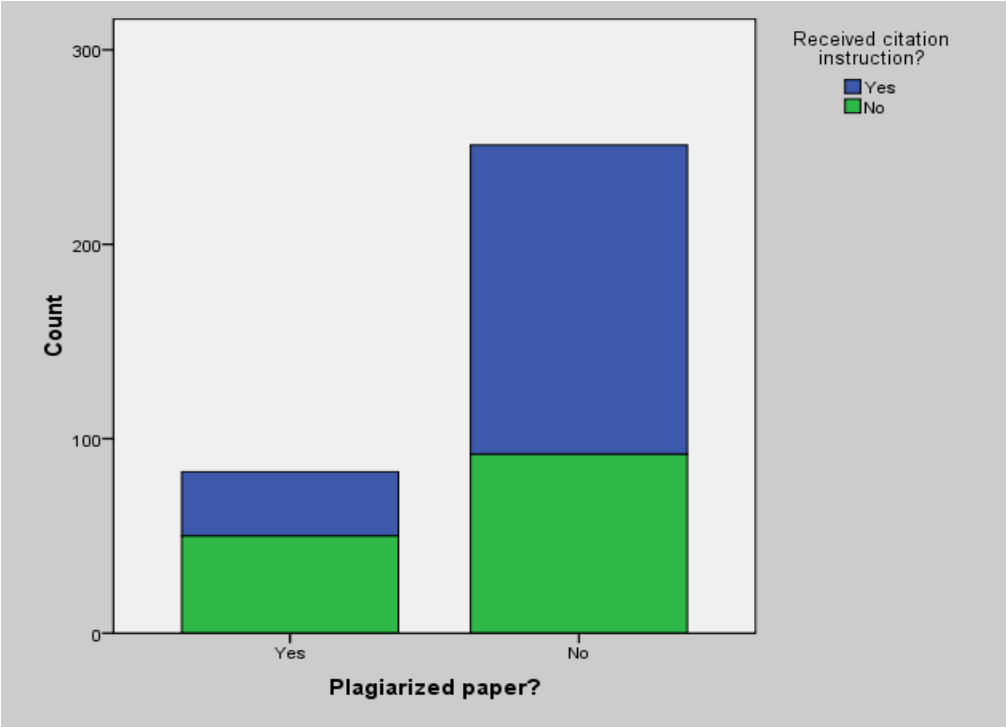
In the semester immediately following the analysis of raw data from the classes, each teacher divided her classes between those which would receive specific targeted instruction in paraphrase and citation methods and those which would not. The assignments from each group were carefully monitored, using a plagiarism detection program, for instances of uncited quotations.

Instruction in paraphrase and citation methods included direct instruction, including examples and non-examples, about the ethics of scientific writing, plagiarism, the need for citations, and the nature of paraphrasing. Examples were drawn from student work in previous semesters, and screen shots of the plagiarism detection program reports were included, so that students could view the level of specificity identified by the plagiarism catching software system. During this class session, students practiced paraphrasing and citing materials and sources, so that appropriate variations could be discussed. Further, students were invited to submit rough drafts of their work in advance of the due dates in order to receive feedback on their work before they submitted the final assignments to be graded.

At the end of the semester during which this instruction was completed, there was a significant difference in results on the final project between the classes which had not received the instruction about plagiarism and those which had. Classes which had *not* received the tutorials or completed practice exercises included 142 student projects, 50 of which showed incidents of uncited quotations, a total of 35.2%. Classes which had received the tutorials and completed practice exercises included 192 student projects, only 33 of which showed incidents of uncited quotations, a total of 17.2%. The pattern of uncited quotations remained the same across both universities and both areas of study: about one third of the project papers in classes which had not received instruction about citations contained uncited quotations. The trend among the classes which had received direct instruction dropped to half the established pattern.

An analysis of variance (ANOVA) was conducted to evaluate the differences between the two instructional conditions (did not receive supplemental instruction in citation, did receive supplemental instruction in citation) on median change in number of incidents of plagiarism. The results of this test revealed that the number of incidents of plagiarism differed significantly between the two instructional conditions, χ^2 (1, N = 334) = 14.157, $p < .001$. Effect size was calculated with Eta square (η^2) = .0425, which indicated a relatively small effect size. The results of this ANOVA are shown in Figure 1.

Figure 1. Results of ANOVA Analysis



Conclusion

Sometimes students commit plagiarism out of ignorance of the rules of citation rather than from deliberate misconduct. This sentiment was supported by McCabe (2005) and Gallant (2008). The authors found that providing students with education on proper documentation and plagiarism reduced the number of reported incidents of plagiarism by half in their courses. They contend that students not only need such sessions to learn ways properly to document their material and write scholarly papers, but also to receive a clear message that their instructors have provided them with such education and will not accept such misconduct in their classes. Faculty members can also arrange for librarians in their

institutions to offer such courses as part of the mandated requirements for their courses, as suggested by Grassian (2004).

Providing these tutorials early in the courses and in turn reducing the number of incidents of plagiarism could save faculty members time and frustration later in the course. It could also reduce the amount of time administrators spend dealing with these incidents and applying the consequences prescribed by their institutions.

Instructors today cannot deny the enormous benefits they have gained from the ease and availability of resources provided by the Internet for their classes. However, they must realize that modifications in the ways they teach their courses and the nature of their course assignments are needed to combat the negative effects of such media. Obviously, the results of this study lend support for a national call to offer such an education in our institutions. Faculty must include tutorials on proper documentation and stay consistent in applying consequences for academic misconduct if we are to put an end to such practices.

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DEVELOPING A FORENSIC ACCOUNTING COURSE

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ABSTRACT

Forensic Accounting is a rapidly evolving field. Therefore, developing a Forensic Accounting course can be quite daunting. This text will examine some of the critical components necessary for proper development of a Forensic Accounting course. Forensic Accounting is a complex topic making it necessary for students to first learn the extensive terminology followed by the concepts and finally the application of those concepts. Setting course objectives and selecting a text or texts is the initial step. The Professor can then begin to form the course outline being sure to include topics such as occupational fraud, interviewing skills, organized crime, financial statement fraud and other important topics. Case studies and group projects should be considered a vital part of a well developed Forensic Accounting course.

FACULTY BURNOUT: SYMPTOMS AND SOLUTIONS

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ABSTRACT

Burnout is defined as "a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment" (Noushad, 2008). Symptoms include dissatisfaction, boredom, frequent illness, forgetfulness, depression, and fatigue. Burnout occurs across all professions, but is particularly evident in occupations such as college teaching. Although initially dismissed as mere "pop psychology" (Maslach et al., 2001), the current research literature attests to the validity of this topic.

Burnout occurs in three stages – (1) An imbalance between resources and demands (stress), (2) negative attitudes and behaviors, and (3) a sense of diminished efficacy – reduced accomplishment. Certain job-related organizational characteristics (workload, job demands, administrative bureaucracy, lack of control, etc.) as well as individual characteristics (age, experience, gender, and marital status) have been shown to contribute to burnout. Research also shows that college faculty are especially susceptible to burnout, particularly those with heavy teaching loads and those serving in adjunct and/or non-tenured positions.

The paper begins with an overview of the literature on burnout with particular emphasis upon practical applications for the professional educator. Examples of psychometric instruments for diagnosing burnout will be critiqued.

The paper concludes with an overview of research-based strategies for avoiding and/ or correcting burnout. Examples of systematic interventions that may be employed by university administrators will be provided. Proactive strategies for individuals will also be addressed including a "wellness" approach (Eastman, 1996), time management strategies, and practical tips for diet and exercise.

MANAGEMENT WITH LOVE

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ABSTRACT

Today, human resource is recognized as one of the most important principles of success in an organization. Therefore, the organizations must strive to implement suitable recruiting systems, and then perform all the necessary actions to keep their employees. Having said that, all the organizations are recommended to view the pattern of engagement relationship of a couple which is filled with compassion, loyalty and love and make a relationship with their employees like engagement period to develop this feeling in the employees that the organization belong to them and they belong to the organization.

In this research we first try to express the engagement relationship of the employees and the organization, and then we will offer some approaches to create and develop such relationships. So, one of the most important duties of human resource managers is developing human values which can be compared with the process of changing a blossom into a flower.

Keywords: engagement relationship of the employees and the organization, employee satisfaction, organizational obligation, commitment organizational efficiency, employees needs levels

Introduction

In human resource structures, the second step after recruiting is keeping them, because the employee are usually recruited based on their knowledge but discontinue their relationship based on their behavior. So, the organizations should apply different patterns to control their employee's behavior.

With a little bit of consideration, we can realize that the most important element in keeping a relationship of a couple is "love". In fact if a relationship filled with love, they will do their best to keep this relationship. So why should not the organizations fall their employees, in the love the organization?

The more care and compassion people give to each other, the more easily the relationship is kept. Then why should not the organizations try to create a compassionate relationship with their employees?

Through applying this pattern, the organizations will make an effort to create such compassionate relationship like the engagement relationship with their employees which will finally result in their being more loyal and committed to the organization. Having created such relationship, the organizations can say that they have engaged employees.

DDI's (2007) research reveals that only 19 percent of employees are highly engaged. The Corporate Executive Board (2004), looking at levels of engagement across 50,000 employees around the world, placed only 11 percent in what they dubbed "true believer" category. Towers Perrin's recent "Talent Report" (2003) is slightly more optimistic, finding just 17 percent of the 35,000 employees surveyed to be highly engaged.

Different people have different roles in creating such compassionate relationship. For example the human resources managers as one of the most important principles of creating engaged employees should have the capabilities, required knowledge and awareness. Based on that, human resources management can be defined as the knowledge of recruiting and implementing people on jobs in such a way that they do their jobs compassionately.

The concept of engagement period in organizations

Creating a compassionate relationship between employees and organization will cause that people enjoy being together and try to make this relationship stronger, like engagement period. For the word engagement a variety of definitions have been defined as follows:

- DDI (2007) defines engagement as "the extent to which people enjoy and believe in what they do and feel valued for doing it." This definition consists of 3 basic parts as below:

Enjoyment—People tend to receive more pleasure and satisfaction from what they do if they are in jobs or roles that match both their interests and their skills. Look, for example, at the high failure rate of sales managers who were promoted because they were excellent salespeople. Some fail because they do not have the skills to manage, but we find a greater number stumbling because they discover that they derive more enjoyment from selling than they do from coaching others to sell. And it's not just the functional tasks that add to or detract from enjoyment. Some individuals thrive in a team environment versus one in which they work more independently. Some people like jobs that require travel, while some prefer not to travel at all. Others like a high-risk/high-reward bonus plan, where others prefer a more stable, predictable salary.

Belief—if people feel they are making meaningful contributions to their jobs, their organizations, and society as a whole, they tend to be more engaged. The connections between what people do every day and the goals and mission of the organization is crucial to engagement. Walk into any children's hospital, and you will find caregivers who passionately believe in their roles and the mission of the hospital. You also will find high disdain for anything that gets in the way of providing quality care. Likewise good trainers believe in what they do and like having opportunities to see others grow and develop.

Value—People want to be recognized and rewarded for their contributions. Rewards and recognition come in many forms, including competitive compensation packages, a healthy work/life balance, and V.I.P. sales trips. But perhaps more important is the heightened sense of worth employees feel when

their leaders take just a few minutes to let them know that they are doing a great job and that their contributions are valued and appreciated.

- Harter, Schmidt & Hayes (2002) define employee engagement as a measure of the combination of an individual's involvement and satisfaction with as well as enthusiasm for work'
- Lucey, Bateman and Hines (2005) interpret the Engagement as measuring "how each individual employee connects with his or her company and how each individual employee connects with their customers"
- Fleming, Coffman and Harter (2005), Gallup Organization researchers, use the term committed employees as a synonym for engaged employees.
- Wellins and Concelman (2004) call employee engagement "the illusive force that motivates employees to higher levels of performance." This coveted energy is similar to commitment to the organization, job ownership and pride, more discretionary effort (time and energy), passion and excitement, commitment to execution and the bottom line. They also refer to it as feelings or attitudes employees have toward their jobs and organizations.
- Robinson, Perryman and Hayday (2004) define engagement as a positive attitude held by the employee towards the organization and its values. An engaged employee is aware of the business context and works with colleagues to improve performance within the job for the benefit of the organization.
- For Seijts and Crim (2006) employee engagement means a person who is fully involved in, and enthusiastic about, his or her work. Engaged employees care about the future of the company and are willing to invest the discretionary effort to see that the organization succeeds.

The importance of creating engagement relationship in an organization

The importance of creating engagement relationship of an organization with employees in order to train engaged employees can be reviewed from different aspects.

For example, Gallup (2003) estimates that unengaged workers in the United Kingdom cost their companies $64.8 billion (U.S.) dollars a year. And, the United Kingdom is far from the worst. In Japan, where only 9 percent of the workforce is engaged, lost productivity is estimated to be $232 billion each year.

Also Mercer Delta research (2008) shows, conversely, that engaged employees deliver four times more value to the organization than non-engaged employees.

Towers Perrin (2006), correlating employee engagement levels with financial results of 50 global companies, found those with high employee engagement had a 19% increase in operating income and 28% increase in earnings per share, compared to a drop in operating income of 32% and earnings per share decline by 11% for those with low levels of engagement!

Watson Wyatt (2008) confirmed that practices widely accepted as achieving higher employee engagement - employee involvement, sharing information and getting feedback – are directly related to a 2.2% increase in shareholder value. Translate that percentage into cash and you have some big numbers!

DDI (2005) believes that creating engagement relationship between the employees and the organization will result in more loyalty of personnel, customer's satisfaction, profit and income growth plus durability of employees. Also the researches carried out by Coffman and Molina (2002) and Gallup institution (2005) approve the DDI's research.

Therefore, nowadays the organizations try to change the traditional thinking such as "first the employees should prove their loyalty, and then they will be trusted" to increase the element of trust to the employees cause them to be more loyal to the organization, Because trust is one of the most important factors in mutual relationships.

How to create engagement relationship in an organization

Considering the importance of such relationships, many scholars have presented different models. In this research, in order to make a systematic trend to perform such models, the following approach is recommended to implement in organizations.

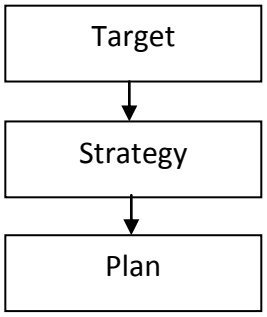


Figure 1- the systematic process of creating engagement relationship within an organization

In this approach, the main target is considered improving the relationship of employees with organizations like the engagement period. In order to achieve this, the organizations should define some strategies. DDI (2005) defines some of these strategies as follows:

- Long-term consideration to the issue of creating a mutually stable relationship with employees.
- Improving the quality of "leadership" and substituting it with "management" in organization Developing the organization systems
- Considering the interests, motivation and capabilities of the employees
- Touching the heart of employees

Table 1 shows how these plans are related to the strategies which are developed by different scholars.

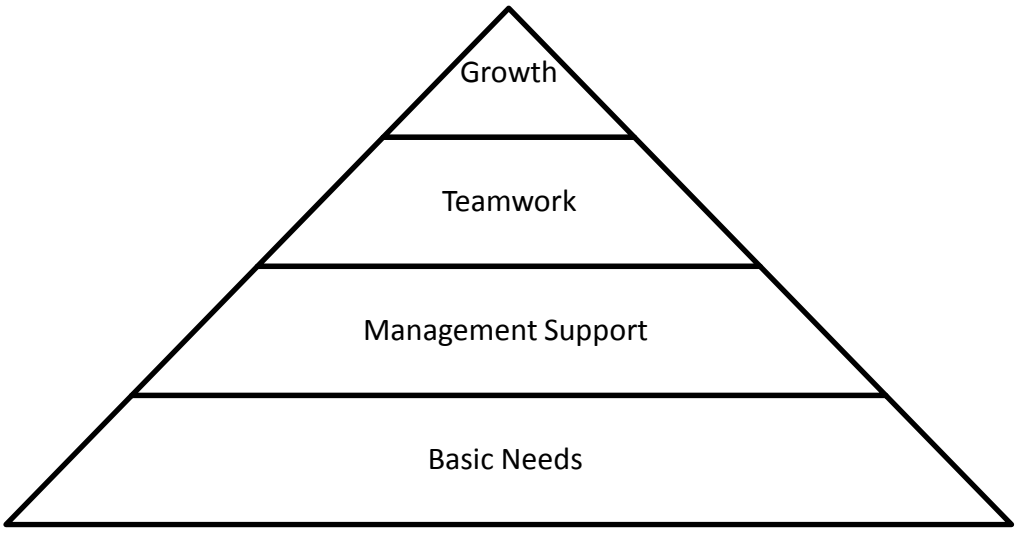
Table 1- the relationship of strategies with plans

Row	Strategy	Plan
1	Long-term consideration to the issue of creating a mutually stable relationship with employees.	Investment for development of human resources[1] (Woodruffe, 2006)
		Performing activities to improve the sense of pride from the employees to the organization[2] (Woodruffe, 2006)
2	Improving the quality of "leadership" and substituting it with "management" in organization	Improving the situation of relationship of employees with their direct supervisor (DDI,2005)
		Commitment of top management on the importance of such relationship in the organization through a formal notice (DDI,2005)
3	Developing the systems of the organization	Creating promotion system (DDI,2005)
		Making a systematic methods for: recruiting, interview with employees upon leaving, and finding the reasons of their presence in organization (Anonymous, 2005)
		Creating an employee satisfaction measurement system (Woodruffe, 2006)
		Creating a fair payment system (Macload & Clarke, 2008)
4	Considering the interests, motivations, and capabilities of the employees	Creating different working teams in organizations to have effect from each other in different mental or skill aspects (DDI,2005)
		Creating a fresh work environment[2] (Anonymous, 2005)
		Creating a reward system suitable for the function level of employees[2] (Anonymous, 2005)
		Recognition of motivation factors (Macload & Clarke, 2008)
		Increasing the awareness of employees to the targets of organization and their duties and role (Seijts and Crim, 2006)
		Making work challenges and hard standards for employees (Woodruffe, 2006)
5	Touching the heart of employees	Assessing the positive activities of employees and thanking them at least by some sentences. And also defining their role in the success of the organization (DDI,2005)
		Suitable behavior with each employee (Woodruffe, 2006)
		Helping the employees to remove the abstacles (Macload & Clarke, 2008)
		increase trust of employees to the organization through decreasing the number of employing and firing (Woodruffe, 2006)

How to measure the amount of relationship between the employees and the organization?

Based on the researches in Gallup institution (1995) twelve questions were chosen as the main questions which reveals the situation of relationship between employees and the organization. Any organization can have a survey periodically on the situation of the relationship with the employees and with the feedback of this survey, try to create engagement relationship with the employees. The twelve questionnaire questions of Gallup have been defined with the following four levels.

Figure 2- employees needs levels



Basic needs questions:

1. Do you know what is expected of you at work?
2. Do you have the materials and equipment you need to do your work right?

Management support questions:

3. At work, do you have the opportunity to do what you do best every day?
4. In the last seven days, have you received recognition or praise for doing good work?
5. Does your supervisor, or someone at work, seem to care about you as a person?
6. Is there someone at work who encourages your development?

Teamwork questions:

7. At work, do your opinions seem to count?
8. Does the mission/purpose of your company make you feel your job is important?
9. Are your associates (fellow employees) committed to doing quality work?
10. Do you have a best friend at work?

Growth questions:

11. In the last six months, has someone at work talked to you about your progress?
12. In the last year, have you had opportunities at work to learn and grow?

Conclusion

Considering the results of the survey, it was proved that there is a direct relationship with criteria likes profit, income, customer's loyalty, and all the relevant criteria with the efficiency of the employees. Therefore the organizations should think up of solutions to increase efficiency, otherwise they will fail. Now one of the main factors in increasing efficiency is creating an atmosphere in the organization where the employees fall in love with their organization. So like the relationship of a couple in engagements period which is filled with compassion, loyalty and love, the organization should provide the relationship with his employees like engagement period to make this belief in employees that they should to their best for keeping this relationship. So that in this environment employees do their best to develop the organization and the organization will cause to develop the employees.

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GERONTOGRAPHICS AND MASS MEDIA PREFERENCES OF MATURE CONSUMERS

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ABSTRACT

The mature consumer population of Americans ages 55 and older makes up almost one quarter of the US population and continues to grow. This relatively wealthy segment is crucial for marketers to understand in terms of preference for traditional mass media consumption. The purpose of this research is to explore the socialization of the mature consumer segment with a focus on understanding the accompanying changes in their preferences in consumption of mass media. The authors examine the antecedents of life events, mediated by old age orientation, with magazine usage as the outcome variable. By focusing on the effects of life changes on mature consumers' consumption-related lifestyles and mass media usage, this study incorporates gerontographic segmentation in an attempt to enable marketers to develop better targeted campaigns for the lucrative mature consumer market.

Keywords: Gerontographics, Mature consumers, Mass media consumption, Market segmentation

Introduction

While new forms of communication with customers continue to evolve, media usage in the form of simultaneous media exposures (Pilotta et al. 2004) to traditional advertising and consumers' preferences for print and motion pictures (Hirschman 2003; Kozinets 2001) remain important topics for marketing managers to understand. The purpose of this research is to explore the preference of mass media consumption in the segment of mature consumers. The authors examine the antecedents of life events, mediated by old age orientation, with magazine usage as the outcome variable. This study focuses on understanding the socialization of the elderly and the accompanying changes in their preferences in consumption of mass media. By focusing on the effects of life changes on mature consumers' consumption-related lifestyles and mass media usage, this study enables marketers to develop better targeted campaigns for the lucrative mature consumer market.

As Americans live longer, the number of mature consumers in the United States is making a marked increase. The group of Americans over the age of 65 is currently the fastest growing population in the US and Census projections show that by the year 2040, the nation is likely to have more people over age 65 than under age 21 (Usdansky 1992; Hilt 2004; US Census Press Release 2006). In terms of buying power, Americans over the age of 50 control half of the country's discretionary income and 75% of all personal assets (Grey Advertising 19888; Mason 2002; Wolfe 1987; Hilt 2004) so it is imperative that marketers focus on this segment's spending habits, mass media usage, and consumer behavior.

Review of Previous Literature

Life Changes

Sociology research has described the life course as an intertwined combination of roles such as grandparenthood and widowhood (Mathur and Moschis 2005; George, 1993; Hagestad & Neugarten, 1985). This Life Course Paradigm emerged in the social sciences and has now expanded to other areas including the marketing literature. This multilevel phenomenon focuses on the social trajectories of individuals and their developmental pathways (Elder 1994). Individuals oftentimes perceive themselves to be in a particular stage of life, a perception which determines their tasks, behaviors and perspectives. Consumer behaviorists have become interested in the life course because consumer behavior may be viewed as the result of transitions into new roles. As a consumer develops into maturity their changing relationships, life experiences and important events signify changing social roles.

Old age orientation and self-concept theory

Previous research supports the idea that old age orientation is a variable that captures the notion of how old one feels and is therefore is better suited to predict behavior than actual years of age (Mathur and Moschis 2005; Van Auken and Barry 1995). As Gurin et al. (1980) point out, people ages 60 and above perceive that identification with an age group is often as pronounced as class and race identification and even more pronounced than sex identification. Turning to theory based on self-

concept pioneered in research on appearance-based self-concept (e.g., Altabe & Thompson, 1996; Geller, Johnston, & Madsen, 1997) concerning mortality awareness as related to biological change, disease or functional disability (Mathur and Moschis 2005; Karp, 1988) we look to previous findings about the relationship between biological and old age orientation in the context of health status (e.g. Barak & Stern, 1986; Logan, Ward, & Spitze, 1992; Markides & Boldt, 1983; Gwinner & Stephens, 2001). This research shows that as people get old and they tend to "slow down" due to biological change, disease or functional disability, they are reminded of their increasing age and pending mortality. Accordingly, biological changes such as menopause or development of disease common in elders (e.g. arthritis) that serve as indicators of physiological aging, can lead people to feel older in their perception of their old age orientation (i.e. social aging) (Mathur and Moschis 2005; Moschis 2000; Atchley, 1987).

Life events and old age orientation

Age identity may also be affected by events such as retirement or grandparenthood and their accompanying reminders of social significance such as eligibility for senior's benefits and programs (Mathur and Moschis 2005). As consumers grow older, some occurrences generally happen later in the lifecycle such as biological changes as a result of healthier lifestyles, as well as changes based on adoption of changing age-graded roles such as marriage or parenthood, grandparenthood. Likewise, the differential gap between chronological age and old age orientation widens as consumers grow older (Mathur and Moschis 2005; Goldsmith & Heiens, 1992). Behavior may vary according to old age orientation versus the less rich concept of actual age. For instance, young age oriented elderly consumers are more likely to engage in behavior such as frequent dining out or watching television or reading (Barak and Gould 1985; Stephens 1991). This may be due to increased recognition of mortality that comes with reaching the later years of life (e.g. Marshall 1975).

Late adulthood provokes increasing recognition of mortality (Butler 1963; Marshall 1975) and consumers' thoughts and actions that add to their understanding of life are influenced by temporal perceptions (Fraisse 1963) as past, present, or future points of reference guide individuals' thoughts (Holman and Silver 1998; Nuttin 1985; Zimbardo and Boyd 1999). In terms of social roles and life-events, age may be considered in relation to norms relevant to the age at which those events are perceived to occur (Elder 1994). Taking a sociological angle, we view old age orientation through the lens of the life-course perspective (Hagestad & Neugarten, 1985) by focusing on age-related role transitions.

Rahtz, Sirgy, and Meadow (1995) find strong support for the relationship between limited out of home activity and old age orientation. Accordingly, changing life conditions such as major health related events such as major surgery or chronic disease development also affect old age orientation as they remind mature consumers of their age. As social lifestyles change over time social roles that help define self-concept such as "retiree" or "grandparent" are defined as social aging takes place (Mathur and Moschis 2005; Riley, Fonner, Hess, & Toby, 1969). Mathur and Moschis (2005) explain that consistent with Kuypers & Bengtson's, (1973) social-breakdown model, internal or an external cues provoke

responses depicted in a change in one's actions or evaluations that can change a person's self-concept. For example, a person's evaluation of his or her changes in status or roles (e.g. occupation, socioeconomic status) has been shown to have an affect self concept and thus, old age orientation (Mathur and Moschis 2005).

Self-perception

Self-perception is associated with possessions that include body, attitudes, personal relationships, as well as material goods (Belk 1988) and when these possessions are lost in what is known as dispossession (Pavia 1993) that event may be associated with a change in self perception (Andreasen 1984, Belk 1988, Young 1990).

Possessions help people define themselves (Belk 1988) and transitions into new roles requires adjustment of self-concept that may result in consumer behavior (Lee et al 2001). Research suggests that empty nest, retirement, and loss of spouse may spur social isolation that can alter perceived control over one's environment as well as nutritional consumption , contributing to a declining self-concept (e.g., MacNeil & Teague, 1987; Natow & Heslin, 1980) and therefore, social aging may have an effect on biological aging (Mathur and Moschis 2005). Based on Belk's (1988) study that has established that the relationship one has with his or her possessions involves his or her perception of self, we examine how change in old age orientation may be coped with through purchase of new possessions, in particular, purchase of magazines targeted at mature consumers.

Role theory

Role theory involving processes of transitions of role entry and exit marked by events such as transition with socialization from one role to another such as moving into parenthood or life events that occur unexpectedly (Mathur and Moschis 2005; Ebaugh, 1988; Noble & Walker, 1997). Self-identity may change over time with adjustment to scheduled life events such as retirement and transitions into roles that are normally assumed as one ages Mathur and Moschis 2005; Riley et al., 1969). This adjustment may continue for sometime after the role is assumed (Mathur and Moschis 2005; Murrell, Norris, & Grote, 1988) as self-identity morphs to fit the new role (Mathur and Moschis 2005; McAlexander, Schouten, & Roberts, 1993) because self identity is adjusted to fit life events and roles.

Theoretical Model and Hypotheses

Based on previous research and theory as described above the current research employs combined mass media as an outcome variable and examines antecedents of old age orientation in the context of life events and biological and social age to determine how consumer behavior is affected by old age orientation. To develop our hypotheses we focus on life events as predictors of mass media usage. Based on Role theory we use magazine readership as an exemplary outcome variable to show how life events may lead to emergent role changes that are expressed in changes in magazine readership. Magazines such as Prevention, Longevity, Golden Years, Modern maturity, etc., are targeted at mature

consumers and thus can be considered as a media source that is consumed by people who are older (senior citizens) and mature consumers. Following the theory behind the Life Course Paradigm (e.g. Mathur and Moschis 2005; George, 1993; Hagestad & Neugarten, 1985) that shows life events increase with age, and the concept that more aged consumers read those magazines geared toward their segment, we predict there is a direct effect of life events that leads to increased readership of these types of magazines. Specifically, we propose that there is a positive direct effect of the number of transition life events consumers experience and the likelihood of change in their readership of mature consumer magazines:

H_1: The greater the number of transition life events consumers experience, the greater the likelihood of increase in their readership of mature consumer magazines.

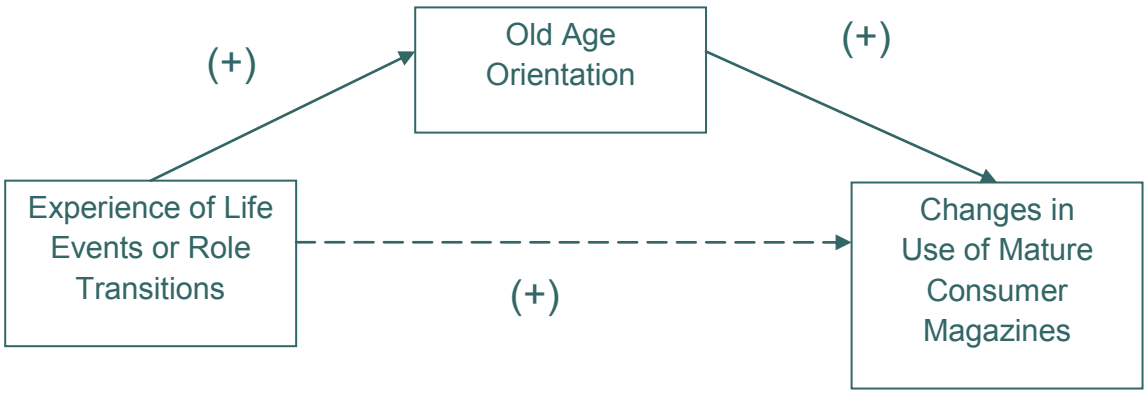
As outlined in our discussion of old age orientation and based on self-concept theory, life events (and their accompanying reminders of social significance) as well as biological changes such as menopause or development of disease common in elders serve as indicators of physiological aging that can lead people to feel older in their perceptions of their old age orientation (i.e. social aging) (see Mathur and Moschis 2005; Moschis 2000; Atchley, 1987). Life events of focus in this study are marriage, birth or adoption of a child, divorce or separation, empty nesting, voluntary retirement and starting a new job or resuming an occupation after a long leave of absence. Therefore:

H_2: The more transition life events that an individual experiences, the higher his or her old age orientation.

Theory of old age orientation suggests that old age orientation (in the form of a concept defined as "cognitive age") captures the notion of how old one feels and is therefore is better suited to predict behavior than actual years of age (Mathur and Moschis 2005; Van Auken and Barry 1995). Therefore as we examine our hypothesized direct effects of life events on change in magazine readership (H_1) and transition life events that an individual experiences, on old age orientation, (H_2) we also test for empirical support of the mediation of the direct effect of life events on magazine readership by the construct of old age orientation:

H_3: Old age orientation mediates the relationship between transition life events and change in readership of mature consumer magazines. The model depicting these hypotheses is found in figure 1.

Figure 1



Sample

Data for our study will be collected via self-administered questionnaires at two different time periods. This form of data collection was chosen in part because allows respondents to perceive greater anonymity. The five years between the first and second data collection allowed collection of rich data which affords investigations of related to changes over time, eliminating the limitations of retrospection. Only participants who indicate that they will participate in future surveys will be contacted for the second survey. The unguided and self-administered nature of the questionnaires will not allow for extensive length or complexity without an administrator to assist in answering questions or holding the participants' attention. In addition to the necessary information regarding the constructs, a variety of demographic information about the individual, including the number of children, socioeconomic status, and employment information will be collected. Responses given to the first survey will be designated as T_1 and responses to survey two will be denoted as T_2. Though data collection focuses mainly on older consumers, it is still desirable to collect data from several younger people so as to obtain a high level of variance in the study variables.

Variables

Changes in mass media preferences

At both time periods, respondents will be asked to indicate which magazines they read most often. Individual magazine names will be collected, coded and classified based upon age-specific target audience during both T_1 and T_2. We are specifically interested in whether or not individuals in fact increase their consumption of "old age" magazines, so in order to calculate this variable, only those magazines targeted at elderly consumers will be included. Changes between period one and period two will be calculated to determine the change in consumption of "old age" magazines from the first survey to the second.

Life events

As part of the analysis, we will use the unweighted score of the number of events occurring to the subject during a specific period of time (see Lee et al 2001). Respondents, at T_2, will be asked to indicate when they most recently experienced a series of life events, "in the past 12 months," "1 to 3 years ago," or "3 to 5 years ago." We choose to focus our analysis on transitional life events to form a six-point index. The measure for this variable will be constructed by summing responses given to the first category for five statements such as "Death of spouse" and "Birth of first grandchild" (in the past 12 months=1, else=0). The final item for this index will be developed by taking a sum of all medical conditions the respondent indicated they had ever received help or treatment and dichotomizing the outcome. This approach was selected in order to provide a more limited form of aggregation focused on the effects of theoretically-related events as suggested by George (1993). Again, the selection and (non)transition designation of these events is guided by theory (George 1993; Lee, Moschis et al. 2001).

Old-age orientation

Old-age orientation will be measured during T_2 using response statements to provide an indirect measure of the person's old-age identity. Respondents will be asked to indicate whether they were concerned "a lot," "a little" or "not at all" regarding seventeen items. These items were developed using thoughts and actions that tend to be experienced and displayed increasingly in later life as suggested by theory and research (Moschis, Mathur et al. 2006) and operationalized using a three-point scale (3 = "I am concerned a lot," 2 = "I am concerned a little" and 1 = "I am not concerned at all").

Discussion & Limitations

As with many cross-sectional studies, the data to be collected are useful in examining the predicted relationships (Lee, Moschis et al. 2001). Consistent with previous research related to life events and consumer behavior, life events and role transitions are important to gerontological studies.

Old-age orientation is expected to mediate the relationship between life events and change in consumption of "old age" magazines. Future research should investigate other mediating variables such as old age orientation or work status. Also, additional research should be conducted with respect to the emerging concept of old-age orientation. It will be important to understand whether old-age orientation is best-suited to consumer behavior studies of the elderly and other ways in which the two may diverge. Research about radio and magazine usage of older adults is certainly lacking. It would also be interesting to conduct further research of the mass media preferences of the elderly and look at whether or not, as people begin to feel older, they begin to increase reliance on forms of media that are targeted toward them as older consumers in terms of content and format.

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ACCOUNTNG FRAUD AND EX-POST PERCEPTIONS: AN MDS APPROACH

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ABSTRACT

While many researchers have studied fraud research, none have studied the perceptions of business people using a method other than basis survey. This paper utilizes the power of Multi-dimensional Scaling to identify the dimensions over which business people find famous accounting frauds to be similar or dissimilar. Based on responses from participants, I identify and attempt to describe three relevant dimensions. These results have implications for educators and practitioners as they seek to better understand high profile fraud cases.

Introduction/Objectives of Perceptual Mapping

Historically, public perception is that Auditors are extremely trustworthy. In fact, in polls, Auditors were sometimes ranked ahead of clergymen in terms of their integrity. That perception changed with a series of landmark accounting scandals occurring over the past decade. The result has been a dramatic increase in regulation, including the Sarbanes-Oxley act, and a decrease in public confidence in auditors. Perhaps the most memorable to the public was Enron. So damning was this scandal that the firm itself declared bankruptcy and even its audit firm, Arthur Anderson, lost the public's trust to the extent that it was essentially forced to close its doors. In an accounting scandal, often both the auditor and the offending firm suffer a long-lasting black eye in terms of public image.

The purpose of this exercise is to determine what aspects of an accounting scandal are the most important and memorable to the public. More broadly, this information might be helpful to more precisely assess how an accounting scandal by one firm will affect other firms. The question to be answered is this: What are the perceived dimensions among firms involved in highly visible accounting scandals?

Research Design of the Perceptual Mapping Study

As a result, I have selected six firms involved in some of the most visible accounting scandals, and prepared a survey asking respondents to rate the similarity of the firms, on whatever dimensions they chose. This type of data is considered decompositional, or attribute free, since it involves no reference to objective attributes. This enables me to produce a composite perceptual map for the subjects.

This method is sometimes referred to as the *paired comparison* method. I had 21 respondents, all either accounting faculty, accounting majors or business majors. The objects themselves are: Enron, ZZZZ

Best, Phar-Mor, AIG, Parmalat and WorldCom. Each of these firms was involved in an extremely visible and egregious accounting scandal. Please note that while ZZZZ Best and Phar-Mor were involved in scandals occurring more than a decade ago, they remain highly visible as common fraud examples, particularly in accounting courses. The data collected then includes 21 individual matrices with similarity ratings for the six objects previously mentioned. The similarity scale ranged from 1 (very similar) to 7 (very dissimilar) and included a total of 15 questions on each survey. Two of the surveys were ultimately excluded—one of the surveys included a pattern indicating that the user selected values without any regard to the objects listed. The other excluded survey, completed in good faith by fraud expert Marcus Odom, included values all equal to 1 (very similar). As a result, the scalar product matrix was equal to zero, and left Perceptual Mapping impossible.

For the reader, I will here include a brief description of the six companies studied:

ZZZZ Best: Founded in the 80's by 'Whiz Kid' Barry Minkow at the age of 16, this company was a fraud from day one. ZZZZ Best was allegedly a carpet cleaning business that was never actually profitable. This firm falsified clients, assets such as receivables and inventory and stole from real clients. The firm even went public, with a market cap of about 100 million dollars before it finally collapsed. Barry Minkow was sentenced to 25 years in prison. Today, he is a preacher.

Enron: Enron was a natural gas supplier. In addition to selling natural gas, this firm offered other firms the opportunity to 'lock in' at a certain price, essentially dealing in derivatives. This firm was considered a blue chip stock, until it was revealed that much of its earnings were due to dealings with special purpose entities. Stated differently, Enron was creating companies, and shoving its expenses and losses onto those companies in order to appear profitable. Eventually, the stock price crumbled as the public realized the true status of the company. The CEO, Kenneth Lay, was convicted of 10 fraud related crimes, but died before sentencing.

AIG: AIG is an insurance firm. Prior to its scandal in 2008, AIG was the 18th largest publicly traded company in the United States. However, AIG suffered a significant blow in public perception when it was fined 1.6 billion dollars for inappropriate accounting. Furthermore, the company allegedly paid other companies money in order to push people to buy AIG's products. The company is still in business, although it still owes the US government and others billions of dollars. It is actively seeking buyers for its assets.

Parmalat: An Italian based manufacturing firm, specializing in specially heated milk. Although the company has been around for decades, it recently attempted an aggressive expansion globally. Many of its new divisions were losing money, and in order to cover up these losses, the company began dealing in derivatives. They also used credit linked notes, in which they essentially create an asset from nothing. In addition, Parmalat forged a document from Bank of American stating an account balance of 3.95 billion dollars.

WorldCom: A telecommunications firm that was under immense pressure to produce profitability and growth during the tech boom. The firm's main fraud was to capitalize expenses. That is, instead of claiming the cost of building communication lines as an expense, they claimed that these costs were an asset. This accounting treatment is inconsistent with GAAP and industry practice. The resulting overstatement of assets was approximately 2.7 billion dollars.

Phar-Mor: A drugstore chain. This company was relatively stable except that the owner needed money to pay for outside business ventures, such as the World Basketball League, which was not financially viable. In order to cover up the funds he diverted, the owner helped Phar-Mor overstate its inventory. In essence, auditors were told that Phar-Mor had boxes of inventory that were actually empty or did not exist. Eventually, both Phar-Mor and the World Basketball League closed their doors.

Assumptions of Perceptual Mapping

The assumptions of Multidimensional Scaling are few. MDS is extremely flexible. In contrast to more traditional techniques, MDS makes no assumptions about the distribution of the data. Based on the global measure, MDS infers dimensions of evaluation. However, largely because the dimensions are inferred, the interpretation of the dimensions themselves is more of an art than a science.

One assumption that this technique does make is that the sample is representative. For this particular analysis, I am attempting to capture the attitudes and beliefs of capital markets participants, such as investors. As a result, and as previously mentioned, the subjects selected include accounting faculty, accounting majors and other business majors. To the extent that these individuals do not form a reasonable representation of capital markets' participants, my results will be limited in terms of their generalizability.

Deriving MDS Results and Assessing Overall Fit

The 15 similarity judgments from the 19 respondents were input as separate matrices. MDS then maps perceived differences on a given number of dimensions based on the similarity responses in the data. In this particular analysis, I employ a standard Euclidean distance formula. An emerging technology, Generalized Multidimensional Scaling is another alternative. In this type of MDS, distances based on responses are formed on a surface, and a target surface is the ultimate solution. In GMDS, the minimum distortion moving from the original surface to the target surface represents the optimal solution. This technology is utilized in three dimensional face recognition and texture mapping. Given the task, the Euclidean distance method should suffice.

Given the relatively small number of objects compared (six), the number of dimensions should be one. The general rule of thumb is to have four times as many objects as dimensions desired. For the four dimension model, the stress level was .143 with an RSQ of .372. Stress captures the difference between what is derived and the raw data and a stress level of above .15 is generally regarded as too high (insufficient dimensionality). Notice that stress levels never increase with added dimensions. R-squared

is another important measure in assessing the fit of a potential perceptual map. It measures the proportion of original similarity ratings accounted for by distances from the perceptual map. Please note that no formula for the MDS R-squared is available as far as I can detect. By convention, the R-Squared should be above .6. Based on the stress levels and R-Squared of the output for the four dimension model, (stress=.143 and RSQ=.372), four dimensions is not an appropriate perceptual map for these data. Furthermore, it seems unlikely from an intuitive standpoint that survey respondents evaluated the six objects on four distinct dimensions.

The next possibility considered was the perceptual map that considers three dimensions. With this model, the stress level was slightly above acceptable levels at .153, indicating that the difference between the raw data and what is derived is slightly higher than we would conventionally allow. The R-Squared value for this perceptual map was .62, indicating that the proportion of original similarity ratings accounted for by distances from the perceptual map reached an acceptable level (greater than .6). Weirdness levels were all below the threshold of .5. Weirdness is a measure of individuals' weighting of various dimensions relative to expectation. One individual, respondent 13, very nearly reached this threshold with a weirdness rating of .49. This is due to their over-weighting of dimension one relative to the other respondents. This model appears to be more realistic than the four dimension model, and may be our best perceptual map.

The next possibility considered was the two dimensional perceptual map. Two dimensions seems appealing from an intuitive standpoint. It seems likely that individual respondents may have evaluated these objects on two dimensions (visibility of the scandal, and sophistication of the scandal, for example). A quick study of the two dimensional map seems to be consistent with this *a priori* expectation. Weirdness levels for all 19 included respondents also seem reasonable (indicating that respondents did not weight one dimension disproportionately over the other). However, the previously discussed metrics, Stress and R-squared, both came in at unacceptable levels, .324 and .38 respectively. Thus, in spite of the straightforward interpretation of such a perceptual map, and the perceived balance in terms of weirdness levels, the data are not a good fit for this model.

One dimension was not considered for these objects as an acceptable perceptual map. Taken together, the three dimensional model seems to be the best fit for these data, in spite of the fact that the stress level is slightly above .15.

Interpretation of the Results

The data values for the 3 dimensions are included below for convenience. The proposed interpretations for these dimensions are as follows: Type of Fraud, Pervasiveness of dishonesty and the level of sophistication of the fraud. Notice that for dimension 1, Enron, WorldCom and Phar-Mor involved themselves more with improper accounting related to assets, overstating inventories, capitalizing expenses and so forth. On the other end, ZZZZ Best committed a variety of frauds, including overstating assets such as receivables, but also involving itself in a variety of other schemes including kiting, Ponzi

Schemes, and burglary. AIG and Parmalat's scandals involved falsified accounting documents. Dimension 2 has Enron and ZZZZ Best at one end of the spectrum. Both of these companies were nearly engulfed in their corruption, before being discovered, and WorldCom had overstated its assets by billions. On the other hand, AIG, Parmalat and Phar-Mor were all legitimate companies with comparatively minor frauds. However, it should be noted that Phar-Mor and Parmalat did eventually declare bankruptcy.

The third dimension, level of sophistication, shows Enron on one end and Parmalat on the other. Parmalat's document falsification, WorldCom's accounting change were relatively straightforward, albeit dishonest choices. On the other hand, AIG and Enron were involved in relatively complex schemes. In the middle of this dimension fall ZZZZ Best and Phar-Mor. While these two varied in terms of the pervasiveness of the fraud committed, for both of them, the fraud committed were of pretty classic types, falling somewhere in the middle in terms of complexity. These three dimensions each exhibited distinct relative weights in terms of importance. Dimension 1's relative importance was .2982, Dimension 2's relative importance was .2178 and Dimension 3' relative importance was .1035. This indicates that Dimension 1 was roughly three times as important as Dimension 3 and Dimension 2 was roughly twice as important as Dimension 3. Please note that the interpretations of the dimensions themselves are subjective conclusions based on the judgment of the author.

Dimension1		Dimension 2		Dimension 3	
ZZZZ Best	1.622	Phar-Mor	1.3365	Parmalat	1.3978
AIG	0.5593	Parmalat	0.8241	WorldCom	0.9775
Parmalat	0.5183	AIG	0.784	ZZZZ Best	0.1492
WorldCom	-0.6342	WorldCom	0.8416	Phar-Mor	0.1202
Enron	-0.6773	Enron	1.0316	Enron	0.9162
Phar-Mor	-1.388	ZZZZ Best	1.0713	AIG	1.4881

Validation of the results

In the validation of MDS results, no entirely satisfactory means exists. The proper way to validate the results of this type of technique may include an assessment of convergence between results from separate decompositional and compositional techniques. In the absence of compositional data, this form of validation is not available.

Complete Appendix, Including SPSS program

```
ALSCAL   VARIABLES=Enron ZZZZBest Phar-Mor AIG Parmalat WorldCom

/SHAPE=SYMMETRIC

/LEVEL=INTERVAL

/CONDITION=MATRIX

/MODEL=INDSCAL

/CRITERIA=NEGATIVE CONVERGE(0.001) STRESSMIN(0.005) ITER(30) CUTOFF(0) DIMENS(1,4)

/PLOT=DEFAULT ALL

/PRINT=DATA HEADER.
```

Alscal Procedure Options

Data Options-
Number of Rows (Observations/Matrix). 6
Number of Columns (Variables) . . . 6
Number of Matrices 19
Measurement Level . . . . . Interval
Data Matrix Shape . . . . . Symmetric
Type . . . . . Dissimilarity
Approach to Ties . . . . . Leave Tied
Conditionality . . . . . Matrix
Data Cutoff at 000000
Minimum S-stress 00500
Missing Data Estimated by . . . . Ulbounds
Stress and squared correlation (RSQ) in distances

RSQ values are the proportion of variance of the scaled data (disparities) in the partition (row, matrix, or entire data) which is accounted for by their corresponding distances.

Stress values are Kruskal's stress formula 1.

Matrix	Stress	RSQ	Matrix	Stress	RSQ	Matrix	Stress	RSQ	Matrix	Stress	RSQ
1	.080	.559	2	.110	.934	3	.108	.221	4	.075	.727
5	.106	.209	6	.090	.429	7	.108	.135	8	.364	.058
9	.079	.632	10	.082	.540	11	.108	.143	12	.106	.219
13	.316	.003	14	.101	.478	15	.117	.015	16	.097	.307
17	.081	.603	18	.084	.542	19	.098	.308			

Averaged (rms) over matrices

Stress = .14354 RSQ = .37178

Configuration derived in 4 dimensions

Stimulus Coordinates

Stimulus Number	Stimulus Name	Dimension 1	2	3	4
1	Enron	-.5896	1.5286	.8363	.1459
2	ZZZZBest	-1.4654	-1.0751	.6568	-.8561
3	Phar-Mor	1.4738	.6191	.1034	-1.2624
4	AIG	-.3156	-.0424	-2.1578	-.3082
5	Pharmala	1.0931	-1.4072	.4304	.4490
6	WorldCom	-.1962	.3771	.1310	1.8318

Subject weights measure the importance of each dimension to each subject.
Squared weights sum to RSQ.
A subject with weights proportional to the average weights has a weirdness of
zero, the minimum value.
A subject with one large weight and many low weights has a weirdness near one.
A subject with exactly one positive weight has a weirdness of one,
the maximum value for nonnegative weights.

		Subject Weights			
		Dimension			
Subject Number	Weird-ness	1	2	3	4
1	.0709	.4149	.3988	.3293	.3461
2	.7923	.2297	.0111	.9300	.1284
3	.1470	.2738	.2461	.1751	.2349
4	.1657	.4738	.4937	.4397	.2556
5	.0675	.2291	.2537	.2151	.2130
6	.1209	.3396	.3891	.2688	.3005
7	.1350	.1652	.2182	.1652	.1825
8	.1341	.1133	.1338	.1065	.1278
9	.0416	.4445	.3773	.4122	.3491
10	.1507	.4039	.4199	.2700	.3579
11	.0943	.1841	.2104	.1733	.1861
12	.0635	.2521	.2486	.2120	.2211
13	.0965	.0268	.0294	.0232	.0259
14	.1349	.4503	.3075	.3316	.2662
15	.1985	.0476	.0707	.0550	.0683
16	.1421	.2661	.3262	.2276	.2786
17	.1538	.4651	.4488	.2888	.3196
18	.0763	.4309	.3825	.3228	.3250
19	.1560	.2953	.2746	.2253	.3083
Overall importance of each dimension:		.1030	.0947	.1093	.0649

Flattened Subject Weights

Subject Number	Plot Symbol	Variable 1	2	3
1	1	.4616	.1022	-.2321
2	2	-2.3554	-4.0158	4.1682
3	3	.9000	.0516	-.5246
4	4	.6360	.5639	.1530
5	5	-.2876	.2721	-.0990
6	6	-.0087	.6102	-.3570
7	7	-.9939	.5887	-.1897
8	8	-.7343	.2627	-.2322
9	9	.5209	-.3662	.1170
10	A	.4497	.4429	-.5447
11	B	-.4910	.2812	-.1544
12	C	.2226	.0768	-.1800
13	D	-.1947	.2813	-.2418
14	E	1.9429	-.5488	-.0233
15	F	-1.7976	.4939	-.1737
16	G	-.5447	.5652	-.3564
17	H	1.2056	.5310	-.5116
18	I	.9120	.0063	-.2343
19	J	.1566	-.1994	-.3832

Iteration history for the 3 dimensional solution (in squared distances)

Stress and squared correlation (RSQ) in distances
RSQ values are the proportion of variance of the scaled data (disparities) the partition (row, matrix, or entire data) which is accounted for by their corresponding distances.

Stress values are Kruskal's stress formula 1.

Matrix	Stress	RSQ	Matrix	Stress	RSQ	Matrix	Stress	RSQ	Matrix	Stress	RSQ
1	.075	.864	2	.116	.601	3	.118	.644	4	.102	.694
5	.104	.677	6	.050	.936	7	.245	.119	8	.337	.093
9	.099	.755	10	.108	.693	11	.102	.699	12	.116	.681
13	.171	.624	14	.105	.717	15	.291	.093	16	.109	.724
17	.106	.737	18	.116	.656	19	.102	.760			

Averaged (rms) over matrices
Stress = .15346 RSQ = .61947

Configuration derived in 3 dimensions

Stimulus Coordinates

		Dimension		
Stimulus Number	Stimulus Name	1	2	3
1	Enron	-.6773	-1.0316	-.9162
2	ZZZZBest	1.6220	-1.0713	.1492
3	Phar-Mor	-1.3880	1.3365	-.1202
4	AIG	.5593	.7840	-1.4881
5	Pharmala	.5183	.8241	1.3978
6	WorldCom	-.6342	-.8416	.9775

Subject weights measure the importance of each dimension to each subject.
Squared weights sum to RSQ.

A subject with weights proportional to the average weights has a weirdness of zero, the minimum value.
A subject with one large weight and many low weights has a weirdness near one.
A subject with exactly one positive weight has a weirdness of one, the maximum value for nonnegative weights.

		Subject Weights		
		Dimension		
Subject Number	Weird-ness	1	2	3
1	.0788	.6589	.5660	.3311
2	.1251	.5045	.4449	.3860
3	.0301	.5769	.4593	.3172
4	.1217	.5469	.4738	.4125
5	.2954	.5319	.3755	.5026
6	.0632	.6681	.6003	.3600
7	.1088	.2187	.2084	.1655
8	.0135	.2150	.1784	.1221
9	.1035	.5645	.5762	.3235
10	.0123	.5784	.4879	.3477
11	.0951	.5520	.4861	.3980
12	.0862	.5760	.5138	.2926
13	.4966	.7385	.1597	.2315
14	.1246	.5210	.5794	.3308
15	.0680	.2048	.1772	.1390
16	.1393	.5689	.5660	.2835
17	.0843	.6288	.5003	.3029
18	.0267	.5587	.4905	.3212
19	.1354	.5846	.5775	.2918
Overall importance of each dimension:		.2982	.2178	.1035

Flattened Subject Weights

Subject Number	Plot Symbol	Variable 1	2
1	1	.1803	.3452
2	2	-.5770	-.1923
3	3	.2268	-.0831
4	4	-.5144	-.2373
5	5	-.5866	-1.3674
6	6	-.0382	.4306
7	7	-.7219	.1331
8	8	.0742	.0346
9	9	-.4488	.8685
10	A	-.0587	.0160
11	B	-.4680	-.0988
12	C	.0677	.4847
13	D	3.9996	-3.5630
14	E	-.8058	1.0672
15	F	-.3233	-.0709
16	G	-.1907	.9650
17	H	.4401	.0922
18	I	-.0813	.2430
19	J	-.1741	.9325

Iteration history for the 2 dimensional solution (in squared distances)

Stress and squared correlation (RSQ) in distances

RSQ values are the proportion of variance of the scaled data (disparities)in the partition (row, matrix, or entire data) whichis accounted for by their corresponding distances.
Stress values are Kruskal's stress formula 1.

Matrix	Stress	RSQ	Matrix	Stress	RSQ	Matrix	Stress	RSQ	Matrix	Stress	RSQ
1	.239	.620	2	.333	.294	3	.317	.354	4	.323	.303
5	.489	.050	6	.266	.542	7	.417	.073	8	.313	.346
9	.234	.652	10	.313	.350	11	.323	.304	12	.279	.489
13	.322	.311	14	.272	.514	15	.470	.031	16	.268	.529
17	.274	.517	18	.297	.422	19	.266	.558			

Averaged (rms) over matrices
Stress = .32403 RSQ = .38211
Configuration derived in 2 dimensions
Stimulus Coordinates

		Dimension	
Stimulus Number	Stimulus Name	1	2
1	Enron	-1.2237	-.8606
2	ZZZZBest	1.1401	-.8520
3	Phar-Mor	1.2267	-.5754
4	AIG	-.0746	1.5434
5	Pharmala	.2147	1.2506
6	WorldCom	-1.2831	-.5060

Subject weights measure the importance of each dimension to each subject.
Squared weights sum to RSQ.
A subject with weights proportional to the average weights has a weirdness of zero, the minimum value.
A subject with one large weight and many low weights has a weirdness near one.
A subject with exactly one positive weight has a weirdness of one, the maximum value for nonnegative weights.

Subject Weights

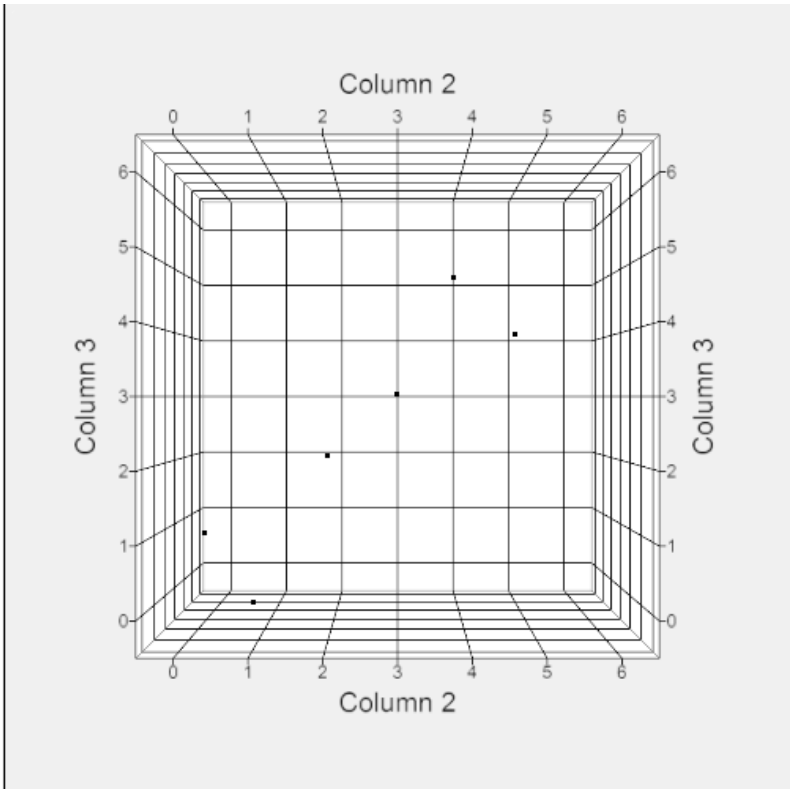
		Dimension	
Subject Number	Weird-ness	1	2
1	.0087	.5741	.5384
2	.3967	.2574	.4772
3	.1883	.4863	.3425
4	.0645	.3790	.3988

Flattened Subject Weights

Variable

Subject Number	Plot 1 Symbol
1	.0047
2	-2.4497
3	1.0526
4	-.4216
5	-.1892
6	.4250
7	-.0181
8	-.0503
9	-1.7560
A	.0622
B	-.1634
C	.2248
D	-.1043
E	-1.4776
F	1.6937
G	.1573
H	1.0190
I	.6625
J	1.3285

Abbreviated Name	Extended Name
Parmalat	Parmalat



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OPERATIONS AND ACCOUNTING INTER-DEPARTMENTAL CONFLICT AND ORGANIZATIONAL PERFORMANCE

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ABSTRACT

Literature establishes that conflict exists between the operations and accounting departments within many organizations. Literature also points to the negative impact such conflict may have on organizational performance. Current study attempts to quantify the conflict found in a specific industry and measure any effect inter-departmental conflict has on performance within an organization.

Study uses the National Institute of Occupational Safety and Health (NIOSH) Workplace Conflict Questionnaire. Employees in the oil and gas wholesale and retail industry participated in the survey (N=171). Current study uses quantitative methodologies. While this research indicates that conflict does exist in the sample organizations between the accounting and operations departments, the effect of that conflict was not found to be significant on two organizational personnel parameters: employee turnover and absenteeism. Study advances the research by establishing the existence of conflict and determining the potential effect on organizational performance. Additional recommendations for future study are offered.

Keywords: Accounting, Operations, Conflict, Conflict management.

Introduction

Literature has noted that tense relationships may manifest between the operations department and the accounting department within organizations. Further, the conflicts that arise between operations and accounting may have a more dramatic effect on overall organizational performance, especially during times of system or process change (Johnson, Brignall, & Fitzgerald, 2002).

Within larger organizations, any one instance of conflict will have less impact than a parallel conflict in a smaller organization (Hand, Lloyd, & Rogow, 1982). As the literature review suggests and the current research seeks to establish, the conflict that arises specifically between the operations and accounting departments is a critical component of that intra-organizational conflict (Meadows, 1947).

One view of management accounting suggests that it is not a neutral influence in organizations, but is instead a mechanism for management control through surveillance. This nuanced view of managerial accountants as part of a surveillance regime is at the heart of much of the conflict that an organization experiences between the operations and accounting departments (Liang, 2004).

Interpersonal relationships will be as varied as the individuals within organizations. And, organizations have been said to "compete not just for customers, but for power" (Hoglar & Hunt, 1993, p. 178).

Conflict may evolve from the divergent goals of the line versus the staff function of each department. The nature of how external accounting information is accumulated according to a more rigid or formalized set of standards, or "generally accepted accounting principles" (GAAP), versus the more tailored and informal method of operational reporting is developed may lead to some conflict. This particular conflict, unless managed properly, can lead to additional dysfunctional behaviors that ultimately impede the mission of the organization (Simon, Norton, & Lonergan, 1979).

Pei and Davis (1989) have discussed organizational influence on behavior in terms of three variables: 1 - Organizational structure, 2 - Organizational-professional conflict, 3 - Role stress. (p. 101). Further, role stress has been defined according to two additional variables, both of which devolve from the organization's structure: 1 - Role conflict, 2 - Role ambiguity (p. 104). In finding that inter-departmental or "intra-organizational" conflict can be debilitating to an organization and may severely hamper organizational goals, Simon, Norton, and Lonergan (1979) align with the Pei and Davis study in identifying the organization's structure as one source for conflict.

Study might be able to capture data that would reflect the extent of the conflict specific to the inter-departmental tension between line operations and accounting and the amplitude of the effect the conflict has on performance. After measuring the level of conflict and any corresponding affect on performance, areas where future research is needed may become identifiable. Recommendations for the resolution of how inter-departmental performance might be improved will be presented. Therefore, the present study shall attempt to push the research further by identifying the specific nature of operations and accounting departmental intra-organizational conflict and the effects on those organizations within the study population.

Research Questions

Study seeks to establish the relationship between conflict within organizations and consequences to the organization. While there are many underlying causes to conflict, this study will focus primarily upon the

conflict between the accounting department and the operations departments in a specific sub-sector of industry. Study will report results of the inter-group conflict that exists within an organization that crosses departmental lines. Study will attempt to answer the following research questions, with the specific hypotheses to follow.

Research Question One – Does conflict occur between the accounting department and the operations departments in the sample population? Research Question Two: Does any organizational conflict, if any is measured, cause measurable effects on the overall performance of the organization?

Hypothesis One

There will be no measurable inter-departmental conflict between the accounting and operations departments found in the test population.

Hypothesis Two

There will be no measurable organizational performance differences related to any conflict between the accounting and operations departments found in the test population.

Review of the Literature

Job stressors have a measurable impact on personnel (Harris, Artis, Walters, & Licata, 2006). Job satisfaction and retention are among the measures that researchers have used as outcomes to test such impact. But, not all conflict produces negative results (DeChurch & Marks, 2001). The key to the positive results of intra-organizational conflict is said to be proactive management of the conflict. In fact, conflict has been said to be a positive catalyst for change. Study suggests that conflict can be a signal of an organization's health and ability to become a better work place (Lehman & Linsky, 2008).

However, it is certain that work place conflict adds billions to healthcare costs (Price, 2004). Further, the effects of inter-departmental conflict are experienced across a broad spectrum of industry and business types (Brody, Lane, & Steed, 2004). Where conflict surfaces, organizational leadership must address the root causes and not simply manage the symptoms. When addressed effectively, conflict can stimulate creativity (Runde & Flanagan, 2008).

In their work, Aranya and Ferris (1984) found that organizational-professional conflict is dependent upon the relationship between organizational commitment and professional commitment for an individual. Factors related to conflict may include, "turnover intentions, job satisfaction, professional commitment, organizational commitment, membership in an accounting professional organization (presumably with a formal standard of behavior and ethics) and position of authority within the organization" (Harrell, Chewning, & Taylor, 1986, p. 116). Study has also shown that negative inter-group dynamics relate to the heightened perception that conflict is existent within an organization (Staggs, 2008)

Ultimately, as Arrow suggests (1964), organizational control can be seen in context of two factors: rules, and the enforcement of those rules. The very existence of internal controls, administered by a department not accountable to one department will inevitably yield conflict within that organization. Arrow further suggests that this may be due to the fact that a production manager instinctively understands that they are more knowledgeable about their department than the accounting department can be.

Other factors contributing to organizational conflict have been suggested. For example, the budget process can generate conflict in organizations. Specifically, operational budgets are only a portion of the tools at the disposal of management whereby control is exercised in an effort to ensure that resources are efficiently employed in the effort to satisfy the mission and goals of the organization (Barrett & Fraser, 1977). And, Eccles says, "Conflict is an inevitable element … in the processes top management uses to exercise control in collaborative organizations" (Eccles, 1983, p. 158).

Another source of conflict occurs when expectations are poorly stated (The leadership imperative, 2008). This becomes more pronounced in those departments where personnel are poorly trained.

While the opportunity for conflict within an organization is as varied as the types of organizations, there are some organizational characteristics that are more preeminent on the literature as contributing to conflict and varied financial results. One such characteristic is the size of an organization (Walker & Petty, 1978).

Methodology

Current research utilizes a quantitative approach to the research questions. To establish some level of correlation between inter-departmental conflict and the overall performance of an organization, a survey/questionnaire was employed as the test instrument.

Introduction

The survey used is the National Institute of Occupational Safety and Health (NIOSH) Workplace Conflict Questionnaire (Rationale, 2008). The survey instrument is available for viewing at http://www.cdc.gov. The instruments were self-administered. As such, they did not require supervision beyond that provided by the principal investigator for the research.

Additional on-site interviews were conducted with organizational personnel by the principal investigator. Those interviews were substantially designed to expand the information collected on the quantitative NIOSH surveys. The interviews sought to elicit qualitative support information about the study hypotheses, and will be included in future study.

The conflict questionnaires were used to establish a level of conflict in the organization. Additional data was accumulated as follows: 1) Employee absenteeism and turnover data was collected from the payroll

department. 2) Employee health care costs data was collected during interviews of controllers. 3) Net profit margin information was collected from each organization's CFO.

Population and Subject Selection

The scope of the study has been limited to the study of organizations in the wholesale and retail fuel distribution industry. Specifically, the participating companies are engaged in either, or both, the wholesale delivery of fuel to retail outlets and the subsequent retail sale of those fuels.

Eight different companies participated in the study. Their relative sizes, locations, and revenues were similar. Each company has a similar organizational structure, with the operations department segregated as a line function under the control of the vice-president of sales and/or operations. A controller directly supervises the accounting department as a staff function. In each organization, the operations vice-president directly supervises a cadre of supervisors. Each supervisor is directly responsible for the operations of a division, region or department

Limitations and Assumptions

One limitation of the study was the geographical access the researcher has to the sample populations. The companies will be located in the general areas of East Texas, North Louisiana, Western Mississippi, and Southern Arkansas. Another limitation of the study is a by-product of one of the performance variables – employee turnover. In many cases, the personnel at the outlying locations, or store units, will have a higher level of turnover than the home office staff, for a variety of reasons. By completing the research in a short span of time, the actual interim turnover was limited and any affect on the results was minimized. Another limitation of the study is the compressed time frame for the research. That is, there is no actual "before and after" survey element. The data collected was a representative of the opinions of the workers at a moment in time.

While the selection of a single industry focuses the research, it may also limit the generalizability for the research across other industries. As one of the recommendations to be discussed, further research would be advisable to test cross-industry applications of this research.

Discussion of Quantitative Methods

The NIOSH instrument uses a five-point Likert scale to measure conflict. The work conflict component can be sub-divided into five sub-groupings: physical environment conflict issues, role conflict issues, role ambiguity issues, intra-group conflict, and inter-group conflict. These categories relate to research conducted by Rizzo, House, and Lirtzman (1970). Current study focuses only on the last category.

Data Analysis

Statistical analyses were conducted to establish the presence or absence of inter-departmental conflict, and then against known organizational retention statistics and absenteeism. Table I summarizes the hypotheses and analyses performed.

Table 1: *Hypothesis, Dependent Variable, Independent Variable, & Statistical Analysis.*

Hypothesis	DV	IV	Statistical Analysis
Ho1: There will be no measurable inter-departmental conflict between the accounting and operations departments found in the test population	Conflict measures (identified through survey questions)	Department Accounting Operations	Chi-square, Mann-Whitney, K-S test, ANOVA to measure differences between the two departments. (RQ1)
Ho2: There will be no measurable organizational performance differences related to any conflict between the accounting and operations departments found in the test population.	Organizational Performance Absenteeism and Turn-over.	Department a) Accounting b) Operations Covariate: Inter-group Conflict.	ANOVA to measure differences between the two departments. (RQ2)

Data Processing and Analysis

The data analysis was conducted using SPSS, version 15. As mentioned above, the NIOSH questionnaires were administered on a five-point Likert scale.

Results

Table 2 provides the distribution summary for the sample population. A convenient sample was selected representing the two departments: accounting and operations. Appendix A shows the demographic breakdown of the sample from each organization.

Table 2 - *Summary of NIOSH Questionnaire Distribution and Responses by Organization*

Organization Number	Number of Surveys Distributed	Number of Surveys Returned	Percentage of Surveys Returned
A001	50	34	68.0%
A002	50	27	54.0%
A003	50	26	52.0%
A004	30	15	50.0%
A005	30	23	76.7%
A006	30	21	70.0%
A007	30	12	40.0%
A008	30	13	43.3%
Total	300	171	57.0%

Implications of Results for Research Questions and Hypotheses

Hypothesis Testing Process

Statistical tests were performed to test the differences in means for inter-group conflict by department. Chi-Square and univariate ANOVA tests were performed in conjunction with one non-parametric test in support of Hypothesis One for the conflict variables - Inter-group conflict. The first test performed was

the Chi-square. Next, ANOVA was performed with the associated Levene's test preceding the ANOVA. Then the non-parametric Mann-Whitney (MW) test was performed to support the ANOVA results.

Cronbach Alpha was calculated to measure the reliability of the data. Cronbach's Alpha (CA) measures how well a set of items or variables measures a single unidimensional construct (Cronbach's alpha, 2008). Table 3 shows the CA values for intra-group conflict, inter-group conflict, and both conflicts combined on NIOSH conflict questionnaire instrument. For the Intra-group Conflict data, CA is .899. For the Inter-group data, Alpha is .860. For both Inter and Intra-group data, Alpha is .862. Since all of the CA scores exceed the generally accepted value of .70, the reliability of the test instrumentation can be reasonably certain.

Table 3 – *Accounting and Operation Department Combined Reliability Statistics Intra-Group Conflict Questions NIOSH Questionnaires Cronbach's Alpha*

Accounting and Operation Department	Cronbach's Alpha	N of Items
Intra-group Conflict	.899	8
Inter-group Conflict	.860	8
All 16 NIOSH Conflict Questions	.862	16

Research Question One and Hypothesis One

Table 4 provides detailed average organization-wide combined Inter-group and Intra-group Conflict scores. A third column presents a measure of total conflict for each organization derived by simply adding the two conflict scores together, Intra-group plus Inter-group. Current study only uses inter-group measures. The average organization-wide combined Inter-group conflict score for every organization was higher than its corresponding organization-wide combined Intra-group conflict score, by department. This suggests that each organization's personnel express a higher level of cooperation with members within departments than they do with other departments in every organization. The average Intra-group conflict score for all organizations irrespective of the department is 2.59. The average Inter-group conflict score for all organizations irrespective of department is 3.98.

Table 4 - *Accounting and Operations Departmental Averages of NIOSH Questionnaire responses*

Organization	Department	Intra Group Conflict Mean	Inter Group Conflict Mean	Total Conflict Mean
Organization 01	Accounting Department	1.6020	3.8650	5.4650
	Operations Department	3.0175	4.0763	7.0913
	Total	2.6012	4.0141	6.6129
Organization 02	Accounting Department	1.9713	4.2212	6.1925
	Operations Department	2.9426	4.0089	6.9500
	Total	2.6548	4.0719	6.7256
Organization 03	Accounting Department	2.3778	3.0433	5.4200
	Operations Department	2.5688	3.5465	6.1129
	Total	2.5027	3.3723	5.8731
Organization 04	Accounting Department	1.6700	3.7533	5.4200
	Operations Department	2.6892	4.1475	6.8350
	Total	2.4853	4.0687	6.5520
Organization 05	Accounting Department	1.6700	4.3367	6.0033
	Operations Department	2.7765	4.2400	7.0145
	Total	2.6322	4.2526	6.8826
Organization 06	Accounting Department	2.1900	3.7550	5.9400
	Operations Department	2.5289	4.0942	6.6211
	Total	2.4967	4.0619	6.5562
Organization 07	Accounting Department	2.0650	4.2500	6.3150
	Operations Department	2.9520	4.1520	7.1020
	Total	2.8042	4.1683	6.9708
Organization 08	Accounting Department	2.1900	4.1900	6.3800
	Operations Department	2.6164	4.1164	6.7291
	Total	2.5508	4.1277	6.6754
Total	Accounting Department	1.9513	3.8069	5.7567
	Operations Department	2.7739	4.0413	6.8130
	Total	2.5863	3.9878	6.5720

An initial Chi-Square Test was conducted on the aggregate NIOSH Surveys for all Organizations by Department responses and frequencies. Table 5 contains Pearson chi-square results. The data and frequency tables are available upon request.

Table 5 - *Chi-Square Test Based on Organization by Department Response and Frequency Data*

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.696(a)	7	.360
Likelihood Ratio	8.072	7	.326
N of Valid Cases	171		
(a) 4 cells (25%) have expected count less than 5. The minimum expected count is 2.74.			

The data frequency association results in Table 5 yield a Pearson Chi-Square value of 7.696, df of 7 and significance of .360. This test was conducted to verify that the distribution of the data collected was proportionate for the accounting and operations department within all 8 organizations. The Pearson

Chi-Square significance of .360 is greater than .05, and tells us that the distribution is proportionate as regards the accounting and operations departmental data.

Intra-Group Conflict

Intra-group conflict is that conflict that exists within a department. A way of asking the question might be, "How well do members of the same department get along with one another." Current study does not analyze this aspect of organizational conflict.

Inter-Group Conflict

Inter-group conflict crosses departmental lines. To examine the relationships of the Inter-group conflict between accounting and operations departments Pearson's Chi-Square, ANOVA with associated Levene's Test, and the non-parametric Mann-Whitney (MW) test were performed.

One sample test against NIOSH score 3.00.

A one sample test was conducted to test the inter-group conflict scores in accounting and operations against the NIOSH instrument neutral score of 3.00. Table 6 shows that the differences are significant for both accounting department (.9268 above the neutral value 3, p = .000) and Operations department (1.0477 above the neutral value 3, p = .000). When the conflict measures are further analyzed, the results of the NIOSH Questionnaire suggests that the sample population overall tends to express the existence of conflict across department lines. "Inter-group Conflict" has an average response of 3.98 (1.0171 above the neutral value 3). These findings show that inter-group conflict does exist in each of the departments of accounting and operations.

Table 6 - *One sample test of Inter-group Conflict against NIOSH score 3.00*

Inter-group Conflict	NIOSH Neutral Test Value = 3.0					
Department	t	df	Sig. (2- tailed)	Mean Difference	95% Confidence Interval Lower	Upper
Accounting Department Inter-group Conflict	6.972	8	.000	.926811	.62025	1.23337
Operations Department Inter-group Conflict	15.760	8	.000	1.047722	.89442	1.20103
Organization-wide Inter-group Conflict	12.039	8	.000	1.017189	.82235	1.21203

As seen in Table 7, the mean average for Inter-group conflict for the accounting department is 3.8069 and the mean average for Inter-group conflict for the operations department is 4.0413. The total average Inter-group conflict score is 3.9878. The results of the NIOSH Conflict Survey Questionnaire strongly suggest that conflict does exist between the personnel of the accounting and operations department in the sample populations. The organization-wide score average for Inter-group conflict

3.9878 from Table 7 indicates a significantly higher value than the neutral score of 3. But, the Inter-group conflict score is being tested in current study to determine if there is a significant difference in the means between the accounting and operations departments, not the organization as a unit.

Table 7 **–** *Accounting, Operations Departmental Descriptive Statistics DV: Inter Group Conflict*

Dependent Variable: Inter Group Conflict	Mean	Std. Deviation	N
Accounting Department	3.8069	.83449	39
Operations Department	4.0413	.51015	132
Total	3.9878	.60493	171

Pearson's Chi-Square value from Table 8 for the Inter-group Conflict is 27.529, df of 22, and significance of .192. This indicates that the difference is not significant on the proportions or degrees of the Inter-group conflict score for accounting and operations departments since .192 exceeds the .05 level. Stated another way, the level of conflict expressed by the accounting department towards the operations department does not differ significantly from the level of conflict expressed by the operations department towards the accounting department.

Table 8 – *Chi-Square Tests Inter-group Conflict by Accounting and Operation Department Frequency (Frequency Distribution Omitted, but available upon request).*

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.529(a)	22	.192
Likelihood Ratio	29.545	22	.130
Linear-by-Linear Association	4.519	1	.034
N of Valid Cases	171		
a 37 cells (80.4%) have expected count less than 5. The minimum expected count is .23			

Next, the univariate ANOVA for Inter-group conflict between the accounting and operations department was performed, with the associated Levene's Test of Equality of Error Variances. Table 9 is Levene's, and Table 10 is the ANOVA results. Inter-group conflict is the DV and department is the fixed factor (FF).

Table 9 - *Levene's Test of Equality of Error Variances Inter Group Conflict, Accounting and Operations.*
Dependent Variable: Inter Group Conflict

F	df1	df2	Sig.
15.218	1	169	.000
Tests the null hypothesis that the error variance of the dependent variable is equal across groups. a Design: Intercept + Department.			

Since the F-score for Levene's is 15.218, significant at .000, it cannot be assumed that the sample has

equal variances. Therefore, additional testing will be conducted. The non-parametric Mann-Whitney test will be used to supplement the ANOVA results found in Table 10.

As Table 10 reveals, the F-score for the departmental Inter-group conflict variable is 4.615, and is significant at .033. This is lower than the .05 test value, but as mentioned earlier, due to Levene's results, the MW is employed.

Table 10 – *Inter-group Conflict Univariate ANOVA, Accounting and Operations* DV: Inter Group Conflict

	Sum of Squares	Df	Mean Square	F	Sig.
Contrast	1.654(a)	1	1.654	4.615	.033
Error	60.556	169	.358		
a R Squared = .027 (Adjusted R Squared = .021)					

In addition to the above, the Mann-Whitney (MW), Table 11 non-parametric test was performed for the Inter-group accounting and operations departments. As the MW results indicate, the Z-score of -.592 indicates not significant result at .554, and therefore their probability distributions are equal.

Table 11 – *Mann-Whitney Inter-group Conflict Accounting and Operations Department*

Ranks

Department		N	Mean Rank	Sum of Ranks
Inter Group Conflict	Accounting Department	39	81.91	3194.50
	Operations Department	132	87.21	11511.50
	Total	171		

Test Statistics (a)

	Inter Group Conflict
Mann-Whitney U	2414.500
Wilcoxon W	3194.500
Z	-.592
Asymp. Sig. (2-tailed)	.554
a Grouping Variable: Department	

Summary of Hypothesis One

In summary, while the ANOVA yielded a significant result, this result must be further examined using the MW non-parametric test in light of the Levene's test results. The Chi-Square and MW tests each yielded not significant results.

Therefore, it is concluded that for Inter-group conflict scores of the accounting and operations department, there is no significant statistical difference between their mean Inter-group conflict scores. Note the mean scores of Accounting (3.8069) and Operations (4.0413) are greater than the NIOSH norm (3.000), but that the two observed means (3.8069 and 4.0413) are not significantly different. Based on

all statistical analyses, including the one sample, Null Hypothesis One is rejected and the Alternative accepted, since the conflict is significant, but not directionally variable.

Research Question Two and Hypothesis Two

One-way ANOVA was used to test Hypothesis Two to observe if there is a statistical difference in organizational performance between accounting and operations as influenced by Inter-departmental Conflict. The Inter-group Conflict for each of the 8 organizations was considered as covariates. The dependent measures of performance were organizational employee turnover and absenteeism.

In the first one-way ANOVA, the DV "Absenteeism." The FF was department and the covariate is Inter-group Conflict. Table 12 contains descriptive statistics for the test and Table 13 the ANOVA results.

The Inter-group Conflict covariate F value is 1.687 and is not significant at .217. Therefore the Inter-group Conflict is not a significant influence upon the difference, if any, in absenteeism rates by department according to the test data at the .05 significance level. Since the covariate does not influence the results, the main effect of the difference in absenteeism between the two departments is now interpreted. As seen the departmental F value of 159.335 yields significance at .000. The accounting department has significantly lower absenteeism rate than the operations department, but this difference is not influenced due to Inter-group conflict.

Table 12 – *Descriptive Statistics, Dependent Variable: Absenteeism Percentage*

Department	Mean	Std. Deviation	N
Accounting	.6750	.17525	8
Operations	3.0250	.48917	8
Total	1.8500	1.26438	16

Table 13 - *Tests of Between-Subjects Effects Absenteeism Percentage by Accounting and Operations Department and Inter-group Conflict.* Dependent Variable: Absenteeism Percentage

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	22.307(a)	2	11.154	86.671	.000
Intercept	.014	1	.014	.110	.746
Inter	.217	1	.217	1.687	.217
Department	20.504	1	20.504	159.335	.000
Error	1.673	13	.129		
Total	78.740	16			
Corrected Total	23.980	15			
a R Squared = .930 (Adjusted R Squared = .920)					

In the next one-way ANOVA test for Hypothesis Two, employee turnover is substituted as the DV. Table 14 contains descriptive statistics. Table 15 shows the results of the ANOVA. As was shown in the previous one-way ANOVA test that used employee absenteeism as the DV, employee turnover is also significantly different by department with Inter-group Conflict as the covariate. The covariate Inter-group Conflict F value is 1.602 and is not significant at .228. Therefore, Inter-group Conflict is not a significant influence upon the difference, if any, in turnover rates by department according to the test data at the .05 significance level. Since the covariate does not influence the results, the main effect of the difference in turnover between the two departments is now interpreted. As seen, the departmental F value of 669.344 yields significance at .000. The accounting department has significantly lower turnover than the operations department, but this difference is not influenced by Inter-group Conflict.

Table 14 – *Descriptive Statistics, Dependent Variable: Turnover Percentage*

Department	Mean	Std. Deviation	N
Accounting	6.5000	1.19523	8
Operations	78.8750	7.77243	8
Total	42.6875	37.75839	16

Table 15 – *Tests of Between Subjects Effects Dependent Variable: Turnover Percentage by Accounting and Operations Department for Inter-group Conflict*

Dependent Variable: Turnover Percentage

Source	Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	21000.061(a)	2	10500.031	354.200	.000
Intercept	43.428	1	43.428	1.465	.248
Inter	47.499	1	47.499	1.602	.228
Department	19842.260	1	19842.260	669.344	.000
Error	385.376	13	29.644		
Total	50541.000	16			
Corrected Total	21385.437	15			
a R Squared = .982 (Adjusted R Squared = .979)					

The main conclusion based on the two ANOVA tests is that even though there are significant differences observed between accounting and operations in absenteeism and turnover with accounting having lower values, neither employee turnover nor absenteeism is significantly affected by inter-departmental conflict. Therefore, Null Hypothesis Two is not rejected.

A considerable body of research has been conducted on the intersection of conflict, stress, employee absenteeism and employee turnover. According to Brooke and Price (1989), “A considerable research investment spanning almost a half century has yielded little cumulative knowledge regarding the determinants of employee absenteeism.” Their study was most comprehensive in its approach to

employee absenteeism. Their research suggests that job conflict is a contributory sub-category of two larger variables they called "Health Status" and "Job satisfaction."

Murphy and Sorenson (1988) found that stress management techniques reduced employee absenteeism. This would suggest that stress is a contributing factor to absenteeism. Newell (1996) states emphatically that "The measurable effects of stress are high employee turnover, absenteeism, and stress-related health and disability claims."

Another interesting study by Evan (1963) found that interaction between employees had no significant impact on employee turnover. On the other hand, Evan found that multiple conflict-related employee interactions did have a significant impact on employee turnover. Evan's study was more focused on the peer-socialization process within organizations. However, the single versus multiple interactions may actually explain some of the less than significant results found within the present study.
Another possible reason for some of the apparently inconsistent findings in Hypothesis One and Two may rest in a 2008 study, as reported in the Journal of Accountancy (Missed signals, 2008). The study, conducted by Global Strategic Rewards and World at Work, the United States has the world's highest median employee turnover rate. The study sought to discover the primary reasons why employees left a current job. The employees who left were asked to rank their top five reasons for leaving.

Summary of Hypothesis Two
Hypothesis Two was designed to test organizational performance differences influenced by Inter-group Conflict between the accounting and operations departments in the sample population. The performance measures used for test purposes were employee absenteeism and turnover rates. The results of the statistical tests employed suggest that when Inter-group Conflict is used as covariate, organizational performance is not influenced. Therefore, Null Hypothesis Two (Ho2) is not rejected.

Conclusions and Recommendations

Literature suggests that conflict can be found in organizations. The current research study endeavored to explore conflict in organizations. Specifically, the relationship between accounting staff and operations personnel and conflict between the two departments. Further, the study was designed to measure the impact, if any, on organizational performance.

Conclusions

Multiple conclusions can be taken from the study. Under the study of Research Question One, the data and results of both the quantitative research suggest that conflict does exist within the organizations that participated in the study, particularly between the operations department personnel and the accounting department personnel.

Null Hypothesis Number One stated that there will be no measurable conflict between the accounting and operations departments found in the test population. According to the statistical analyses based on the NIOSH questionnaire, conflict was found to exist in the organizations studied.

Statistical analyses conducted in support of Hypothesis One testing included Chi-square, Levene's, ANOVA and the Mann-Whiney non-parametric test. In each test, the quantitative results found that conflict does exist in the sample population. This is based explicitly upon the subject organizational mean conflict measures as established by the NIOSH instrumentation. These means were measurably greater than the NIOSH norm mean of 3.000.

When the testing for the inter-group conflict was completed, no statistical difference in the level of inter-group conflict for the two departments sampled was found. Therefore, conflict was shown to exist, but each department expressed a comparable level of conflict towards the other department.

Research Question Two was paired with Hypothesis Number Two. Hypothesis Two approached the issue of how conflict, if any, affects organizational performance as measured by two objective metrics. Null Hypothesis Number Two stated that there will be no measurable organizational performance differences related to any conflict between the accounting and operations departments found in the test population. The results from the quantitative research were such that Null Hypothesis Two (Ho2) could not be rejected.

Future Study Recommendations

Some issues emerged during the course of the current study that may be useful for further research. Future study might advance the research by including age, gender or race as a primary element. Although the present study collected age and gender demographics, it was not a part of the principal design. As such, the implications that gender might have in the study of conflict within organizations might advance the research.

Current study suffered from certain limitations that future research might be able to eliminate. Specifically, current research was limited to a single industry. The use of additional industries might advance the understanding of conflict within organizations. Additionally, there was a geographical limitation. As such, study of conflict within organizations in other regions or even countries might advance the research beyond the limitations of the current study.

Addressing Conflict Recommendations

Moss (1986) found that conflicts arise when departmental "objectives are perceived to be mutually exclusive." Moss further states that there is a cost to benefit trade-off involved in quantifying and addressing the issue of conflict in organizations. But, the need to resolve conflict between departments within an organization is said by Moss to be vital.

Reves (1946) offers advice regarding the proper attitude to adopt in approaching the problem of conflict. He suggests that an attitude of honesty is paramount. Further, Reves also states that while it is

easier to criticize, constructive suggestions are superior. Perhaps Reves' advice can be best summed up as "Do unto others as you would have them do unto you."

One very practical method for reducing some of the conflict between the accounting and operations personnel might be a "cross-training" exercise. A process would be developed whereby all accounting staff would be assigned to performing the same duties that the operations staff performs (Yang, Webster, & Ruben, 2007; Cross-train and streamline, 2006; Ebeling & Lee, 1994).

When organizations contain conflict-driven individuals, others within the organization were said to find "work-around" solutions to problems, rather than engage the conflict-driven individual at all. In some cases, this would create violations of the organization's chain of command (Sherwood, 2007). Therefore, one primary recommendation for conflict reduction would be the implementation of a more formal adherence to the proper chain-of-command type of internal controls. Ultimately, some general comments apply universally to conflict resolution. Organizations must first recognize that conflict exists. Stated another way, the first step towards healing is to recognize that a problem exists in the first place.

Appendix A

Summary of Demographics and Respondent Frequencies for All Organizations, Both Departments

Org.	Total	Dept.		Education Level					Experience Level				Age					Gender	
#	Resp.	1	2	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2
A001	34	10	24	3	17	13	1	0	5	13	3	13	16	7	3	8	0	28	6
A002	27	8	19	1	18	7	1	0	5	12	6	4	15	7	3	2	0	22	5
A003	26	9	17	1	14	8	1	2	2	9	3	12	8	7	5	3	3	19	7
A004	15	3	12	1	9	5	0	0	1	9	2	3	8	4	1	2	0	14	1
A005	23	3	20	0	17	6	0	0	3	15	5	0	11	10	2	0	0	21	2
A006	21	2	19	0	16	5	0	0	2	13	6	0	6	14	1	0	0	16	5
A007	12	2	10	0	10	2	0	0	2	5	3	2	4	4	3	1	0	10	2
A008	13	2	11	0	10	2	1	0	1	7	3	2	6	5	1	1	0	11	2
Total	171	39	132	6	111	48	4	2	21	83	31	36	74	58	19	17	3	141	30

Key to understanding Appendix A: Dept: 1 = Accounting, 2 = Operations. Education Level: 1 = Less than High School, 2 = High School, 3 = Some College, 4 = Four year Degree, 5 = More than 4 years college. Experience Level: 1 = less than 1 year job experience, 2 = 1 to 3 years job experience, 3 = 3 to 5 years job experience, 4 = more than 5 years job experience. Age: 1 = less than 26 years old, 2 = 26 – 35 years old, 3 = 36 – 45 years old, 4 = 46 to 55 years old, 5 = more than 55 years old. Gender: 1 = Female, 2 = Male.

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HOSPITAL PROFITABILITY

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ABSTRACT

Healthcare providers continue to consolidate by merging and/or acquiring other companies in order to provide better financial returns for the stockholders. This study examines financial performance relating to hospital profitability employing data since the Prospective Payment System (PPS) was implemented. The sample consisted of financial statements of all fourteen publicly traded multihospital health care conglomerates from 2005 to 2008 comprising nearly 3196 multihospital systems – hospitals, ambulatory surgery centers, nursing homes, diagnostic and therapeutic facilities, and other healthcare related facilities. The multihospital heath care conglomerates were categorized into two groups based on the sample median asset value. Key ratios include liquidity, leverage, profitability, and efficiency measures. The findings reveal no significant variations in financial performance among the two asset size groups. Larger hospitals do not perform any better than smaller size hospitals.

Keywords: Healthcare; Hospitals; For-Profit; Financial Performance; Prospective Payment System (PPS).

Introduction/Problem Background

In the last twenty-five years, hospital profitability has been closely investigated and often criticized for its performance. The criticism started as a result of the perceived consequences of the Medicare Prospective Payment System (PPS). In 1984, the PPS replaced the cost-based reimbursement plan that had been in effect since Medicare was formed in 1965 (Minnesota Department of Health, 2001).

Under PPS, patients are classified within a Diagnostic Related Group (DRG) based on clinical data. The hospital then receives a flat fee based on the diagnosis, without regard to the services rendered. If the hospital is able to provide effective treatment at a lower cost than the DRG reimbursement, it may retain the difference. If the cost to the hospital for providing treatment exceeds the DRG reimbursement, the hospital must cover the loss (Minnesota Department of Health, 2001).

The overall goal of the PPS is to improve hospital performance through financial motives and encourage efficiency in the management of costs associated with medical treatment (American Hospital Directory, 2009). According to Jordan (2001), the initiation of DRG rates allowed an incentive for hospitals to provide minimal services and release patients as soon as they could. At the same time, it also raised concerns about the adequacy of hospital profitability.

Several times within the last two decades, trustees regulating the Medicare Hospital Insurance Trust Fund were apprised that the fund was on the verge of collapse. Every time Congress acceded to the insistence of the trustees by cutting DRG reimbursements for medical treatments (Aaron & Reischauer, 1995).

The 1997 Balanced Budget Act (BBA) resulted from one of these cuts. The BBA was implemented during the fourth quarter of 1998. The overall objective was to decrease national Medicare expenditures of the Medicare Hospital Insurance Trust Fund within a five year time frame (1998 – 2002). As the year 2000 drew to a close, concern was voiced that the Balanced Budget Refinement Act (BBRA) had not been positioned to reinstate financial solidity to the Medicare program as originally planned. Congress reacted to this concern by passing the Benefits Improvement and Protection Act, restoring additional funds in Medicare benefits over a five year period (Sear, 2004).

The 2005 Deficit Reduction Act brought about more cutbacks in Medicare. Hospitals were scrambling to be able to deal with further reductions and more rules (Lubell, 2007). In 2009, a prolonged and severe recession sent many state governments into financial crisis mode. This has contributed to federal deficits of record proportion, in part due to Medicare and Medicaid program expenditures. Unless major changes are implemented, Medicare and Medicaid funds will continue to stretch to the breaking point (Aldhizer, 2009).

The Obama administration has proposed radical changes in financing and delivery of health care. In late 2009, both the US House of Representatives and the US Senate voted to pass their versions of health-care reform (HR 3962). The overall purpose of HR 3962 is to make available quality health care that all Americans can afford and slow down the growth in spending on health care. A change in the way healthcare is financed and delivered is currently undergoing intense debate in Congress.

As the Obama administration endeavors to promote health care reform, it should be evident that America's hospitals and hospital systems are facing an economic crisis of their own and are not as recession-proof as once thought (Kallergis, 2009).

Purpose of Study

Hospitals are realizing smaller and smaller profit margins than in the past. Medicare is the largest and most significant of all health care insurance providers in the United States. Medicare patients represent a significant percent of hospital patients. With the aging of baby boomers, the population of Medicare patients is expected to increase dramatically. The Medicare Payment Advisory Commission (2004) predicts the total number of people enrolled in the Medicare program will nearly double between 2000 and 2030, from about 40 million to 79 million beneficiaries.

Strategies to combat the effects of reduced Medicare reimbursement include: (1) reducing costs, (2) eliminating unprofitable services, (3) increasing revenues through offering new services, and (4) increasing charges (shifting costs) (Minnesota Department of Health, 2001).

Hospital size has been shown to provide advantages in more than one respect. Large hospitals are able to provide more diverse healthcare services as well as making more efficient utilization of human and capital resources, assets, and technology than small hospitals can.

In the mid 1990s, when healthcare costs were intensely debated in the nation, Hallagan (1996) pointed out that "*on one side, some contend that smaller hospital size and more competitive market structures in hospital services are less efficient, and serve to substantially and artificially inflate hospital costs and prices. On the other side it is argued that smaller size and competitively structured markets are essential to ensure that consumers and society are not harmed in traditionally monopolistic ways.*"

Hallagan (1996) examined total hospital expenditures and the number of admissions adjusting for the wage index. He compared hospitals between Florida with a highly regulated hospital industry structure and Ohio with no such state government controls. Hallagan concluded that there may be economies of scale to be considered by the hospitals studied. If consolidating hospitals into larger units reduces health care costs and delivers better and more efficient services, then consolidation would provide an advantage to consumers and to the hospitals bottom line.

Capps and Dranove (2004) state that with hospital consolidation, two contradictory effects may occur for consumers: 1) a greater efficiency with lower prices, and 2) an increase in a hospital's market power, possibly causing prices to increase. If consolidation means larger hospitals that generate higher operational efficiencies and reduce costs, then the results should indicate lower prices and an increase in return on assets. Instead, Capps and Dranove's results showed that consolidation of hospitals does not lead to lower prices. On the contrary, the consolidations of hospitals led to higher prices.

In light of declining hospital revenues, it is imperative that hospitals get a handle on managing their resources to assure continued economic viability. The purpose of our study is to determine which key

financial ratios are drivers of hospital profitability and if hospital size represents a significant factor in influencing hospital profitability.

Research Questions

Key ratios that may be driving return on assets and return on equity among others will be examined to discover which measures are the most significant in the hospital industry. These ratios represent traditional areas studied in examining financial condition. One advantage to using financial ratios is that ratios are standardized measures and the inferences made about financial conditions using ratios are theoretically uniform.

The research questions are as follows:

1. Are large size for-profit hospitals more profitable than small size?
2. What key financial ratios are drivers of hospital profitability?

The key measures were classified into four areas: liquidity, leverage, profitability, and efficiency ratios.

Limitations

The collection of data is limited to publically traded, for-profit hospitals. The reason for this limitation is the ease and low cost of obtaining the data needed.

Importance of the Study

Few people would question the need for hospitals to realize a profit. However, there is considerable debate regarding the amount of profit that should be earned. A small amount of profit must be earned in any entity if they are to remain viable and able to replace their production or service capacity.

Hospitals are specials types of entities. They are both social and economic entities. As a result, they have to balance financial considerations along with social objectives, which are not always clear cut.

Not many necessities are more essential to our society than quality medical care and access to hospitals. Fewer and fewer Americans can afford quality healthcare. The rising cost of healthcare and health insurance is a matter of national concern. Changes in the way healthcare is financed are at the forefront. The need for hospitals to understand the factors influencing their profitability is essential to their very survival.

Literature Review

Many prior studies have examined the differences in profitability between for-profit and non-profit hospitals (Herzlinger & Krasker, 1987; Haddock, Arrington, & Skelton, 1989; Forgione, 1987; Forgione, Schiff, & Crumbley, 1996; Sear, 1991; Sear, 1992; Walker, 1993; Watt, Renn, Hahn, Derzon, & Schramm, 1986; Younis, Forgione, Khan, & Barkoulas, 2003; Plante, 2009; Pratt, 2008). The legal distinction separating non-profit and for-profit hospitals lies in their tax status. Non-profit hospitals qualify for the

tax exempt status, which allows them to be the recipient of donations that are tax-deductible. This tax exempt status also limits their disbursement of assets and profits.

Herzlinger and Krasker (1987) published a study that challenged traditional theory and sought to uncover who actually profited from non-profit hospitals. They developed a model of performance for fourteen major hospital chains representing 725 hospitals. The study used a series of regression equations that revealed the following: (1) for-profit hospital chains do not earn higher returns than non-profit hospital chains because they charge higher prices; (2) non-profit hospital chains earn less than for-profit hospital chains due in part to higher operating costs caused by multiple hospitals in each chain; (3) for-profits do not refuse care to the poor and (4) for-profits did not overcharge affluent patients with good insurance coverage (Herzlinger et al.).

Haddock, Arrington, and Skelton (1989) further studied the differences in profitability between non-profit and for-profit hospitals by employing data from the same time period, a larger data set, and another statistical technique (discriminate analysis). They used this to form alternative conclusions. Their findings suggest that non-profit hospitals return more social benefits than for-profit hospitals. Like Herzlinger et al. (1987), they established that for-profit hospitals might be more efficient than non-profit hospitals.

Forgione (1987) and Forgione, Schiff, and Crumbley (1996) reported non-profit hospitals were not as profitable as for-profit hospitals. They noted that for-profit hospitals are usually half as large as non-profit hospitals. For-profit hospitals also had a shorter duration of hospital stays, a lower case mix, a greater cost per day, and reduced costs per case.

Sear (1992) investigated the profitability of investor-owned, multi-hospital systems (IOMS) by comparing their characteristics and performance. The operating margin served as the profitability measure and was used as the dependent variable for conducting the regression analysis. The results of Sear's study revealed that IOMSs are not significantly differentiated between one another in terms of measures of efficiency, including bed size, length of stay, or case mix. He concluded that IOMSs manage their hospitals using similar methods and the same operating performance indicators. The regression analysis showed structural variables (i.e., case mix and average length of stay) were more important in clarifying their profitability than labor efficiency measures.

Walker (1993) used logit regression to compare for-profit and non-profit hospitals. The results showed the operating margins to be consistently higher with for-profit hospitals. Walker (1993) concluded that financial variables alone are inadequate in making comparisons between for-profit and non-profit hospitals.

Younis, Rice, and Barkoulas (2001) used data before the BBA and looked at the return on investment in measuring hospitals' profitability in 1991 and 1995. To improve on prior research, their sample was diverse and represents hospitals located in all four regions of the U.S. Their empirical results indicated

that profits for the hospitals studied increased as time passed because of increases in efficiency, adjustments to PPS, and the utilization of technology for bookkeeping, billing, and collection processes.

Younis, Forgione, Khan, and Barkoulas (2003) revisited the earlier 2001 study on hospital profitability. Sample data was collected from a large number of Florida hospitals for the years 1991 and 1995 (during the post PPS-period). Using piecewise linear regression analysis (PLR problem requires a technique that combines classification and regression), their empirical evidence showed a number of factors to be statistically significant in assessing the profitability of hospitals. Another study conducted by Younis (2003) showed that rural hospitals are not as profitable as urban hospitals.

Plante (2009) examined the differences between for-profit and non-profit hospitals in a controlled setting in urban California by using a matched sample of 24 for-profit and 24 non-profit hospitals. The non-profits were shown to have higher revenues while for-profits reported lower expenses. Non-profit hospitals and for-profits hospitals had similar staffing levels, but the pay levels reported at non-profits were higher. The non-profits collected their receivables much more efficiently while for-profits paid their current liabilities much more promptly.

Pratt (2008) investigated the relationship between focus centers (specialty) that are part of multihospital systems using net revenue as the primary measure. Using twenty randomly selected multihospital systems, the focus center was found to have a statistically significant relationship to net revenue and patient days. Pratt suggests that the focus center increases the number of patient days which directly effects net revenue. Other variables shown to be statistically significant were religious affiliation, medium income, and the distinction between for-profit and non-profit.

Chen, Bazzoli, and Hsieh (2009) examined the influence of a hospital's financial condition and the provision for unprofitable services by conducting an eight year longitudinal empirical study. The results show that non-profit hospitals in strong financial condition provide larger levels of unprofitable services than non-profit hospitals in weaker financial condition. They concluded that non-profit hospitals with low operating margins may offset their financial condition with other types of financial support in order to provide unprofitable services.

Castaneda and Falaschetti (2008) empirically assess the influence of organizational form (non-profit, for-profit or pubic) on the operational scope (delivery of medical procedures) of the organization. They found that operational scope is more dependent on local demographics than organizational form.

McDermott (2009) explored the differences between hospital chains and independent hospitals of 67 acute-care hospitals in Virginia. In the area of profitability, the hospital chains generated a statistically significant higher return on assets than the independent hospitals.

Sear (2004) studied how the BBA effected Medicare spending and the resultant profitability of hospitals. Data was derived from a sample of twenty-five Tampa Bay area hospitals over a twelve year period (1990 – 2001). The results showed that the average operating margin increased to its highest in 1996

and by 2001 had fallen to nearly zero. Sear concluded that the BBA did not affect the operating margins of hospitals.

Younis and Forgione (2005) conducted a study using data from 1996 and 1998. The sample was diverse and representative of all four U.S. regions. Younis et al. came to the conclusion that total profit margin more accurately reflects profitability than return on equity and that hospital profitability was largely affected by size, location, occupancy rate, and patient volume relying on Medicare and Medicaid for their total payment.

Younis (2006) studied the relationship between the profitability of hospitals and the BBA. The profitability of hospitals was examined at intervals of one year prior and two years subsequent to BBA implementation. The variables identified as having the main influence on hospital profitability were geographic location, size, conversion to a critical access hospital, and the ratio of days of Medicaid patients to total days. Younis' findings suggest that hospital profitability went down overall, but hospitals classified as small and rural, which converted their status to critical access, showed an improved financial position. His results also indicated that hospitals converting to for-profit status reported a drop in earnings after the change.

Methodology

The sample data shown in Table I was acquired from the Annual Reports (10-K) of fourteen publicly traded multihospital health care conglomerates (SIC code of 8062) comprising nearly 3196 multihospital systems. These companies are - Kindred, Manor Care, HealthSouth, Amsung, Community Health, Health Management, Lifepoint, SunLink, Tenet, Universal Health, Rebhabcare, MedCath, Dunacq Healthcare, and HCA, Inc. The hospital annual reports were filed with the Securities and Exchange Commission (SEC) for fiscal years 2005, 2006, 2007, and 2008. The 3196 multihospital systems comprised of hospitals, ambulatory surgery centers, nursing homes, diagnostic and therapeutic facilities, and other healthcare related facilities.

Table I Healthcare companies listed on stock exchange.			
Sticker	Corporate Name	All facilities	Assets $T (2008)
AMSG	Am Surg Corp. http://finance.yahoo.com/q/pr?s=AMSG	189	905,879
CYH	Community Health Systems, Inc. http://www.chs.net/company_overview/index.html	120	13,818,254
DYH	Dynacq Healthcare, Inc. http://www.dynacq.com/companyHistory.htm	3	82,249
HCA	HCA, Inc. went private in 2006 http://www.hcahealthcare.com/	270	24,280,000
HCR	Manor Care, Inc. http://www.hcr-manorcare.com/Home/AboutOurCompany/CompanyProfile/tabid/176/Default.aspx	500	2,398,477 (2006)
HLS	HealthSouth Corporation http://www.healthsouth.com/what_we_do/default.asp	200	1,998,200
HMA	Health Management Associates, Inc. http://www.hma.com/About/CompanyInformation/8/Content.aspx	54	4,555,529
KND	Kindred Healthcare, Inc. http://www.kindredhealthcare.com/	655	2,181,761
LPNT	LifePoint Hospitals, Inc http://www.lifepointhospitals.com/communities.html	47	3,680,300
MDTH	Med Cath Corporation http://www.medcath.com/Default.aspx?tabid=628	9	653,456
RHB	RehabCare Group, Inc. http://www.rehabcare.com/about/index.html	1200	438,406
SSY	SunLink Health Systems, Inc. http://www.sunlinkhealth.com/	7	111,624
THC	Tenet Healthcare Corporation http://en.wikipedia.org/wiki/Tenet_Healthcare_Corporation	57	8,174,000
UHS	Universal Health Services, Inc http://www.uhsinc.com/about_uhs.php	155	3,742,462
	Total (approx.) Healthcare Facilities	3196	

The fourteen publicly traded, for-profit healthcare conglomerates were categorized into two groups based on their median asset value. For the fiscal years 2005 to 2008, the median asset value was nearly

four billion dollars. The group category firm size based on asset value was used as the independent variable. Out of the data representing fourteen healthcare conglomerates, seven fell below the median asset value and were labeled small size hospitals. The other seven ranked above the median asset value and were labeled large size hospitals.

From the selected multihospital health care conglomerates' data for the fiscal years 2005 to 2008, thirteen financial performance ratios were used as dependent variables grouped into four categories:

Liquidity: Current Ratio, Quick Ratio, Net Sales to Working Capital

Leverage: Debt to Equity, Total Liabilities to Total Assets

Profitability: Return on Assets (ROA), Return on Equity (ROE), Operating Profit Margin to EBIT, Percent EBITDA

Turnover: Average Collection Period Days, Accounts Receivable Turnover Days, Average Credit Collection Days, Asset Turnover

The study assumes that the financial performance ratios will serve as an indicator of existing relationships between the independent and dependent variables. The ratios will also aid in determining if hospital size (the independent variable) can differentiate hospital financial performance. A final assumption of the study is that the data presented is accurate and sufficient for examination purposes.

Data Analysis and Results

The thirteen financial performance ratios were used to observe differences between the two asset size categories of healthcare conglomerates: small hospitals and large hospitals. Univariate and Multivariate Analysis of Variance were performed for each of the groups of financial performance ratios: liquidity, leverage, profitability, and turnover.

The results for the multivariate analysis (MANOVA) for the liquidity ratios for the Hotelling's trace p-values .370 (2005), .221 (2006), .296 (2007), and .607 (2008) show not significant differences in the liquidity ratios between the small asset size and the large asset size hospitals. The univariate analysis of variance (ANOVA) as shown in Table II indicates that the individual liquidity ratios current ratio, quick ratio, and net sales to working capital are all not significant. The liquidity ratios (individually and collectively) of small size hospital are not different from large size hospitals for each of the years 2005, 2006, 2007, and 2008.

Table II Univariate Analysis of Variance of the Differences in the Mean Financial Liquidity Ratios between Below Median Asset Size Hospitals (small) and Above Median Assets Size Hospitals (large) for the years 2005, 2006, 2007, & 2008.

ANOVA
Dependent: Liquidity Ratios – Current Ratio, Quick Ratio, Net Sales/Working Capital
Independent: Asset Size – Small (below median), Large (above median)
Fourteen Healthcare conglomerates comprising 3196 entities – hospitals, ambulatory surgery centers, nursing homes, diagnostic and therapeutic facilities, other healthcare related facilities

Liquidity Ratios	Group by Asset Category	2005 df = 1, 11		2006 df = 1, 11		2007 df = 1, 11		2008 df = 1, 11	
		Mean	Sig.	Mean	Sig.	Mean	Sig.	Mean	Sig.
Current Ratio	Below Median	1.729	.581	1.907	.392	2.072	.219	1.968	.807
	Above Median	1.532		1.592		1.542		2.109	
	Total	1.631		1.749		1.787		2.044	
Quick Ratio	Below Median	1.403	.489	1.530	.333	1.839	.226	1.751	.736
	Above Median	1.218		1.238		1.369		1.945	
	Total	1.310		1.384		1.586		1.856	
Net Sales/ Working Capital	Below Median	25.593	.197	15.570	.096	-19.5	.334	11.707	.208
	Above Median	10.541		6.100		7.507		2.949	
	Total	18.067		10.835		-4.974		6.991	

The results for the multivariate analysis (MANOVA) for the leverage ratios for the Hotelling's trace p-values .512 (2005), .348 (2006), .084 (2007), and .117 (2008) show not significant differences in the leverage ratios between the small asset size and the large asset size hospitals. The univariate analysis of variance (ANOVA) as shown in Table III indicates that the individual leverage ratios debt to equity and total liabilities to total assets are not significant. The leverage ratios (individually and collectively) of small size hospitals are not statistically significantly different from large size hospitals for each of the years 2005, 2006, 2007, and 2008.

Table III Univariate Analysis of Variance of the Differences in the Mean Financial Leverage Ratios between Below Median Asset Size Hospitals (small) and Above Median Assets Size Hospitals (large) for the years 2005, 2006, 2007, & 2008.

ANOVA

Dependent: Leverage Ratios – Debt to Equity, Total Liabilities/Total Assets Independent: Asset Size – Small (below median), Large (above median)

Fourteen Healthcare conglomerates comprising 3196 entities – hospitals, ambulatory surgery centers, nursing homes, diagnostic and therapeutic facilities, other healthcare related facilities

Leverage Ratios	Group by Asset Category	2005 df = 1, 12		2006 df = 1, 12		2007 df = 1, 12		2008 df = 1, 12	
		Mean	Sig.	Mean	Sig.	Mean	Sig.	Mean	Sig.
Debt to Equity	Below Median	1.188	.737	1.392	.559	1.043	.247	1.159	.261
	Above Median	1.675		4.162		30.466		15.661	
	Total	1.431		2.777		16.887		8.967	
Total Liabilities/ Total Assets	Below Median	.517	.268	.552	.166	.500	.037	.520	.058
	Above Median	.689		.824		.954		.942	
	Total	.603		.688		.744		.747	

The results for the multivariate analysis (MANOVA) for the profitability ratios for the Hotelling's trace p-values .165 (2005), .077 (2006), .125 (2007), and .212 (2008) show not significant differences in the profitability ratios between the small asset size and the large asset size hospitals. The univariate analysis of variance (ANOVA) as shown in Table IV indicates that the individual profitability ratios: Return on Asset (ROA), Return on Equity (ROE), Operating Profit Margin to EBIT, and Percent EBITDA are not significant. The profitability ratios of small size hospitals are not collectively different from large size hospitals.

Table IV Univariate Analysis of Variance of the Differences in the Mean Financial Profitability Ratios between Below Median Asset Size Hospitals (small) and Above Median Assets Size Hospitals (large) for the years 2005, 2006, 2007, & 2008.

ANOVA: Dependent: Profitability Ratios – ROA, ROE, Operating Profit Margin/EBIT, Percent EBITDA; Independent: Asset Size – Small (below median), Large (above median)

Fourteen Healthcare conglomerates comprising 3196 entities – hospitals, ambulatory surgery centers, nursing homes, diagnostic and therapeutic facilities, other healthcare related facilities

Profitability Ratios	Group by Asset Category	2005 df = 1, 11		2006 df = 1, 11		2007 df = 1, 11		2008 df = 1, 11	
		Mean	Sig.	Mean	Sig.	Mean	Sig.	Mean	Sig.
ROA	Below Median	4.60%	.166	4.80%	.047	2.50%	.432	3.30%	.452
	Above Median	-0.70%		-3.00%		6.40%		4.90%	
	Total	1.90%		0.80%		4.60%		4.10%	
ROE	Below Median	11.30%	.498	12.10%	.296	4.90%	.715	6.90%	.477
	Above Median	1.70%		-37.1%		-9.30%		19.60%	
	Total	6.50%		-12.4%		-2.70%		13.70%	
Operating Profit Margin/ EBIT	Below Median	11.00%	.378	9.90%	.361	9.90%	.788	10.10%	.819
	Above Median	6.20%		4.40%		8.50%		11.30%	
	Total	8.60%		7.10%		9.20%		10.70%	
Percent EBITDA	Below Median	14.50%	.547	13.40%	.501	13.60%	.995	13.60%	.625
	Above Median	11.20%		9.30%		13.50%		16.30%	
	Total	12.80%		11.30%		13.50%		15.10%	

The results for the multivariate analysis (MANOVA) of the turnover ratios for the Hotelling's trace p-values .033 (2005), .055 (2006), .009 (2007), and .080 (2008) show significant differences in the turnover ratios between small asset size and large asset size hospitals. The combined effect of the four turnover ratios showing significant results is due to the strong influence of the asset turnover ratio. The univariate analysis of variance (ANOVA) as shown in Table V indicates that the individual turnover ratios - average

collection period days, accounts receivables turnover days, average credit collection days, and asset turnover are significant for years 2005 and 2007, where the small size firms show lower collection days compared to large size firms. However, the asset turnover ratio is significant for all years from 2005 to 2008 with the small size firm showing higher values. Though the Hotelling's trace as previously shown was significant, the results of ANOVA for all four years 2005 to 2008 are not significant for all four years except for asset turnover.

Table V Univariate Analysis of Variance of the Differences in the Mean Financial Turnover Ratios between Below Median Asset Size Hospitals (small) and Above Median Assets Size Hospitals (large) for the years 2005, 2006, 2007, & 2008.

ANOVA:Dependent: Turnover Ratios – Average Collection Period Days, Accounts Receivables Turnover Days, Average Credit Collection Days, Asset Turnover
Independent: Asset Size – Small (below median), Large (above median)
Fourteen Healthcare conglomerates comprising 3196 entities – hospitals, ambulatory surgery centers, nursing homes, diagnostic and therapeutic facilities, other healthcare related facilities

Turnover Ratios	Group by Asset Category	2005 df = 1, 11		2006 df = 1, 11		2007 df = 1, 11		2008 df = 1, 11	
		Mean	Sig.	Mean	Sig.	Mean	Sig.	Mean	Sig.
Average Collection period Days	Below Median	48.88	.035	54.82	.219	55.06	.071	57.15	.279
	Above Median	64.83		69.56		75.38		69.88	
	Total	56.85		62.19		66.00		64.01	
Accounts Receivables Turnover Days	Below Median	7.66	.023	7.06	.166	6.87	.047	6.66	.276
	Above Median	5.89		5.75		5.18		5.67	
	Total	6.77		6.41		5.96		6.12	
Average Credit Collection Days	Below Median	6.96	.035	7.81	.219	7.84	.071	8.14	.279
	Above Median	9.23		9.91		10.73		9.95	
	Total	8.10		8.86		9.40		9.11	
Asset Turnover (Sales/Assets)	Below Median	1.46	.011	1.40	.015	1.44	.015	1.32	.048
	Above Median	.81		.80		.82		.91	
	Total	1.14		1.10		1.11		1.10	

Conclusions and Recommendations

The environment that hospitals now face is considerably different from the past, resulting in hospitals realizing smaller and smaller profit margins. Medicare patients comprise a significant percent of hospital patients. With the aging of baby boomers and the overall increase in life expectancy, the population of Medicare patients is anticipated to rise dramatically.

Our study examined hospital profitability issues using data from the post- Prospective Payment System (PPS) period. Many previous studies examined hospital profitability and performance on the pre-Prospective Payment System period (before 1993); or during the time PPS was being implemented (1993-1998); or right after full implementation of PPS (1998). The data employed by this study was derived from financial statements prepared in the post- PPS period (2005 to 2008). Our results reflect multihospitals' financial results using the payment system that hospitals are currently subject to.

The liquidity, leverage, profitability, and turnover ratios in the sample we studied led to the conclusion that (overall) large size hospitals do not financially perform better compared to small size hospitals. Although, large hospitals have the ability to provide more diverse healthcare services as well as make more efficient utilization of human and capital resources, assets, and technology than small hospitals can, in our 2005 to 2008 sample of fourteen publicly traded multihospital health care conglomerates comprising nearly 3196 multihospital systems – hospitals, ambulatory surgery centers, nursing homes, diagnostic and therapeutic facilities, other healthcare related facilities, that larger hospitals do not financially perform any better than smaller hospitals.

The statistical importance of the variables implies that both financial and managerial strategies should be employed to improve the profitability of hospitals. The challenge in this new environment is to use capital resources effectively. Fundamental issues, such as motivating physicians and staff to cut costs, reducing the cost of services, and increasing patient volume, while anticipating the behavior of third party payers are key issues in improving profitability. The findings in this study should prove beneficial to hospital administrators and health professionals in general.

The study's limitations should be considered. Financial variables alone do not in and of themselves offer a complete understanding of financial conditions. Indeed, only one variable Asset Turnover was significant. In addition, our collection of data was limited to publically traded, for-profit hospitals for the years 2005 to 2008. For future research, relating the American Hospital Association's annual survey data with Medicare Cost Report data to include non-profit hospitals and non-financial variables will help in obtaining a more complete picture of the factors influencing hospital profitability.

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STRATEGIC LEADER ACTIONS RELATED TO THE EFFECTIVENESS OF HOSPITAL MANAGERS IN TURKEY

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ABSTRACT

The purpose of this study was to identify strategic leader actions that distinguish effective hospital managers in Turkey. Three constructs framed the study: leader actions, organizational-personal characteristics and hospital manager effectiveness. This study used a quantitative non-experimental design and multiple regression and correlation techniques to identify the relationships between the variables examined. Four hundred forty (440) hospital managers participated in the study. Results revealed that all leader actions [transforming, managerial, political and ethical] were related to the health care manager's effectiveness. The use of transforming actions by the managers was the strongest predictor of the health care manager's effectiveness. Leader actions were influenced by the complexity of the organizational environment, the region where the managers were employed, the type of hospital (research or general), the competition status in that region, and the bed capacities of their hospitals. No significant associations were found for personal characteristics.

Keywords: strategic leadership, health care management, public sector

Introduction

Providing healthcare services in almost all countries is increasingly problematic. Over the past 30 years healthcare delivery has evolved from highly regulated, fairly predictable business into competitive and dynamic business (Zuckerman, 2000). Major forces in healthcare environment include the rise of cost containment mechanism, increased regulatory oversight, increased use of technology, and existence of and reliance on performance and outcome indicators. As a result of these complexities, healthcare

organizations must seek innovative ways to deliver healthcare more efficiently and effectively (Guo, 2003). They must balance quality of life issues and with bottom line profits in a complex and rapidly changing competitive environment (Hartman & Crow, 2002). They must work smarter and more efficiently with fewer available resources and a workforce that may not be prepared to adjust quickly to the changing environment (Wallick, 2002).

The Turkish context

In 2003, the Turkish government passed The Public Finance Management and Control Law No: 5018 into law to address some of these complexities and to improve public sector management in general. A centerpiece of this law was the emphasis on the strategic management as the tool to drive improvement by requiring public organizations to prepare their strategic plans. As a part of Public Finance Management Reforms, macro-level budget preparation, ensuring fiscal discipline, ***distribution*** of ***resources*** according to strategic priorities, monitoring ***efficiency*** in ***resource*** usage, providing accountability and improving public accountability had been emerged as important topics (State Planning Organization [SPO], 2006). It was thought that strategic planning would provide effectiveness for public finance management and also support, develop and strengthen the organizational culture and identity (SPO, 2006: 1). As a result, public managers, particularly public healthcare managers, in Turkey are required to have more strategic leadership skills than before to manage and cope with strategic management process. This paper presents the findings of a study of the use of strategic leader actions and effectiveness in hospitals under the direction of the Turkish Ministry of Health.

Purpose

The purpose of this study is to identify strategic leader actions that distinguish effective hospital managers in Turkey. The three questions which guided the study asked if (a) the actions of the hospital mangers influenced their effectiveness, (b) personal and organizational characteristics of the managers moderated the manager's actions and their effectiveness, and (c) a predictive model of strategic leader actions, organizational and personal characteristics and manager effectiveness could be found. Six related hypotheses were tested.

Importance of the study

The study is important because it inquires into the ability of hospital managers in Turkey to implement an important policy initiative. Are health care managers who act strategically more effective than those who don't? If a relationship between actions and effectiveness can be established, training programs specific to hospital managers could be developed. The study also provides new information to effectiveness hospital management practices that can be emulated by others. Finally, it adds to the developing strategic leadership literature and results can help identify potential outstanding leaders and future research areas.

Conceptual Framework

Dealing with rapid, complex and often discontinuous change requires leadership (Swayne et al., 2006). As Spinelli, 2006 suggests new leadership strategies are required by healthcare organizations in order to remain viable to meet the current challenges. Health care organizations must have leaders who understand the nature and implications of external change, the ability to develop effective strategies that account for change, and the will as well as the ability to actively manage the momentum of the organization. Health care leaders must understand the changes taking place in their environment and they should not simply be responsive to them, but strive to create the future. Health care leaders must see into the future and create new visions for effectiveness. These activities are collectively referred to as strategic management and are fundamental in leading organizations in dynamic environment (Swayne et al., 2006).

While several descriptions of strategic management have been practiced in the past, Henry Mintzberg, (1994) the Canadian management scholar, says strategic planning from a highly quantitative perspective is dead in today's fluid environments. He concluded that the search for the definitive quantifiable solution to the future is no longer attainable. In fact, it can stifle commitment, narrow vision and make change less likely. New models of strategic management which place more emphasis on synthesis rather than pure analyses are being identified.

Pisapia's (2009a) model bridges the new and the old. Pisapia defines strategic leadership as the ability (as well as the wisdom) to make consequential decisions about ends, actions and tactics in ambiguous environments. He uses the term strategic leaders to identify leaders who are able to lead and manage simultaneously, and hence guide transformations with a profound appreciation of stability during times of uncertainty. Such leaders, he says, practice the mantra of common ends and values, and adaptable ways and means. The central tenet of Pisapia's strategic leadership theory is that leaders who are able to think and act strategically will be able to create more supportive organizational environments and achieve more valuable organizational outcomes. This ability to work in a strategic way, he believes, must extend through every level of the organization. Effectiveness in his strategic model of leadership is dependent on how proficiently the organization responds and readapts to its ever-evolving context and how effective the leader is in continually renewing the systems of learning within the organization.

He identifies the ability to think agility and act as an artist as the core competencies required to run two protocols: - strategic thinking and strategic execution. Strategic execution is the guiding framework of this study. In this portion of the model, Pisapia suggests that strategic execution is facilitated when the leader or manager acts like an artist. Like an artist, they use a palette of leader actions – managing, transformative, political and ethical – to develop and execute their plans. He theorizes that leaders who are able to use the full array of the four actions will be more effective in more contexts than leaders who are not able to use a wide array of actions.

Three constructs framed the study: leader actions, organizational-personal characteristics and hospital manager effectiveness. The relationships of these constructs are found in Figure 1. This framework suggests that personal and organizational characteristics of hospital managers influence leader actions, and leader actions, personal and organizational characteristics combine to influence hospital managers' effectiveness.

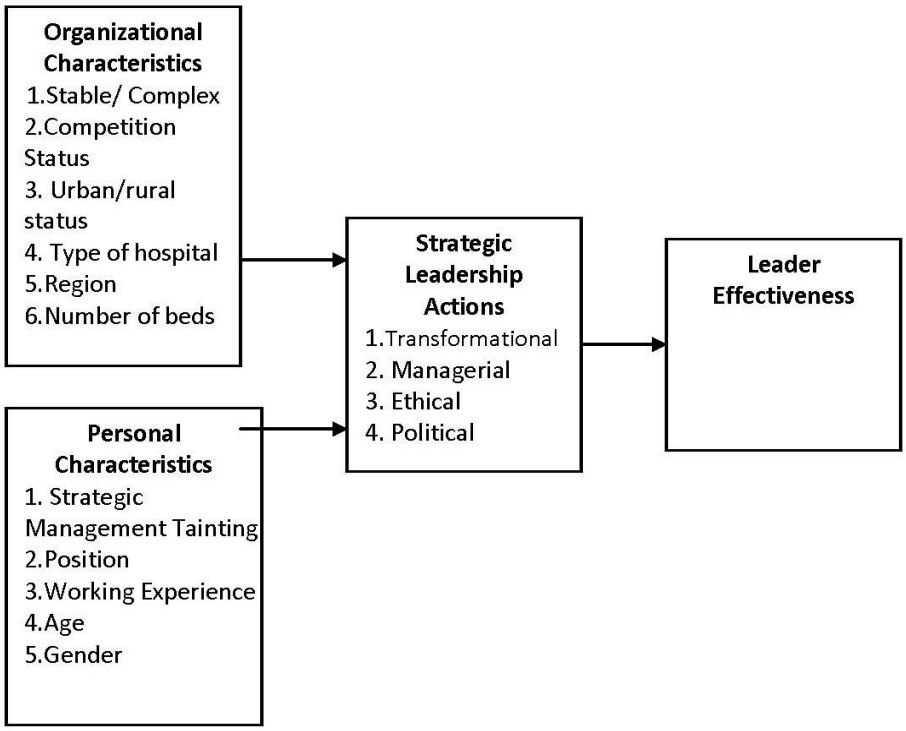

Figure 1. **The Conceptual Framework Guiding the Study**

Leader Actions

According to Sperry (2003), to become an effective healthcare manager, managers must have the core set of skill includes the various operational (such as commitment and motivation), relational (such as communicating and negotiating effectively) and analytic (such as thinking and deciding strategically) skills. According to Zweel and Lubawski (2000) effective healthcare managers can tell the strengths and weaknesses of their institutions; they are aware of societal, demographic and health care trends and implications of those trends to the organization. They are also aware of the nuances of prestige, status and power within their organization. And they must have the ability to make tough decisions.

Pisapia (2006; 2009a) says, that one of the reasons that leaders in complex environments fail is that they use a limited set of actions (i.e., task/relationships or transforming/transactional) to influence followers

to join in common cause. He asserts that in today's sometime turbulent environment, leaders need to be able to lead and manage simultaneously to guide transformations. This expectation puts a premium on horizontal and collaborative actions as well as the traditional hierarchical actions of past models. He grounds his strategic leadership model in holistic learning processes of strategic thinking and strategic execution which are guided by leaders using managerial, transforming, political and ethical actions to transform or stabilize their organizations. (See Pisapia, 2009a for a full description of the actions). Three previous studies using this theory have been conducted. Yasin (2006) found that University Deans who were able to use a wide array of strategic leader actions were more effective than those who used a more limited array. Like Yasin, Reyes-Guerra (2009) found that school principals who were able to use a wider array of these actions were more effective than those principals who used a more limited repertoire of actions, and that managerial actions are necessary when implementing centrally dictated policies. Finally, Urdegar (2007) and Reyes-Guerra (2009) found that components of the transforming, political and ethical actions were associated with more cohesive work cultures. These studies lend support to Pisapia's proposition that effective leaders use a wider array of these actions than less effective leaders. Therefore, in this study it is expected that the hospital managers' use of strategic leader actions would be related to their effectiveness.

Environmental and Personal Characteristics

As Pisapia and many others note, context is important. Kolb et al. (2001) believed that organizational environment is an important factor influencing how the leader behaves. According to them, environment dictates the choice of structure and the way the communication is implemented in the organization. Cook (2001) claimed that internal and external environment of the organization is a factor that impacts and contributes to dominant leadership style in the organization. According to Hinkin and Tracey (1999) organizational settings may play a very large role in the transformational leadership process and transformational leadership would be more likely to be found in organization effectively navigating turbulent environment. According to Osborn et al. (2002), leadership and its effectiveness depends on a wide variety of environmental and organizational conditions apart from the style of leadership. Leadership is not only the incremental influence of a leader toward subordinates, but most important it is the collective incremental of leaders in and around the system. In this study, the organizational environment was determined in two ways. First, the hospital manager's view of the environment as complex or stable was measured. Then other objective measures of complexity - competition status, urban/rural status, type of hospital, region and number of beds in the hospital - were measured.

In addition to the environmental variables, personal characteristics and traits of the leader may also affect their style of leadership and eventually their effectiveness. The study of leader characteristics and traits has a long history. In fact it was the first organized approach to studying leadership. By analyzing the personal, psychological and physical traits of strong leaders, researchers hoped differentiate leaders from nonleaders (Griffin, 2002; Luthans, 1981). Hundreds of traits studies were conducted during the 1930s and 1940s and some research founded a significant correlation between individual leader

attributes and a criterion of leader effectiveness (Yukl, 2002). In this study several personal characteristics of leaders - position, working experience, age, gender and strategic management training - were identified to determine if they are related to both the use of strategic leader actions and leader effectiveness. Therefore, in this study it is expected that the hospital managers' use of strategic leader actions would be influenced by both organizational and personal characteristics.

Effectiveness

Luthans (1988) differentiated effective leaders from effective managers. According to him effective leaders refers to "those who have been promoted relatively quickly" and effective leaders refer to "those who have satisfied, committed subordinates and high performing units" (p.137). But in the leadership literature "successful leader" and "effective leader" have often used interchangeable. This study adopts Luthan's view of leader effectiveness is the result of satisfying committed subordinates and high performing units as the criterion variable.

Leadership scholars have used different indicators for evaluating leadership effectiveness or effectiveness. Some objective criteria include followers' productivity and the amount of work completed or group and organizational outcomes. Some subjective criteria include rating of effectiveness obtained from the leader's peers, subordinates or superiors (Howell & Costley, 2006; Yukl, 2002). The effectiveness in this study was measured by the hospital managers' perception of effectiveness. Items measuring effectiveness included; ability to create, articulate and implement a vision, ability to bring about change in the organization, maintenance of a orderly work environment, and ability to satisfy internal and external stakeholders. Two level of effectiveness were created: most effective and somewhat effective.

Method

This study used a quantitative non-experimental design employing statistical analysis via multiple regression and correlation techniques to identify the relationships between the variables examined. Four hundred forty (440) hospital managers in charge of hospitals under the auspices of the Ministry of Health participated in the study. Sampling power was tested and deemed acceptable.

The characteristics of the study participants are summarized in Table 1. Of the sample, 43.2% were physician, 30.7% were administrator who had formal training in faculty of economics and administrative sciences, 15.2% were hospital administrators who had formal training in health administration and remaining 10.9% were from other health care or non-health care professionals. Head physicians or their deputies composed 43.6% of the sample, 56.4% held hospital administrator and their deputies. Males composed of 85% of the sample and females 15%. The mean age of sample was about 41 years and the mean working years were about 17 years. About fifty percent (49.8%) of the sample were above 42 years of age. Half of respondents (51.8%) had working experience more than 18 years. The big majority (90.5%) had not received postgraduate education. A total of 312 respondents (70.9%) reported that they had not been trained about strategic management.

Table 1.

Descriptive Characteristics of the Respondents

Characteristics	N	%
Profession		
Physician	190	43.2
Administrator (Faculty of Economics and Administrative Sciences)	135	30.7
Health Administrator	67	15.2
Other	48	10.9
Position		
Head physicians	67	15.2
Head physician' deputies	125	28.4
Hospital Administrators	118	26.8
Hospital Administrator' deputies	130	29.6
Gender		
Female	66	15.0
Male	374	85.0
Age		
≤41 years old	221	50.2
≥42 years old	219	49.8
Working Experience		
≤17 years	212	48.2
≥18 years	228	51.8
Postgraduate education		
No	398	90.5
Master	40	9.1
Doctoral degree	2	0.4
Strategic Management Training		
No	312	70.9
Yes*	128	29.1
TOTAL	**440**	**100**

* Short course (9.1%), Certificate program (10.2%), Lesson (9.8%)

The Strategic Leadership Questionnaire (SLQ_{v1}) was the primary data collection tool. The SLQ_{v1} measures the use of managing, transforming, political and ethical leader actions. The SLQ_{v1} used a panel of experts in the field to create the validity measure on the scale. Psychometric testing of the SLQ revealed that reliability for all four action scales was above .816 on the Cronbach Alpha measure. Overall instrument reliability was .910. The SLQ also provides a self reported measure of leader effectiveness, [Alpha .897] and the respondent's perception of the complexity of their environment. The SLQ_{v1} was translated into Turkish by three bilingual academicians with doctoral degrees in health administration and back translated into English by a sworn translator. The back translated version and the original version were found to be quite similar. The content validity of the translated version was verified and validated by two experts experienced in strategic management. Complexity was also measured by the number of beds in the hospital, type of hospital, and the level of competition found in the hospital's environment. The personal characteristics studied were position, work experience, age, gender and strategic

management training. Simple correlation and multiple regression analyses were used to examine study hypotheses. Level of significance was set at $p<0.05$ and $p<0.10$. The self reported data from participants was seen as a limitation of the study.

Results from hypotheses testing

The first hypothesis: H_{o1} that there are no significant relationships between the hospital manager's use of transformational, managerial, ethical and political leadership actions and their effectiveness was tested through a multiple regression. Table 2 displays the multiple regression analysis conducted to investigate the relationship of leader actions and leader effectiveness. On the table The 10 effectiveness items representing the leader effectiveness from SLQ_{V1} have a different response scale. In this scale, "1" points out "extremely effective" and "5" points out "not effective."

Table 2.

Multiple Regression Analysis between Leader Actions and Leader Effectiveness

Variable	B	Std. Error	β	t	p
(Constant)	5.601	0.360		15.561	0.000
Transformational	-0.450	0.108	-0.305	-4.155*	0.000
Managerial	-0.205	0.122	-0.135	-1.677	0.094
Ethical	-0.219	0.138	-0.115	-1.587	0.113
Political	0.108	0.073	0.083	1.493	0.136
$R = 0.468$	$R^2 = 0.219$				
$F_{(4,435)} = 30.463$	$p = 0.000$				

* $p<0.05$ (criterion: effectiveness)

Results of analysis show R^2 value of 0.219 and overall relationship was significant ($F(4,435) = 30.463$, $p<0.05$). Results further indicate that these four actions contributed 21.9% of the variance for the leader effectiveness. As seen in Table 2, the Beta values for the transformational, managerial, ethical and political leader actions were -0.305, -0.135, -0.115, and 0.083 respectively. Based on these beta values, transformational leadership was the strongest predictor of leader effectiveness and followed by managerial, ethical and political leadership. However it should be noted that transformational leadership was significant at the 0.05 level ($p<0.05$), while managerial, ethical and political leadership were not significant. Political leader actions were negatively related with effectiveness. But when it was further analyzed with simple linear regression, it was found that political leadership was significantly related in the positive direction to leader effectiveness ($F=27.179$, $p<0.05$). The results of these analyses indicate a significant relationship among hospital manager actions and their effectiveness. Therefore, H_{o1}: which stated that there are no significant relationships between the hospital manager's use of transformational, managerial, ethical and political leadership actions and their effectiveness is rejected.

The second hypothesis $H_{o2:}$ that there is no relationship between organizational characteristics and the hospital manager's use of leader actions was tested using four multiple regression analyses between organizational characteristics and each of the strategic leader actions – transformational, managerial,

political and ethical. Table 3 displays the results of multiple regression analysis between organizational characteristics versus transformational leadership.

Six organizational characteristics were regressed against the use of transformational leader actions – environment (stable or complex), region, hospital type, rural/urban, completive status, and hospital beds. As seen on the table, the relationship between organizational characteristics and transformational actions was significant. The results indicated that an R^2 value of 0.07 and overall relationship were significant ($F(12.427) = 3.031$, $p<0.05$). Overall, the organizational characteristics represent about 7.8% of the variance in transformational leadership and the model was significant ($p<0.05$).

Table 3.
Multiple Regression Analysis: Organizational Characteristics versus Transformational Leadership

Variable	B	Std. Error	β	t	p
(Constant)	3.348	0.171		19.560	0.000
Organizational Environment	0.201	0.044	0.214	4.592**	0.000
Region					
Mediterranean Sea	0.019	0.076	0.014	0.250	0.803
East and South East Anatolia	-0.112	0.075	-0.082	-1.491	0.137
Aegean Sea	-0.136	0.072	-0.105	-1.893*	0.059
Central Anatolia	-0.139	0.062	-0.126	-2.228**	0.026
Black Sea	-0.058	0.067	-0.049	-0.863	0.389
Marmara Region (Reference)					
Hospital Type					
General Hospital	0.115	0.070	0.090	1.644	0.101
Research Hospital (Reference)					
Urban/rural status					
Urban	-0.009	0.054	-0.010	-0.164	0.870
Rural (Reference)					
Number of beds					
101-350	0.061	0.055	0.065	1.112	0.267
351 and more	0.102	0.068	0.109	1.514	0.131
0-100 (Reference)					
Competition status					
No competition	0.059	0.058	0.053	1.015	0.310
Competition exist	0.008	0.047	0.009	0.161	0.872
A little competition (Reference)					
$R = 0.280$	$R^2 = 0.078$				
$F_{(12.427)} = 3.031$	$p = 0.000$				

* $p<0.10$ ** $p<0.05$ (criterion: transformational leadership)

However, examination of the six organizational characteristics reveals that only organizational environment and region produced significant results. Based on the Beta values as seen in Table 3, organizational environment (0.214) produced a significant positive relationship with transformational leadership actions; meaning that transforming actions were used more often as the perceived

organizational environment became more stable. The other significant relationship between the region variable and transformational actions was negative; meaning that fewer transforming actions were used by managers in the Aegean Sea and Central Anotalia.

Table 4 displays the results of multiple regression analysis between the six organizational characteristics and managerial leader actions. As seen on the table, the relationship between organizational characteristics and managerial actions was significant. The analysis results are presented in on Table 5. Results of analysis show R^2 value of 0.392 and overall relationship was significant (F (12.427) =6.457, $p<0.05$). Overall, the organizational characteristics represented about 15.4% of the variance in managerial leadership and the model was significant ($p<0.05$).

Table 4.

Multiple Regression Analysis: Organizational Characteristics versus Managerial Leader Actions

Variable	B	Std. Error	β	t	p
(Constant)	2.827	0.159		17.724	0.000
Organizational Environment	0.316	0.041	0.347	7.758**	0.000
Region					
Mediterranean Sea	0.120	0.071	0.089	1.687*	0.092
East and South East Anatolia	0.027	0.070	0.020	0.384	0.701
Aegean Sea	-0.058	0.067	-0.046	-0.864	0.388
Central Anatolia	0.009	0.058	0.008	0.152	0.879
Black Sea	0.033	0.063	0.029	0.534	0.594
Marmara Region (Reference)					
Hospital Type					
General Hospital	0.062	0.065	0.050	0.956	0.340
Research Hospital (Reference)					
Urban/rural status					
Urban	-0.002	0.051	-0.002	-0.043	0.966
Rural (Reference)					
Number of beds					
101-350	0.118	0.051	0.129	2.307**	0.022
351 and more	0.130	0.063	0.143	2.068**	0.039
0-100 (Reference)					
Competition status					
No competition	0.076	0.054	0.071	1.407	0.160
Competition exist	-0.004	0.044	-0.005	-0.094	0.925
A little competition (Reference)					
R = 0.392	R^2 = 0.154				
$F_{(12.427)}$ =6.457	p = 0.000				

* p<0.10 ** p<0.05 (criterion: managerial Leader Actions)

Organizational environment, number of beds and region were statistically significant for alpha equaling 0.05 in predicting managerial leadership actions used by leaders. According to Beta values for managerial leader actions, organizational environment (0.347) was the strongest predictor of

managerial actions, followed by number of beds and region. All relationships were positive, meaning that as the environment was perceived as being more stable, and the number of beds rose so did the use of managerial actions.

Table 5 displays the results of multiple regression analysis between the six organizational characteristics and ethical leader actions. As seen on the table, the relationship between organizational characteristics and ethical actions was significant. Results of analysis displayed R^2 value of 0.130 and overall relationship was significant (F (12.427) = 5.316, $p<0.05$). The results indicate that together these organizational characteristics contributed 13.0% of the variance for the ethical leadership and the model was significant ($p<0.05$).

Table 5.

Multiple Regression Analysis: Organizational Characteristics versus Ethical Leader Actions

Variable	B	Std. Error	β	t	p
(Constant)	3.541	0.129		27.515	0.000
Organizational Environment	0.224	0.033	0.308	6.805**	0.000
Region					
Mediterranean Sea	0.054	0.057	0.051	0.942	0.347
East and South East Anatolia	-0.029	0.056	-0.028	-0.516	0.606
Aegean Sea	-0.012	0.054	-0.012	-0.215	0.830
Central Anatolia	-0.022	0.047	-0.026	-0.475	0.635
Black Sea	-0.036	0.051	-0.039	-0.710	0.478
Marmara Region (Reference)					
Hospital Type					
General Hospital	0.064	0.053	0.065	1.219	0.223
Research Hospital (Reference)					
Urban/rural status					
Urban	-0.041	0.041	-0.060	-1.003	0.316
Rural (Reference)					
Number of beds					
101-350	0.094	0.041	0.130	2.292**	0.022
351 and more	0.162	0.051	0.224	3.198**	0.001
0-100 (Reference)					
Competition status					
No competition	0.045	0.044	0.053	1.040	0.299
Competition exist	-0.003	0.036	-0.004	-0.077	0.938
A little competition (Reference)					
$R = 0.361$	$R^2 = 0.130$				
$F_{(12.427)} = 5.316$	$p = 0.000$				

* $p<0.10$ ** $p<0.05$ (criterion: ethical leadership)

In the regression model, only perceived organizational environment and number of beds appeared to be significant for alpha equaling 0.05 in predicting the use of ethical leaders' actions. As seen in Table 5, organizational environment produced strongest Beta value (0.308), followed by number of beds (0.224). These findings seem to say two different things. On the one hand, as the perceived organizational environment becomes more stable there is more use of ethical actions. On the other hand as hospital beds rose, so did the use of ethical actions.

Table 6 displays the results of multiple regression analysis between the six organizational characteristics and political leader actions. As seen on the table, the relationship between organizational characteristics and political actions was significant. Results of analysis demonstrate that organizational characteristics combined contributed 14.4% to the variance in political Leader Actions. R^2 value was 0.144 and overall relationship was significant (F (12,427=5,988, p<0.05).

Table 6.

Multiple Regression Analysis: Organizational Characteristics versus Political Leader Actions

Variable	B	Std. Error	β	t	p
(Constant)	2.336	0.186		12.535	0.000
Organizational Environment	0.375	0.048	0.355	7.885**	0.000
Region					
Mediterranean Sea	-0.106	0.083	-0.068	-1.279	0.202
East and South East Anatolia	-0.045	0.082	-0.029	-0.553	0.580
Aegean Sea	-0.082	0.078	-0.056	-1.056	0.291
Central Anatolia	-0.041	0.068	-0.033	-0.610	0.542
Black Sea	-0.059	0.073	-0.044	-0.804	0.422
Marmara Region (Reference)					
Hospital Type					
General Hospital	0.123	0.076	0.085	1.616	0.107
Research Hospital (Reference)					
Urban/rural status					
Urban	-0.043	0.059	-0.043	-0.730	0.466
Rural (Reference)					
Number of beds					
101-350	0.110	0.060	0.103	1.839*	0.067
351 and more	0.139	0.074	0.132	1.896*	0.059
0-100 (Reference)					
Competition status					
No competition	0.006	0.063	0.005	0.100	0.920
Competition exist	-0.039	0.052	-0.039	-0.758	0.449
A little competition (Reference)					
R = 0.380 R^2 = 0.144					
$F_{(12.427)}$ = 5.988 p = 0.000					

* p<0.10 ** p<0.05 (criterion: political leader actions)

The analysis of individual organizational characteristics yields a similar pattern as the results for transformational, managerial, and ethical actions. Only perceived organizational environment (Beta=0.355) appeared to be significant for alpha equaling 0.05 in predicting the use of political actions. The number of beds in the hospital, while important, did not rise to the .05 significance criterion.

The results found on Table 2,3,4, 5,and 6 indicate that transformational, managerial, ethical and political leader actions were significantly influenced by organizational characteristics; particularly organizational environment, region, hospital size. Therefore, $H_{o2:}$ which stated that "There is no relationship between organizational characteristics and the use of leader actions" is rejected.

The third hypothesis H_{o3}: stated that there is no relationship between personal characteristics of hospital managers and their use of strategic leader actions was tested by using four multiple regression analyses between the hospital managers personal characteristics (work experience, age, position, strategic management training, and gender) and each of the strategic leader actions. No statistically significant relationships were found therefore due to space limitations the data are not reported. The full data set can be retrieved from Uğurluoğlu (2009).

The fourth hypotheses H_{o4}: stated that there are no predictive relationships among the hospital managers use of leader actions, contextual and personal characteristics and their effectiveness was tested through multiple regression analyses to demonstrate a predictive model between the leader's action and their effectiveness. As seen on Table 7, the results of this analysis produced a significant model ($F(21.418) = 6.480$, $p<0.05$, Adjusted $R^2 = 0.246$). All variables as a whole were good at predicting the leaders' effectiveness. Together these variables contributed 24.6.0% of the variance for the effectiveness and the model was significant ($p<0.05$).

In the regression model, transformational leader actions and competition status were significant for alpha equaling 0.05 in predicting leaders' effectiveness. Additionally managerial and political leader actions were significant at the alpha 0.10 in predicting leaders' effectiveness. As seen in Table 7, transformational leadership produced strongest Beta value (0.293). Therefore, H_{o4} which stated that there are no predictive relationships among the hospital managers use of leader actions, contextual and personal characteristics and their effectiveness is rejected.

Discussion

Results revealed that all four leader actions [transforming, managerial, political and ethical] were related to the health care manager's effectiveness. However, the use of transforming actions by the managers was the strongest predictor of the health care manager's effectiveness. The results also showed that the hospital manager's effectiveness was significantly influenced by the complexity of the organization's environment. Transforming and political actions were used more often as the perceived environment became more stable. Higher use of managerial and ethical actions was found more often in perceived stable environments and as the number beds rose. The findings indicate that the important environmental moderators of the manager's actions were the complexity of the organizational environment, the region where the managers were employed, the type of hospital (research or general), the competition status in that region, and the bed capacities of their hospitals. Similar to Yasin's (2006) study using the same instrumentation with University Deans, personal characteristics of gender, training, position, age and experience did not significantly influence the relationship of leader actions and their effectiveness. A predictive model explaining 25% of the variance [Adjusted $R^2 = 0.246$, $p<0.05$) was produced for hospitals in environments where there was no competition. In these stable environments transforming actions [$p<0.05$] were the strongest predictors of effectiveness, followed by managerial and political leader actions [$p<0.10$].

Table 7.
Multiple Regression Analysis: Strategic Leader Actions, Personal Characteristics and Organizational Characteristics versus Leaders' Effectiveness

Variable	B	Std. Error	β	t	p
(Constant)	5.554	0.461		12.049	0.000
Transformational	-0.433	0.113	-0.293	-3.830**	0.000
Managerial	-0.233	0.127	-0.154	-1.830*	0.068
Ethical	-0.225	0.142	-0.118	-1.586	0.114
Political	0.127	0.075	0.097	1.684*	0.093
Organizational Environment	0.008	0.65	0.006	0.126	0.900
Region					
Mediterranean Sea	0.100	0.105	0.049	0.954	0.341
East and South East Anatolia	-0.129	0.105	-0.64	-1.232	0.218
Aegean Sea	0.040	0.098	0.021	0.402	0.688
Central Anatolia	0.024	0.087	0.015	0.276	0.782
Black Sea	0.031	0.094	0.017	0.325	0.745
Marmara Region (Reference)					
Hospital Type					
General Hospital	-0.159	0.097	-0.084	-1.643	0.101
Research Hospital (Reference)					
Urban/rural status					
Urban	0.065	0.174	0.049	0.874	0.383
Rural (Reference)					
Number of beds					
101-350	0.027	0.076	0.020	0.359	0.719
351 and more	0.023	0.093	0.016	0.244	0.807
0-100 (Reference)					
Competition status					
No competition	0.167	0.078	0.103	2.131**	0.034
A little competition	0.039	0.064	0.028	0.598	0.550
Competition exist (Reference)					
Working Experience (years)	-0.012	0.008	-0.121	-1.426	0.155
Age (years)	0.006	0.009	0.062	0.749	0.454
Position					
Head physicians and their deputies	-0.025	0.061	-0.019	-0.409	0.683
Hospital Administrators and their deputies (Reference)					
Strategic Management Training					
No	0.011	0.063	0.008	0.176	0.860
Yes (Reference)					
Gender					
Female	-0.060	0.082	-0.033	-0.724	0.469
Male (Reference)					
$R = 0.496$ $R^2 = 0.246$					
$F_{(21.418)} = 6.480$ $p = 0.000$					

* p<0.10 ** p<0.05 (criterion: leader effectiveness)

Based on the findings, public hospital managers would benefit from training in all four leader actions. However, transformational actions had the most impact on their effectiveness in stable environments as perceived by the leader and complex environments as determined by the number of beds in the hospital. As the number of beds increased so did the use of transforming actions. This finding is consistent with Bass and Avolio (1990), Bass (1990), Gellis (2001), Lowe et al, (1996), and Spinelli (2006) who reported that managers who behave like transformational leaders are more likely to be seen by their colleagues and employees as effective leaders and results in lower turnover rates, higher satisfaction and commitment.

Our second conclusion is that the environment significantly enhanced the probability of leaders' use of specific leader actions. Contextual factors have often appeared in the research literature as influencing leader actions (Cook, 2001). However, most studies support the proposition that transformational leader actions are more likely to be found in organizations effectively navigating turbulent environments (Hinkin & Tracey,1999), better in non routine situations (Eisenbach et al., 1999; Yukl, 2002), and managerial actions more likely to be found in stable environments (Rowe, 2001). However, Yasin (2006) using the same instrumentation as this study with Deans of Universities found a significant relationship between political actions and stable environments. When perceived stability increased so did political actions ($r=0.475$, $p<0.05$). He found no increased use of the other leader actions in stable environments. Furthermore, this study did find contradictory evidence on the main finding. Leaders from Marmara Region who work in the most competitive sector in Turkey reported the highest use transformational leadership; much more than leaders from Central Anatolia ($t=-2.228$, $p<0.05$) and leaders from Aegean Sea ($t=-1.893$, $p<0.10$). Additionally, similar to Velioglu and Vatan (2002) that bed capacity [a proxy for organizational complexity] of hospitals affects leader behavior. In this study as bed capacity increased so did the use of managerial, ethical and political leadership.

Finally, the results generally support Pisapia's theory of strategic leadership that effective leaders use a multifaceted set of leader actions. But in this study it is unclear why self reported stable environment was associated with increased leader effectiveness, and leaders' use of strategic leadership actions more in relatively stable environments. One explanation to this might be due to fact that the leaders working in relatively stable environment but managing organizations with many problems (like public hospitals in Turkey) have to react more strategically to move their organizations forward and solve the problems. Or it could be that that since stability is not normally associated with organizational growth and change, the presence of increased use of transforming as well as ethical and political leader actions may be the reaction to trying to move a stable organization into a more innovative direction. More likely, the finding could be a study design issue. Most of the hospital managers participating in the study practiced in Ministry of Health hospitals which traditionally are more stable and distinctive environments compared with the private hospitals. Perhaps the sampling did not include enough hospitals in a complex environment. Furthermore, it is possible that the perceptions of participants were not accurate in their interpretation of complexity and that the more objective number of hospital beds and competitive status should have been given more weight in the analysis of complexity. When the data

are considered from this perspective, Pisapia's theory is supported. When complexity increased as measured by number of beds and competitive hospital status, leaders who used a wider array of actions were more effective. At this point, we leave this finding to future studies to explore.

There are several implications of these results for practice and future research. First, health care managers need to develop new skills in strategic execution. While the concept of strategic planning is becoming increasingly important in the changing public system in Turkey, the traditional strategic management skills based in analytics and data will not meet the needs of modern health care managers. Seventy one percent (71%) of respondents in the study reported that they had not been trained about strategic management. Strategic management training for the healthcare managers may help to improve their strategic leadership skills. The type of training that the results of this study points toward is based on developing two core competencies: agility of the mind and artistry of action which drive strategic thinking and strategic execution which enable hospital managers to influence their employees to positive ways and create a cohesive organizational context. In challenging times leaders must develop and execute an actionable plan. Second, future studies examining the differences in terms of leader actions of public and private hospitals should be supported and conducted. Such studies will provide an opportunity to find strategic approaches needed to whole health care system. Finally, hospital manager effectiveness was measured by their personal perception in this study. Researchers should also analyze leader effectiveness using followers' perception or organizations' productivity or profitability indicators.

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THE CONVERGENCE OF BUSINESS AND MEDICINE: A STUDY OF MD/MBA PROGRAMS IN THE UNITED STATES

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ABSTRACT

The purpose of this paper is to identify the convergence of business and medical education and to describe the curricula of MD/MBA programs in the United States. The focus of this study is to provide a guide to dual MD/MBA programs for physicians, aspiring physicians, policy makers, and healthcare organizations. We studied the curricula of 52 universities offering a joint MD/MBA program. The study measured program structure, duration of the dual degree, geographic spread of universities, and the average tuition.

No recent study has looked into the essential characteristics of these programs. The top disciplines among the 46 Programs include strategy, leadership, and financial management. Program duration was between five and six years, with an average of 46 semester hours per degree. The average cost of the MD/MBA degree in addition to Medical school was $35,810. Geographically, the majority of MD/MBA programs are located in the northeastern United States (33.9%), followed by the south (28.6%), the midwest (23.21%) and the west (12.5%).

Introduction

For the last fifteen or more years, there has been a market for training physicians who, in some capacity, practice management in addition to their clinical work. Much of that early training was designed and implemented by such organizations as The American College of Physician Executives, whose members were primarily physicians. As the need grew, medical and business schools took up the challenge to provide physicians with the credentials they desired. Currently, business schools and medical schools are undergoing shifts in their pedagogical paradigms (Bennis & O'Toole, 2005; Buchholz & Rosenthal, 2008,). Ashford (2008) comments, "as professional schools, colleges of business are expected both to produce knowledge and to prepare people for practice (page 68)." This holds true for medical education as well. In

business education, Mintzberg's controversial book, "Managers not MBAs," calls for significant changes in the education of professional managers (2004). He states that MBA programs are often out of touch and unrealistic when they lack appropriate grounding in the craft and art of management. This sentiment has been reported by others (Rubin & Dierdorff, 2007).

Changes in the purpose, curricula, and pedagogy of business and medical schools have given students greater choice in specialization. Gupta, Saunders, and Smith (2007) conclude in their investigation of 758 employment advertisements and 27 MBA programs that there is value in offering both general MBA and specialized MBA programs, and that this value is experienced by potential employers, students, and faculty. Today there are even such specialized programs as the Master of Medical Management (MMM) degree, with admission exclusively to physicians, taught at Tulane University, Carnegie Mellon, and the University of Southern California. These programs equip physicians with the knowledge, skills, and conceptual roadmaps for delivering financial management, quality management, human resources management, and strategic management, and provide a "practice field" for physician-managers.

Commonalities in Medical and Business Education

Given these challenges and opportunities, joint MD/MBA programs play a prominent role in the management education of physicians. The convergence of business and medical education has shown clear commonalities: skills in problem-solving and decision-making are emphasized in business schools by using the case method (Hawes, 2005), and problem-based learning is taught in medical schools (Massa, 2008). Studies of physicians with MBA degrees find that business education represents an effective complement to medical training. In a recent study, 81% of physicians with MBA degrees believed their business degree was useful in the advancement of their careers (Selene Parekh, Bikramjit Singh, 2007).

The MD/MBA has been the focus of several investigations (Shalowitz et al., 1996; Sherrill, 2000) assessing the differences between dual degree and traditional medical students on different dimensions. The MBA for physicians has also been examined (Kuo, 1997; Wenger, 2006). The growth in MD/MBA programs has been documented (Larson et al., 2003), noting an increase from six programs in 1993 to 33 programs in 2001 (450% growth). More recently, an increase was noted from 33 programs in 2001 to 46 (39.39% growth) in 2005 (Crites, Ebert, & Schuster, 2008). As of 2008, there were 49 allopathic medical schools offering a combined MD-MBA (AAMC, 2008). Although many authors have chosen to explain the importance of management education for physicians, none have thrown light on the existing curricula offered at the universities with respect to courses taught, duration of the dual degree, geographic spread of the universities, and the average tuition for such programs. This paper acts as a guide to dual MD/MBA programs for physicians and aspiring physicians, policy makers, and healthcare organizations.

Methodology

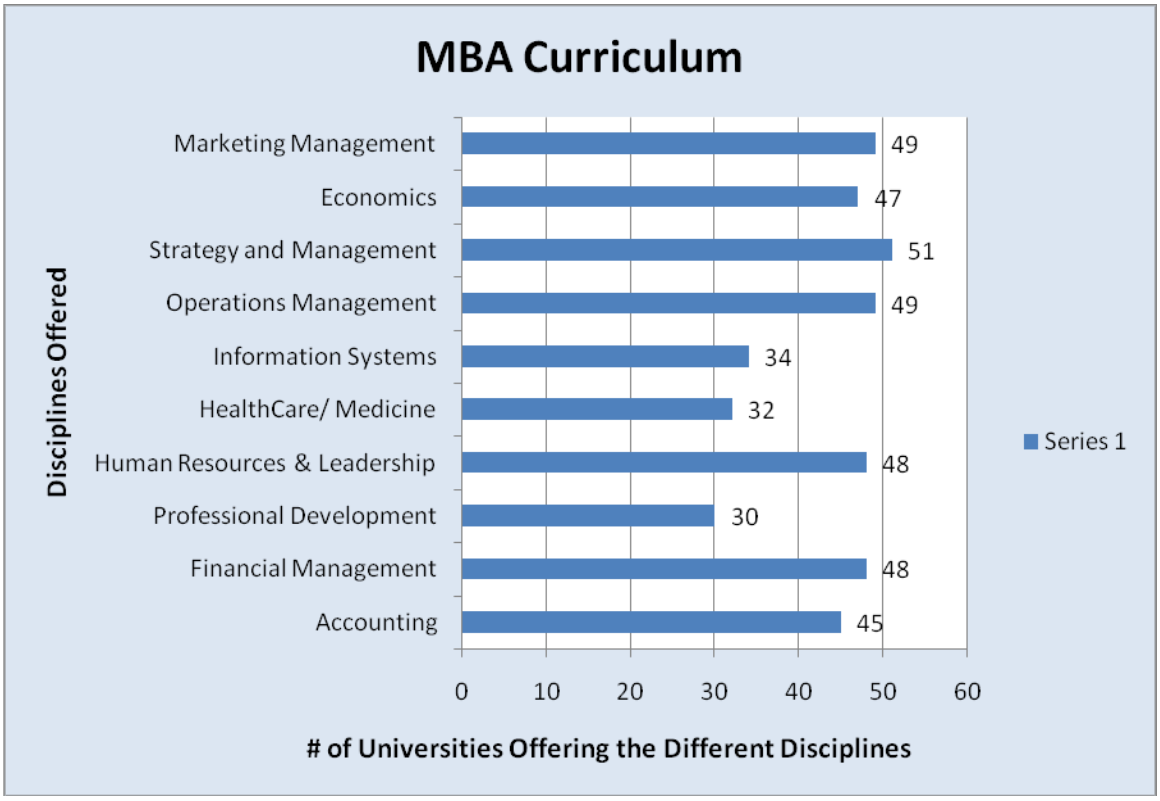
A web-based search of Joint MD/MBA programs in the United States was performed. Our sample consisted of curricula from 52 universities offering a Joint MD/MBA program between a medical school and a business school. Data were compiled with respect to number of courses taught, skills acquired during the program, duration of the course, the average tuition costs, and the geographical spread of these 52 universities. Two related databases were found: the Association of American Medical Colleges and the National Association of MD/MBA students.

Results

Several trends were observed in the Joint MD/MBA programs offered by the 52 universities.

A majority of universities focus on three areas of physician development: strategic management, financial management, and leadership skills. The top five disciplines offered were strategy and management (91.1%), marketing management (87.5%), operations management (87.5%), financial management (85.7%) and leadership (85.7%). Chart 1 illustrates the frequency of disciplines within the 52 MD/MBA programs.

Chart 1: Count of Universities Offering Different Disciplines



The disciplines least offered were management courses tailored specifically for professional development (53.6%), healthcare/medicine (57.1%) and information systems (60.7%). Of the 52 universities, only 32 offered courses in healthcare, of which 11 offered healthcare courses as electives.

Table 1 shows the courses offered in different disciplines in each of the programs.

Name of School	Courses Offered in Different Disciplines									
	Accounting	Finance	Professional Development	Human Resources & Leadership Development	Healthcare/ Medicine	Information Systems	Operations Management	Strategy and Management	Economics	Marketing Management
Baylor College of Medicine & Jones School of Management at Rice University	✓	✓	✓	✓	✓		✓	✓	✓	✓
University of Buffalo School of Medicine & UB School of Management	✓	✓	✓	✓	✓		✓	✓	✓	✓
Columbia University College of Physicians and Surgeons & Columbia Business School	✓	✓		✓			✓	✓	✓	✓
Weill Cornell Medical School & Johnson School of Management at Cornell	✓	✓	✓	✓			✓	✓	✓	✓
Dartmouth Medical School & Tuck School of Business		✓	✓	✓	✓	✓	✓	✓	✓	✓
Harvard Medical School and Harvard Business School		✓	✓	✓	✓		✓	✓		✓
Indiana University School of Medicine & IU Kelley School of Business	✓	✓			✓	✓	✓	✓	✓	✓
University of Florida College of Medicine & College of Business Administration	✓	✓	✓	✓			✓	✓	✓	✓
Jefferson Medical College - Thomas Jefferson	✓	✓		✓	✓	✓	✓	✓	✓	✓

Name of School	Courses Offered in Different Disciplines									
	Accounting	Finance	Professional Development	Human Resources & Leadership Development	Healthcare/ Medicine	Information Systems	Operations Management	Strategy and Management	Economics	Marketing Management
University& Widener School of Business Administration										
University of Kentucky College of Medicine & Gatton College of Business	✓		✓	✓			✓	✓	✓	✓
University of Michigan Medical School & Ross School of Business	✓	✓		✓			✓	✓	✓	✓
University of Minnesota Medical School & The Carlson School of Management	✓	✓		✓	✓	✓	✓	✓	✓	✓
The Ohio State University College of Medicine & The Fisher College of Business	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Saint Louis University School of Medicine & John Cook School of Business	✓		✓	✓		✓	✓	✓	✓	✓
Keck School of Medicine of the University of Southern California & The Marshall School of Business	✓	✓		✓			✓	✓	✓	✓
University of Texas Southwestern Medical Center at Dallas & University of Texas at Dallas	✓	✓	✓	✓		✓	✓	✓	✓	✓

Name of School	Courses Offered in Different Disciplines									
	Accounting	Finance	Professional Development	Human Resources & Leadership Development	Healthcare/ Medicine	Information Systems	Operations Management	Strategy and Management	Economics	Marketing Management
UMDNJ – New Jersey Medical School & Rutgers Business School	✓	✓	✓	✓			✓		✓	✓
Vanderbilt University School of Medicine & The Owen School of Management	✓	✓		✓	✓		✓	✓	✓	✓
University of California, Davis School of Medicine & Graduate School of Management	✓	✓		✓	✓		✓	✓	✓	✓
University of South Florida College of Medicine & the College of Business Administration	✓	✓		✓		✓	✓	✓	✓	✓
Brody School of Medicine at East Carolina University & ECU School of Business	✓	✓		✓	✓	✓	✓	✓		✓
Texas Tech University Health Sciences Center School of Medicine & Rawls College of Business Administration	✓				✓	✓		✓		
Mayo Medical College & Harvard Business School		✓	✓	✓	✓	✓		✓		✓
University of Illinois College of Medicine at Urbana-Champaign & College of Business							✓	✓		

Name of School	Courses Offered in Different Disciplines									
	Accounting	Finance	Professional Development	Human Resources & Leadership Development	Health care/ Medicine	Information Systems	Operations Management	Strategy and Management	Economics	Marketing Management
Administration										
Case Western Reserve University School of Medicine & Weatherhead School of Management	✓	✓		✓	✓	✓	✓	✓	✓	✓
University of Arizona College of Medicine & Eller College of Management	✓	✓	✓	✓		✓	✓	✓	✓	✓
Boston University School of Medicine & Graduate School of Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UMDNJ – Robert Wood Johnson Medical School & Rutgers Business School	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
University of California, Irvine, College of Health Sciences School of Medicine & The Paul Merage School of Business	✓	✓		✓	✓	✓	✓	✓	✓	✓
Tufts University School of Medicine & Northeastern University's Graduate College of Business Administration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pritzker School of Medicine & University of Chicago Graduate	✓	✓	✓	✓			✓	✓	✓	✓

Name of School	Courses Offered in Different Disciplines									
	Accounting	Finance	Professional Development	Human Resources & Leadership Development	Health care/ Medicine	Information Systems	Operations Management	Strategy and Management	Economics	Marketing Management
School of Business										
University of Connecticut School of Medicine & Graduate Program in Business Administration	✓	✓		✓	✓	✓	✓	✓	✓	✓
David Geffen School of Medicine at UCLA & Anderson School of Management	✓	✓	✓	✓		✓	✓	✓	✓	✓
University of Rochester School of Medicine and Dentistry & Simon Graduate School of Business	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
University of Pennsylvania School of Medicine & Wharton School of Business	✓	✓	✓	✓	✓		✓	✓	✓	✓
University of Colorado Denver School of Medicine & UC Denver Business School	✓	✓		✓	✓	✓	✓	✓	✓	✓
Medical University of South Carolina College of Medicine & The Citadel School of Business	✓	✓		✓		✓	✓	✓	✓	✓
Boonshoft School of Medicine at Wright State University & Raj Soin College of	✓	✓	✓		✓	✓	✓	✓	✓	✓

Name of School	Courses Offered in Different Disciplines									
	Accounting	Finance	Professional Development	Human Resources & Leadership Development	Healthcare/ Medicine	Information Systems	Operations Management	Strategy and Management	Economics	Marketing Management
Business										
University of Arkansas College of Medicine & UALR College of Business	✓	✓		✓		✓	✓	✓	✓	✓
Georgetown University School of Medicine & McDonough School of Business	✓	✓	✓	✓		✓	✓	✓	✓	✓
University of Cincinnati College of Medicine & College of Business Administration								✓	✓	
Northwestern University, The Feinberg School of Medicine & Kellogg School of Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wake Forest University School of Medicine & School of Business	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Duke University School of Medicine & The Fuqua School of Business	✓	✓	✓	✓	✓	✓	✓		✓	✓
Emory University School of Medicine & Goizueta School of Business		✓		✓			✓	✓	✓	✓
Drexel University College of Medicine & LeBow College of	✓	✓		✓		✓	✓	✓	✓	✓

Name of School	Courses Offered in Different Disciplines									
	Accounting	Finance	Professional Development	Human Resources & Leadership Development	Healthcare/ Medicine	Information Systems	Operations Management	Strategy and Management	Economics	Marketing Management
Business										
Mount Sinai School of Medicine & Baruch College of the City University of NY	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
University of Illinois College of Medicine & Liautaud Graduate School of Business		✓		✓	✓	✓	✓		✓	✓
Texas A&M and Mays Business School	✓	✓	✓	✓		✓	✓	✓		✓
Philadelphia College of Osteopathic Medicine & St. Joseph's School of Management	✓	✓	✓	✓	✓	✓		✓	✓	✓
Temple University School of Medicine & Fox School of Business	✓	✓		✓	✓	✓	✓	✓	✓	✓
Tulane University School of Medicine & Freeman School of Business	✓	✓	✓	✓			✓	✓	✓	✓

Table 2 lists the structure of the program, number of courses, program duration, and average tuition charged. Typically a student needs to complete four years of Medical school and 1-2 years in a business school to complete the joint MD/MBA degree. The duration of the programs ranged from five to six years. Two programs reported that the joint degree can be accomplished in four years, 46 programs reported it can be accomplished in five years, one program reported it can be accomplished in six years, and several

programs were flexible with respect to completion of the program within 5-6 years, depending on the student's preference. The average number of courses was 18, with a range between 12 and 42 courses. The average number of semester hours needed to complete the MBA part of the program was 46, with a range of 19 to 65 hours. The tuition reported here is only for the MBA portion of the program. Average cost of the MBA program is $35,810. The range was between $ 14,011 and $ 120,000.

Name of School	Structure of the Program/ Number of Courses	Duration	Tuition
Baylor College of Medicine & Jones School of Management at Rice University	**4 years of Medical School + 1 year of Management – 19 Core Courses and 3 Electives**	**5 years**	**Medical School fees + $33,500 for the Management School**
University of Buffalo School of Medicine & UB School of Management	**12 Core Courses + 4 Electives + 1 Internship**	**5 years**	**Medical School Fees + $23,558 for the Management School**
Columbia University College of Physicians and Surgeons & Columbia Business School	**4 years Medical School + 13 Core Courses + 3 terms Full-time at the Business School**	**5 years**	
Weill Cornell Medical School & Johnson School of Management at Cornell	**4 years of Medical School + 1 year of Management School (10 Core Courses + a choice from 80 Electives + Internship/ Management Practicum**	**12 months post completion**	**$67,700 for the 12 month program**
Dartmouth Medical School & Tuck School of Business	**4 years of Medical School + 12 Core Management Courses in the 5th year + Electives in the 6th year (optional)**	**5 years / 6 years**	
Harvard Medical School and Harvard Business School	**25+ Electives at HMS and MBS**	**5 years**	**Tuition and fees to HMS or MBS dependant on registration**
Indiana University School of Medicine & IU Kelley School of Business	**13 Core Courses + 2 Electives**	**5 years**	**Medical School Tuition, Fees + $20,250**
University of Florida			

Name of School	Structure of the Program/ Number of Courses	Duration	Tuition
College of Medicine & College of Business Administration	**14 Core Courses + Electives**	**5 years**	**Medical School Fees + $26,500-$28,000**
Jefferson Medical College - Thomas Jefferson University& Widener School of Business Administration	**18 Core Courses + 12 Electives + 12 Foundation Credits**	**5 years**	**$17,220**
University of Kentucky College of Medicine & Gatton College of Business	**6 Pre-requisites + 7 Core Courses + 3 Projects + 2 Action Learning Labs + 2 Professional Workshops**	**5 years**	
University of Michigan Medical School & Ross School of Business	**12 Core Courses + 5 Electives**	**5 years**	
University of Minnesota Medical School & The Carlson School of Management	**10 Core Courses + 8 Electives**	**5 years**	**Medical School Fees + $20,625**
The Ohio State University College of Medicine & The Fisher College of Business	**10 Core Courses + 2 Electives**	**5 years**	**Medical School Fees + $72,500**
Saint Louis University School of Medicine & John Cook School of Business	**16 Core Courses + 4 Electives**	**5 years**	**$535 per credit hour = $25,680**
Keck School of Medicine of the University of Southern California & The Marshall School of Business	**12 Core Courses + 4 Electives**	**5.5 years**	**Medical School Fees + $39,750**
University of Texas Southwestern Medical Center at Dallas & University of	**14 Core Courses + 2 Electives**	**5 years**	**Medical School Fees + $23,393**

Name of School	Structure of the Program/ Number of Courses	Duration	Tuition
Texas at Dallas			
UMDNJ – New Jersey Medical School & Rutgers Business School	**7 Core Courses + 5 Electives**	**5 years**	**Medical School Fees + $48,822**
Vanderbilt University School of Medicine & The Owen School of Management	**11 Core Courses**	**5 years**	**Medical School Fees + $37,834**
University of California, Davis School of Medicine & Graduate School of Management	**24 Courses – 7 Required + 4 Breadth Courses + 13 Electives**	**5 years**	**Medical School Fees + $24,069**
University of South Florida College of Medicine & the College of Business Administration	**10 Core Courses + 4 Electives + 6 Electives**	**5 years**	
Brody School of Medicine at East Carolina University & ECU School of Business	**14 Required Courses + Electives (42 Semester Hours)**	**5 years**	**Medical School Fees + $14,800**
Texas Tech University Health Sciences Center School of Medicine & Rawls College of Business Administration	**4 years of Medical School + 51 hour MBA-Health Organization Management (includes summers before and after 1st year curriculum) MBA includes Core Curriculum + 8 Health Organization Management Specific Courses**	**4 years**	
Mayo Medical College & Harvard Business School	**11 Core Courses + Electives**	**5 years**	**$34,998**
University of Illinois College of Medicine at Urbana-Champaign & College of Business Administration	**15 Courses**	**5/6 years**	**Medical School Fees = $49,582**

Name of School	Structure of the Program/ Number of Courses	Duration	Tuition
Case Western Reserve University School of Medicine & Weatherhead School of Management	**10 Core Courses + 4 Electives**	**5 years**	**$1,339 per credit hour (42 credit hours) = $56,238**
University of Arizona College of Medicine & Eller College of Management	**43 Credits (Includes Independent Study on health related issue or healthcare entrepreneurship project)**	**5 years**	**$325.84 per credit = $14,011**
Boston University School of Medicine & Graduate School of Management	**50 Credits**	**5 years**	**$34,930**
UMDNJ – Robert Wood Johnson Medical School & Rutgers Business School	**60 Credits**	**5 years**	**$254 per credit hour = $15,420 for the MBA**
University of California, Irvine, College of Health Sciences School of Medicine & The Paul Merage School of Business	**4 years of Medical School + 12 Core Courses + 10 Electives**	**5/6 years**	
Tufts University School of Medicine & Northeastern University's Graduate College of Business Administration	**65 Credits**	**4 years**	**$292 per credit hour = $18,980**
Pritzker School of Medicine & University of Chicago Graduate School of Business	**9 Core Courses + 11 Electives**	**5/6 years**	**$120,000**
University of Connecticut School of Medicine & Graduate Program in Business Administration	**42 Credits**	**5 years**	**$41,000**
David Geffen School of Medicine at UCLA			

Name of School	Structure of the Program/ Number of Courses	Duration	Tuition
& Anderson School of Management	**15 Courses – Three components – Institutional finance, Leadership and Management**	**5 years**	**$30,000 per Academic year**
University of Rochester School of Medicine and Dentistry & Simon Graduate School of Business	**9 Core Courses + 11 Electives**	**5 years**	**$56,726**
University of Pennsylvania School of Medicine & Wharton School of Business	**19 Credit Units**	**5 years**	**$44,795**
University of Colorado Denver School of Medicine & UC Denver Business School	**30 Credit Hours / 25 months**	**6 years**	**$45,242**
Medical University of South Carolina College of Medicine & The Citadel School of Business	**14 Core Courses + 2 Electives**	**5 years**	**$383 per credit hour = $18,384**
Boonshoft School of Medicine at Wright State University & Raj Soin College of Business		**5 years**	**$28,288 per year for MBA**
University of Arkansas College of Medicine & UALR College of Business	**51 Credit Hours**	**5/6 years**	**$568 per credit hour = $28,968**
Georgetown University School of Medicine & McDonough School of Business	**17 Core Courses + 16 Electives**	**5 years**	**$35,568**
University of Cincinnati College of Medicine & College of Business Administration	**10 Courses - 4 Core + 6 Electives**	**5 years**	

Name of School	Structure of the Program/ Number of Courses	Duration	Tuition
Northwestern University, The Feinberg School of Medicine & Kellogg School of Management	**12 Quarters of Medical School (4 yrs) + 18 Managerial Courses (8Core Courses + 10 Healthcare Courses) with a major in Health Industry Management across 4 quarters**	**5 years**	
Wake Forest University School of Medicine & School of Business	**16 Management Courses + 4 years of Medical School +Electives**	**5 years**	**The tuition rate of the school with the higher rate**
Duke University School of Medicine & The Fuqua School of Business	**10 Core Courses + Electives (Health Management or other specialization)**	**5 years**	**$44,100 per academic year**
Emory University School of Medicine & *Goizueta* School of Business	**9 Core Courses + 11 Electives**	**5 years**	**$7,500 per semester = $22,500**
Drexel University College of Medicine & LeBow College of Business	**15 Core Courses + 5 Electives in Healthcare Systems**	**5 years**	**$2,625 per class = $52,500**
Mount Sinai School of Medicine & Baruch College of the City University of NY	**57 Credit Hours**	**5 years**	**$18,513 per academic year1**
University of Illinois College of Medicine & Liautaud Graduate School of Business	**48 Credits**	**5 years**	**$649 per credit hour = $31,152**
Texas A&M and Mays Business School	**49 Course Hours**	**5 years**	
Philadelphia College of Osteopathic			

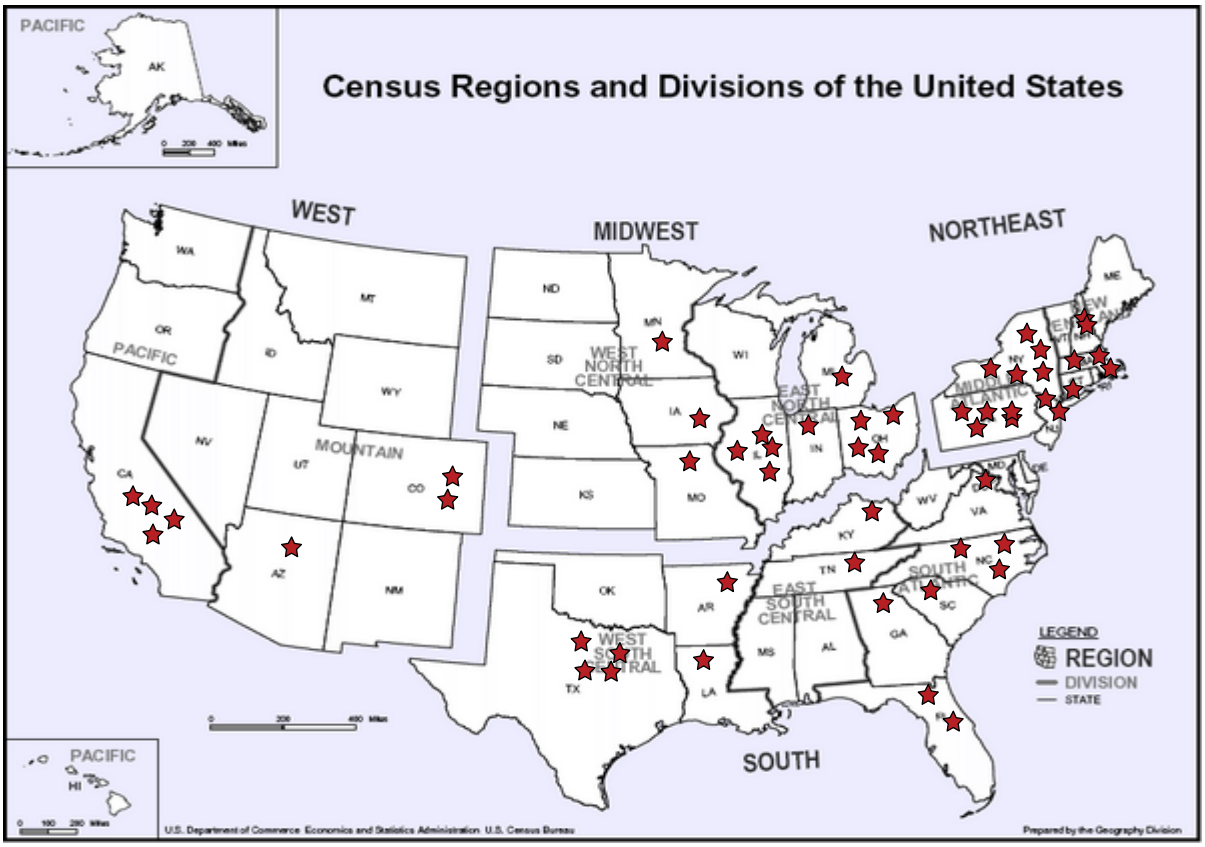
Name of School	Structure of the Program/ Number of Courses	Duration	Tuition
Medicine & St. Joseph's School of Management	**36-42 Credits**	**5 years**	
Temple University School of Medicine & Fox School of Business	**54 Credits**		**$630 per credit hour = $34,020**
Tulane University School of Medicine & Freeman School of Business	**45 – 48 Credits – Core + Electives**	**5 years**	**$1,175 per credit hour = $52,875 - $56,400**

Location

Figure 1 shows the geographic distribution across the U.S. Of the 52 programs, 33.9% are located in the northeast region, 28.6% are located in the southern region, 23.21% are located in the Midwest region, and 12.5% are located in the west.

Discussion

The focus of this research has been to assess the distinctiveness of existing MD/MBA programs and identify emerging disciplines in the business curriculum for physician development. The need for business education for physicians has been discussed elsewhere (Reinertsen, 1998; Bodenheimer & Casalino, 1999; Lighter, 2000; Wenger, 2006). Levin argues that physicians with business training make better managerial decisions than do those without such training (2000). Falcone and Satiani recognize that physicians who aspire to be hospital CEOs can benefit from both medical and business education and note an increase in the number of hospital CEOs who are physicians (2008). They also assert that MD/MBA graduates may be well positioned to "jumpstart" their administrative careers in healthcare. Parekh and Singh (2007) note that physicians who are dually trained in medicine and business will be better positioned to overcome the current challenges of the healthcare delivery system and to lead transformational change. A study conducted by Ruth Collins-Nakai, "Leadership in Medicine," recognizes the need for physicians to be trained in the requisite skills that they do not acquire during their medical training (2006).



Future revisions of this study will include additional specialized programs offered at U.S. and Canadian universities, including DO/MBA programs, as well MD/Master of Health Administration and MD/Master of Public Health.

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TAKING STOCK OF THE PCAOB AND INVESTOR CONFIDENCE

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ABSTRACT

The many scandals and irregularities that afflicted corporations and accounting firms over the past ten years risked loss of investor confidence and invited increased regulation. The PCAOB was created to oversee public accounting firms so that investors have greater confidence in audited financial statements. Given that PCAOB has now been around for six years, we review the scope and results of its operations and gauge public perception of PCAOB, increased regulation and resulting impact on investor confidence. Our survey of 138 participants shows that the benefits of PCAOB are not apparent. Investors who consider themselves well informed had never heard of PCAOB, let alone what it does. 61 percent of the respondents in our survey participate in 401K or other stock market investment plans. However, only 38 percent view themselves as belonging to the investor class. A majority of respondents were skeptical of information companies furnish, financial statements audited, and of government's ability to be an effective watchdog. This is not surprising given that recent banking crisis occurred on SEC's (by extension PCAOB) watch.

Key words: PCAOB, Oversight, Investor Confidence, Financial Crisis

Introduction

The many scandals and irregularities afflicting corporations, accounting firms and mutual funds over the past ten years have risked loss of investor confidence and invited increased regulation. One consequence was the creation of an oversight board. Much has been written on the purpose of the Public Company Accounting Oversight Board (PCAOB), how it came to be and what professionals think of it. Given the benefit of several years of the PCAOB existence, we seek to review the evolution of PCOAB and the scope and results of its operations. What have been its key achievements since it was established in 2003?

Some have argued that the PCAOB's audit standard-setting and inspection models as they currently exist are inefficient and dysfunctional (Glover et al., 2009). Glover, Prawitt and Taylor (2009) assert that "the Boards ability to achieve its mission is limited by its early choices . . . its incentives, organizational

composition, and structure" (p. 221). We extend this line of research by providing greater context, additional insights and understanding into the work PCAOB, its track record to date, and impact on public perception.

The accounting profession contributed to the crisis of confidence in the U.S capital markets and in the profession itself (Glover et al., 2009). The PCAOB's primary mission is to improve investor confidence in financial reporting (Kranacher, 2008). Certain industry practices are believed to undermine investor confidence including activities of hedge funds, private equity, and high-frequency traders. Against the background of recent financial crisis, in this paper we also examine the impact of PCAOB on public perception and (investor) confidence.

The paper proceeds as follows. The next section describes the creation of the PCAOB and its organizational structure. The third section provides a review of the PCAOB's oversight activities since inception. The fourth section presents the results of a survey conducted to gauge impact on investor confidence. The final section discusses the study's limitations, conclusions, and implication.

Creation of the PCAOB

In response to the massive corporate failures of Enron, Tyco, WorldCom and others, the U.S Congress passed the Sarbanes-Oxley Act of 2002 (SOX) (Sarbanes-Oxley, 2002). The law was arguably passed to address the lack of confidence of investors and creditors in audited financial statements. The lack of confidence apparently stemmed from a perceived or real lack of auditor independence and/or lack of internal controls in audited companies. SOX created a new entity, the PCAOB, and charged it with inspecting and disciplining public accounting firms. As the PCAOB explains "it was created to protect investors and the public interest by promoting informative, fair, and independent audit reports"[1]. It replaced the system of self-regulation through the AICPA, a system tarnished with well-chronicled accounting failures that contributed to the crisis in investor confidence. The shift in authority from the AICPA's Auditing Standards Board to the PCAOB was not received well by the profession (Hill et al., 2007). Has the PCAOB strengthened and restored public confidence in the auditing profession? Glover et al. (2009) suggest that it has. While providing no basis for the assertion, they state that "SOX and the PCAOB have brought benefits to the public, the capital markets, and the profession" [1, p. 221]. In section 4, we examine the question of public perception and investor confidence.

The Board

The PCAOB is an independent, private-sector, nonprofit corporation established to provide assurance that interests of investors were being served by generation of audit reports that are deemed as informative, fair, and independent. It is independent in that Congress does not directly control the purse-strings but it is controlled by the SEC, a federal agency whose budget is set by Congress. The law requires [3, Section 107] that the SEC maintain oversight and enforcement authority over the board including, appointing board members, approving standards promulgated, approving the rules under which the board operates, reviewing registration refusals and disciplinary action taken by the board, and

relieving the board of any of its responsibilities in as deemed fit. The SEC also acts on appeals where accounting firms seek a review of a decision made by the board. As such, the PCAOB really is a quasigovernmental body. Although initial funding for the board was provided by the government, ongoing funding comes from the private sector in the form of "annual accounting support fees" levied on corporate issuers in proportion to their "equity market capitalization" [3, Section 109].

The Organizational Structure

The Board consists of five members who are appointed by the SEC. Some have argued that this board is largely composed of highly paid, political appointees who lack expertise or experience in auditing, accounting, and technical standard setting (Glover et al., 2009). The lack of expertise extends beyond the Board itself, in that "most holders of the fourteen major staff positions listed on the PCAOB 's website as of August 2005 lacked meaningful experience in auditing financial statements" [7, p. 117]. The law stipulates that no more than two Board members can be CPAs (Sarbanes-Oxley, 2002). As of July 2009, 41.5% (16/41) of the top management positions were held by lawyers, 33.5% by accountants, and 24 percent by others [1]. Table 1 on the next page lists the various offices that comprise the top management of the PCAOB.

PCAOB OVERSIGHT & ACTIVITIES

SOX Section 102 prohibits accounting firms that are not registered with the PCAOB from preparing or issuing audit reports on U.S. public companies and from participating in such audits. All registered firms are required to file an annual *report* and pay an annual fee. The total number of firms registering with the PCAOB has grown steadily from 732 in 2003 to 1,423 (2004) to 1,591 (2005) to 1,738 (2006) to 1,828 (2007). The number of registered firms has grown to 2,080 *(including* 16 pending withdrawals) *and* 54 applications pending approval as of July 9, 2009.

Table 1. Organizational Composition of the PCOAB

Office	Number of Top Personnel
The Board	5
Chief of Staff	1
Board Staff	5
Office of the Secretary and General Counsel	2
Division of Enforcement and Investigations	4
Division of Registration and Inspections	6
Office of International Affairs	3
Office of Chief Auditor	3
Office of Research and Analysis	3
Office of Internal Oversight and Performance Assurance	2
Office of Administration	4
Office of Communications	3
TOTAL	41

Table 2 presents a cross tabulation of the number of registered U.S and non U.S. firms by the number of audit reports issued. Although 58% of the registered firms had not issued an audit report, these firms deemed it necessary to register and bear the cost of registration. These firms apparently perceived some benefit to being seen as a PCAOB registrant. Only 27% of the registered firms issuing audit reports are non U.S. firms. A vast majority (92%) of the registered firms issuing 100 or more audit reports a year are U.S. firms.

Table 2. Number of Registered firms issuing Audit Reports as of 12/31/2007

	Number of Audit Reports							Total
	0	1-5	6-10	11-25	26-50	51-100	>100	
U.S firms	424	338	71	88	49	15	11	985
Non U.S firms	632	142	31	23	8	6	1	843
Total	1056	480	102	100	57	21	12	1,828

The fees and annual budgets provide another measure of the PCAOB's scope of operations and how they have grown over the years. Table 3 on the next page shows seven years of actual (or budgeted) revenues and expenses. For fiscal year 2009, the accounting support fees are expected to be approximately $152 million while the operating expenses are budgeted to be approximately $158 million (pending SEC approval).

Table 3
PCAOB Financial Highlights

Statement of Activities (*amounts in '000*)							
	2009[§]	2008[§,‡]	2007	2006	2005	2004	2003
Revenues:							
Accounting support fee	$151,757	$134,511	$122,286	$109,279	$136,005	$101,093	$ 52,852
Registration			39	49	66	304	2,039
Interest & other	217	4,213	3,964	3,955	2,694	666	333
Penalty			1,000				
Total Revenues	$151,974	$138,724	$127,289	$113,283	$138,765	$102,063	$ 55,224
Operating Expenses	$157,608	$144,607	$130,613	$126,830	$108,048	$ 70,951	$ 29,424

Financial Position (*amounts in '000*)							
	2009	2008[‡]	2007	2006	2005	2004	2003
Total Assets	_	_	$ 88,979	$ 92,104	$104,427	$ 67,347	$ 34,244
Total Liabilities	_	_	$ 18,222	$ 18,025	$ 16,800	$ 10,436	$ 8,446

[§] Amounts based on cash-basis budget.
[‡] 2008 Annual Report not available.

Data obtained from the PCAOB website [1].

The revenues and expenses represent a tremendous growth over the past years. Since 2003, revenues have increased by approximately $100 million, representing a growth rate of 187%, while operating expenses increased by approximately $128 million, representing a 436% increase. The operating budgets and fees would understandably be lower in the first years of an agency's operations than subsequent years. The PCAOB is now running a deficit, which may be of concern. There is delay in reporting financial position figures. For example, the Board's financial position (assets and liabilities) for fiscal year 2008 have yet to be been made public.

Standard setting

Accounting firms with global presence have to comply with multiple set of standards, from the PCAOB, Auditing Standards Board (ASB), Government Accounting Office (GAO), and International Auditing and Assurance Standards Board (IAASB) (Glover et al., 2009). This system is inefficient and problematic for businesses and educators alike. PCAOB insists on maintaining a separate set of standards claiming a desire for independence. However, the Board embodies a non-expert standard-setting model that lacks expertise and experience in coming up with high quality standards suitable for an increasingly technical and complex business environment.

In its first six years of existence, the PCAOB issued six auditing standards (AS No.1 to AS No. 6). Five remain in effect as AS No. 2 was superseded in 2007 by AS No. 5. Three are minor standards that address relatively narrow issues (AS No.1, AS No. 4, and AS No. 6). Only two significant, in-force auditing standards have been issued. These are AS No. 3 on Audit Documentation and AS No. 5 on Audit of Internal Control over Financial Reporting. The board has also proposed a set of "risk standards," all borrow significantly from preceding standards.

There seems to be a lack of initiative, innovation, and urgency to improving quality auditing standards on the part of PCAOB. As Glover et al. point out "PCAOB's actions have effectively forfeited to the IAASB…the U.S. role as the world's audit standards leader" [1, p. 224].

Besides establishing ethics rules and standards for audit practice, the PCAOB uses three separate means of enforcement to ensure compliance: inspections, investigations and disciplinary actions. It has the power to: (1) perform *inspections* of registered public accounting firms, (2) conduct *investigations*, and (3) hold *disciplinary hearings* and *impose sanctions.* Seven years into the new regime, the question of whether the PCAOB has led to an improvement in the quality of audits is not yet settled. Are the goals of the *inspection* process: driving improvements in audit processes and firms' quality control systems being met? What has the PCAOB found in its investigation of audit firms, big and small?

Inspections

The law [3, section 104] requires all public accounting firms to be inspected, once each year for larger firms and at least once every three years for smaller firms. Large firms are those that audit more than 100 issuers annually, while small firms are those that audit fewer than 100 issuers annually. Inspections

are usually considered routine and do not indicate the presence of a problem. However, if irregularities are discovered during the inspection process, then the next course of action, an investigation, ensues.

The inspection process involves not only reviewing specific audits but also assessing the quality control environment of the registered firms. It covers a broad range of activities from the evaluation of an audit firm's tone-at-the-top, partner evaluation and compensation, practices for client acceptance and retention, consultation on non-audit matters, training, policies, communication, compliance with professional codes of conduct, and conformance with technical standards, to proper application of audit procedures and documentation as well as assessing the sufficiency and appropriateness of the audit evidence collected. Following an *inspection*, a *report* is issued for each registered firm. Audit deficiencies that exceed a certain threshold are summarized in the public portion of the board's *report*.

The PCAOB's inspection program began in 2003 with the Big-4 accounting firms, each of whom audit between approximately 10 and 18 percent of the total number of U.S.-based public companies [2]. PCAOB has issued 928 inspection reports so far. Table 4 below shows the number of inspection reports issued and the number of reports that were expanded to include quality control criticisms [2].

Table 4. Inspection Reports by PCAOB

Year	Number of Inspection Reports	Number of Reports disclosing quality control criticisms
2004	4	0
2005	174	19
2006	204	30
2007	170	10
2008	259	4
2009*	117	0
Total	928	63

*as of July 9, 2009.

Portions of an inspection report involve criticisms of, or defects in, a registered firm's quality control systems but are not made public unless (1) the Board determines that a firm's efforts to address the criticisms or defects were not satisfactory, or (2) the firm makes no representation to substantiate its efforts addressing the weaknesses. 6.8% (63/928) of the inspection reports made public were expanded to disclose quality control criticisms.

Separate summary data for large and small registered firms follows next. Table 5 shows four years of data for large firms with respect to the number of audits inspected and the average size of entities that were audited.

Table 5. Annual Inspection of Large Registered Firms

Year	Number of Issuer* Audits Inspected	Average Market Capitalization of Issuer Audits Inspected
2004	521	$1.9 billion
2005	348	$3.6 billion
2006	351	$4.9 billion
2007	442	$4.2 billion

* The term "issuer" includes public and investment companies.

Small firm inspections began in 2004. Of the domestic registered firms, roughly 65 percent were subject to triennial inspection. Table 6 presents data for small firms subject to inspection once every three years (triennial). During the three year period (2004-2006), the PCAOB conducted 497 inspections and issued 439 inspection reports on the first inspection of triennial firms to date [3]. Information to reconcile the difference between the number of inspections and number of inspection reports was not available.

Table 6. Triennial Inspection of Small Registered Firms

Year	Number of Inspections
2004	91
2005	257
2006	149
Total	497

For 248 (57%) of those inspected, both audit performance deficiencies AND concerns about firm's quality control system were identified. Concern over potential defects in the firm's quality control system, but no audit performance deficiencies were identified for 67 (15%) of those inspected. Only 124 reports (or 28%) were deemed clean in terms of showing no audit performance deficiencies or concerns about firm's quality control system.

In its *Report* on the *PCAOB's* 2004, 2005, 2006, and 2007 *Inspections of Domestic Annually Inspected Firms* [2], the PCAOB noted insufficient exercise of professional skepticism as a contributing factor to a continuing trend of audit deficiencies in critical areas. Common deficiencies fell into one of three categories: (1) departures from GAAP, (2) auditing deficiencies, (3) deficiencies in certain quality control functional areas.

At first glance, inspection process might seem to be working. For example, as seen in Table 4, the number of inspections reports as well as the number of reports disclosing quality control criticisms

initially increases, but dropped dramatically in the last two years. Number of inspection reports does not necessarily capture effectiveness. In our review of inspection reports, we found these reports follow a check list approach and often lacks clarity. Although publicly available, the public is no wiser as to significant inspection issues and matters of honest differences of opinion. In a similar vein, Palmrose notes that "there appears to be less publicly available information for gaining insight into the practice of auditing under government regulation than under self-regulation" (Palmrose, 2006). There is doubt as to the value of PCAOB's inspection reports for signaling audit quality (Lennox and Pittman, 2008).

There has been some criticism of PCAOB inspection feedback. Glover et al (2009) contend that the inspection feedback is exceedingly slow and ineffective. For example, "a report released in late 2005 relating to a 2003 audit was too late to affect the firm's 2004 audits… or even 2005 audits" (Glover et al., 2009). As such, some of the same deficiencies that were identified in the first years were repeated in the inspection reports released in later years. This argument, however, may be unduly harsh as it ignores the significant improvement made in timeliness. This is apparent from Table 7 below which shows the dates when inspection reports were issued for the largest five accounting firms.

Table 7

Inspection Report Issue Dates for the Largest 5 Registered Firms

Fiscal Year Inspected	Inspection Report Issue Dates
2003*	August 2004
2004	September 2005 to January 2006
2005	November 2006 to January 2007
2006	May 2007 to October2007
2007	April 2008 to August 2008
2008	March 2009 to July 2009

* includes only the Big-4 firms; only limited inspections.

Investigations

Investigations focus on perceived problem areas. These may involve subpoenaing witnesses or documents. Disciplinary action only follows if an investigation leads the PCAOB to conclude that a violation has occurred and the registered firm has not corrected the violation, or have not undertaken a plan to correct the violation. Data is not available on the number of investigations undertaken each year and what percent result in subsequent disciplinary action.

Disciplinary Action

Disciplinary action begins with a hearing, which is followed by possible imposition of sanctions. Sanctions can include suspension or revocation of the registered firm's registration and/or substantial fines.

Over a five year period, the board took disciplinary action in 22 instances as seen in Table 8. Various sanctions were imposed, individually or in combination, depending on the severity of the infringement. These range from censure of practitioners and/or firm, suspension of practitioners for a period of time, barring practitioners from being an associate of a registered public accounting firm, to revocation of firm registration. 11 of the 22 disciplinary proceedings resulted in revocation of registration. Ten individuals were barred from being associated persons of a registered public accounting firm. One of the Big-4 firms was censured along with a penalty in the amount of $1,000,000.

Table 8. Disciplinary Proceedings

Year	Number of disciplinary actions
2005	4
2006	3
2007	9
2008	4
2009	2
Total	22

Given the paucity of disciplinary action taken, one may conclude that the board is not effective because enforcement is lacking or that the violations do not result in serious consequences. In other words, firms are aware of PCAOB inspection process but perhaps do not worry about penalties that could be levied. Alternatively, it is possible that the number of disciplinary actions has decreased because the PCAOB is effective and firms do appreciate that violations will result in disciplinary actions. There is doubt of the PCAOB's ability to achieve its mission even though the PCAOB may be limited by its early choices, incentives, and its organizational structure (Glover et al., 2009). We next explore whether there are benefits from PCAOB's activities in terms of investor confidence.

INVESTOR CONFIDENCE

The PCAOB was arguably created in response to an increasing lack of confidence on the part of investors. Regulation is meant to provide transparency by reducing information asymmetry for investors. However, questioning the value of the PCAOB, a retired audit partner argues that "the cost to business of this de facto governmental agency yields little to no benefit to investors," and that the PCAOB field audits have gone much too far with "the staff seeming to have a 'got you' mentality on informed judgment areas to justify its existence" (Hill et al., 2007). In spite of such assessment from some quarters, has investor confidence been restored as a result of PCAOB's creation? Investor confidence arguably is influenced by perceived auditor independence or the perception of internal controls in audited companies since the investing public has no ability to assess the real state of these matters first hand. Would the presence of PCAOB influence investor confidence in audit reports?

There are a wide variety of investors, from institutional investors to individual investors. Some are more informed than others. We define a well informed investor is someone who stays current with business news, pays attention to news about the state of the economy, earning trends, business related regulation and so on. There are some who technically are investors but do not view themselves as such. In a survey 58% reported owning a 401K but did not see themselves as belonging to the investor class (Zogby, 2009). Zogby (2009) calls them the "invisible stockholder next door".

We sought to obtain opinions of individual investors regarding their awareness of PCAOB and what it does, their views on increased regulation, auditing standards, and their confidence in audited financial statements and the information furnished by companies. We also solicited their opinion on expanding PCAOB's jurisdiction to include regulating the currently un-regulated segment of financial sector: private funds including hedge funds and private equity. Both are pools of money used to invest in different opportunities, not unlike mutual funds. The difference is mainly in the types of investors and the types of companies the funds invest in.

A Pew Research survey conducted in October 2008 finds that the public is divided about the efficacy of government regulation in general: only 46% of the respondents said that weak governmental regulation of financial institutions contributed a lot to the recent problems; 50% believed regulation is necessary to protect the public interest [4]. Given this ambivalence, would expansion of PCAOB jurisdiction or creation of yet another agency to monitor financial sector (particularly hedge funds and private equity) help restore public confidence?

Dubious industry practices and investor confidence

Private funds have been a hot topic of debate for some time. Some have called these products "rent-seeking frauds on a willingly gullible public" and questioned the egregious fee structures (BVWRITERS, 2009). Others look at this as an issue of consenting adults agreeing to be taken advantage of; not a regulator's business to prevent people knowingly parting with their money (BVWRITERS, 2009).

However, a case can be made that there is public interest at stake and closer scrutiny is called for. In a testimony before the Subcommittee on Securities, Insurance, and Investment of the U.S. Senate Committee on Banking, Housing, and Urban Affairs, SEC's Andrew Donohue estimated that advisers to hedge funds have almost $1.4 trillion under management and account for 18-22 percent of all trading on the New York Stock Exchange (Donohue, 2009). This underscores the impact of hedge funds on the trading markets. Private equity funds raised $256.9 billion in 2008 ($325.2 billion in 2007) and venture capital funds managed $257.1 billion of assets in 2008 (Donohue, 2009).

Hedge funds and private equity have played an increasingly significant role in the capital markets both as a source of capital and the investment vehicle of choice for many institutional investors, but do they pose systemic risk and operate to the disadvantage of public interest? Many hedge funds helped inflate the bubble by making a market for all the "crafty products" spawned by the banks. There is another cost to the taxpayers. Private equity firms are not "true" private equity as they largely engage in private debt financing (BVWRITERS, 2009). Since interest expense is tax deductable, private equity benefits immensely from tax free debt and taxpayers end up subsidizing the investors. Hedge funds also could cause problem for banks (and society at large) if their leverage boomerangs. The European Union is moving to include hedge funds and private equity investments in its new system of financial regulations. The U.S. is also considering regulating this sector.

Another area that has come to light which could undermine investor confidence is high-frequency trading. It involves powerful computers making it possible for high-frequency traders to send out millions of orders at lightning speed and reap billions along the way. A research firm estimated that "high-frequency traders generated about $21 billion in profits last year" (Duhigg, 2009). Besides huge technological advantages, these high-speed traders benefit from loopholes in market rules. Recent headlines report that "a loophole in regulations allows marketplaces like Nasdaq to show traders some orders ahead of everyone else in exchange for a fee" (Duhigg, 2009).

It is commonly understood that markets ensure transparency, a level playing field and fair play. This requires that, at a minimum, markets show orders to everyone simultaneously, not give an early glance to a select few at how others are trading. According to the head of U.S. equity trading at a mutual fund, "we're moving toward a two-tiered marketplace of the high-frequency arbitrage guys, and everyone else. People want to know they have a legitimate shot at getting a fair deal. Otherwise, the markets lose their integrity" (Duhigg, 2009).

The Survey

Against this background we sought to gauge individual investor confidence in the government's ability to level the playing field. People hear about many types of alternative investments, such as hedge funds, private equity funds, and venture capital funds in the popular press. But do they understand what these are and have an opinion on regulating this sector anyways?

We surveyed 138 individuals representing a convenience sample of patrons at two health clubs. Our survey is available at http://app.sgizmo.com/preview_survey.php?id=161107. The sample demographics are: 53 percent are married, 77 percent carry a valid passport, 57 percent own a home, 55 percent are male, 59 percent have a college degree, and 44 percent view themselves engaged in white-collar jobs (27% blue collar, 29% neither).

We asked respondent how informed they considered themselves on economic and financial matters. 37 percent of them checked themselves as well informed, 48.6 percent somewhat informed, and 14.5 percent uninformed. Only 6.7 percent of the well and somewhat informed respondents (85.6% of total respondents) had even heard of PCAOB, let alone know or understand what it does. A far greater number (46.4%) were aware of SOX but not necessarily what it entails.

Respondents were also asked their views on who should set accounting rules. A slim majority (51.4%) believed that accounting rules ought to be set by experts in the field, only 27.5 percent indicating a preference for the government. However, this preference dropped sharply if "government" meant "political appointees without appropriate background". Expressing an often debated sentiment of business knows best, a small percentage (9%) indicated that corporations set standards. Many respondents were skeptical of the information companies furnish and of government's ability to be an effective watchdog.

As Table 9 shows, there was little or no confidence in auditors objectively auditing financial statements as well. This is not surprising given that recent financial/banking crisis occurred on SEC's watch. Whatever investor confidence the presence of PCAOB might have developed has been eroded by the continued presence of questionable investments and lack of regulation itself. It is the preview of SEC to formulate and enforce regulations with respect to these financial instruments and practices.

Table 9. Percentage of Respondents per Confidence Level

	Very confident	Somewhat confident	Not confident at all
1. How confident are you that information provided by Companies is *not* misleading?	25.4	34.1	40.6
2. How confident are you that auditors *objectively* audit financial statements?	31.2	33.3	35.5
3. How confident are you in the government's ability to be an *effective* watchdog?	31.9	47.1	21.0

Since most respondents did not know anything about the PCAOB in the first place, asking them about expanding the board's mandate becomes meaningless. An overwhelming majority did not believe that the financial sector (e.g., Wall Street) was adequately regulated (73.2%); however, a majority considered the accounting profession to be adequately regulated (54.3%).

Interestingly, a majority of respondents wanted government oversight of *hedge* funds (69.6%) but not *private* equity (33.3%). It seems respondents considered anything "private" as off limit. This underscores the fact the most respondents (68%) did not understand the nature of private equity or hedge funds and the negative consequences they may pose for the public.

Summary

A string of accounting scandals and irregularities over the past ten years have risked loss of investor confidence and invited increased regulation. The accounting profession contributed its share of "crisis of confidence" which led to the Sarbanes Oxley Act of 2002. No one wants to return to the pre-SOX system of self-regulation but it is not clear if a quasi-governmental accounting oversight body, the PCAOB, is the right alternative.

Our review revealed that the PCAOB's operating expenses grew from modest 29 million in 2003 to budgeted 158 million in 2009. Besides the 5 board members, the PCAOB has 35 top management positions. 41.5 percent of these were held by lawyers, 33.5 percent by accountants, and 25 percent by others. The Board issued six auditing standards of which five remain in effect. Of these two are significant and in-force auditing standards, the other three address relatively narrow issues. The Board has been busy carrying out inspections of registered firms, large and small. Currently, the number of registered firms total 2,080. The Board issued 928 inspection reports to date, expanded 63 reports to disclose quality control criticisms, and took disciplinary action in 22 cases.

The PCAOB is not equipped to be an effective and efficient standard setter. The SEC ought to adopt a "private sector independent expert" model for development of auditing standards, not unlike FASB. Expounding the notion of "independent expert", Schipper (1998) writes in a letter to the International Accounting Standards Committee (IASC):

> Choosing the "independent expert" approach requires interest groups to cede decision rights to the experts. That is, the interest groups can set up the system, can provide input through whatever due process procedures are imposed on the experts, and can demand accountability [because the decision process is open], but ultimately, the interest groups must relinquish the right to intervene in the standard-setting decisions of the experts (Glover et al., 2009).

Many firms registered with the PCAOB (58%) did not issue an audit report and therefore were not required to be registered. These firms apparently believed that there is some benefit to be seen as a PCAOB registrant. That is at least some indicator that perhaps CPA firms believe that their clients sense that PCAOB represents some assurance of quality or that their clients believe that investors think so.

Other than that and some anecdotal evidence of improved internal controls, the benefits of PCAOB's activities are not apparent, especially in terms of investor confidence. Since it is the SEC is responsible for maintaining investor confidence, it is difficult to gauge the direct impact of PCAOB. Majority of respondents in our survey were skeptical of information companies furnish including audited financial statements. Respondents also expressed doubt in government's ability to be an effective watchdog. This is not surprising in light of recent financial/banking crisis. In any case, it is not PCAOB's charge to formulate and enforce regulations with respect to financial instruments and practices.

Unfortunately regulation *per se* may not be sufficient as individual integrity is often suspect in corporate failure. No matter how far the pendulum swings towards regulation as a matter of public interest, there will always be a risk of management fraud and abuse for even the so called informed investors. A system that privatizes gains, socializes losses cannot just be mended. For public confidence in the capital markets and the information released by various providers (companies produce financial statement; auditors certify those statements), a complete overhaul may be necessary.

Our survey revealed considerable skepticism in the government's ability to institute meaningful regulatory reforms. However, regulation aimed at protecting investors as well as protecting the financial system from systemic risk will go a long way towards diminishing this skepticism. Regulations in the area of transparency (increased disclosure requirements), leverage, custodial accounts, ending of tax subsidy and financial marketplace loopholes would be most consequential in protecting public interest.

Limitations associated with the study include lack of benchmark as to what investor confidence was prior to the establishment of the PCAOB and use of a convenience sample. Since 85% of the study respondents had never heard of the PCAOB, the issue could be one of better informing the public.

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WHY DO WOMEN SHY AWAY FROM MAJORING IN ECONOMICS?

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ABSTRACT

Women choosing economics as their major continue to constitute a minority at American colleges today. In 1966 female students graduating with a bachelor in economics only accounted for 9% of the overall population of people graduating with a bachelor's degree in economics. In 2006, 31% of all economic bachelor degrees granted were earned by women. While there has been an increase in the percentage of women majoring in economics, women still represent a minority. This contrasts with other majors in the social sciences, where women often constitute the majority. While this gender imbalance is true for economics degrees, this is also true for economics classes. This article explores the underlying reasons for the gender imbalance in undergraduate economics classes. A survey is created that investigates the criteria and motivations for women choosing a major in economics. It will analyze what role factors such as gender of the faculty member, preference for math as well as the profession of the parents play in choosing a major. The survey will be administered to female undergraduate students at Davidson college - a coeducational institution - as well as Salem College - a college for women.

PERCEPTIONS OF INTERNS AND SELECTED TRADITIONAL GRADUATE STUDENTS REGARDING MULTICULUTAL EDUCATION

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ABSTRACT

This study is the result of surveys administered to graduate students (master's level) in the School of Education at William Carey University during the 2008 – 2009 academic school year. The pool of respondents consisted of interns (alternative route) and traditional route students. Ninety-five traditional route students voluntarily participated in the survey. Out of a total of ninety-three interns, seventy-eight (84%) completed the survey. Thirty-seven (47%) of the interns were elementary majors and forty-one (53%) interns were secondary majors. The study examined factors such as their perceptions of what multicultural education is, how often should it be taught in the classroom, and personal beliefs about how minority students learn and how they should be taught. Additionally, the major goal was to determine what curriculum and programmatic changes if any, need to be made in the master's program.

Introduction

The world is technologically changing at a rapid pace. Many facets of education in the United States have changed as well during the past decade. Educators are charged more than ever with the responsibility of trying to effectively deal the many social issues and academic needs that are brought to school by the patchwork quilt of diverse students.

The pressure is on to improve student achievement. That pressure then filters down to the teacher preparation programs. Mississippi's Redesign of Teacher Preparation Program requires teacher preparation programs to "Ensure a range of diverse settings that reflect the reality of the P-12 classroom and represents areas in which teacher candidates will be licensed." (Mississippi Institution of Higher Learning, 2008, p. 14). Therefore, this type of preparation has to be introduced and sustained throughout the teacher candidates' course work, long before field placement.

The No Child Left Behind mandate impacts the teaching and learning process in classrooms, especially the Adequate Yearly Progress (AYP) component. The purpose of this component is make sure that all learners succeed. Recently, the Nation Council for Accreditation of Teacher Education indicated: "Teacher education programs are now required to meet higher standards or increase their emphasis on classroom training in order to achieve accreditation." (McCabe, 2009, p.1).

Therefore, it is very important that teacher preparation programs effectively prepare young men and women for the "great expectations" that school administrators, parents and the public have. These programs must ensure that practicing educators and future practitioners recognize and be able to effectively teach students of all ethnic, religious, and cultural backgrounds There are many challenges within the "rainbow" classroom settings across America.

FINDINGS

Perceptions of elementary interns versus the perceptions of secondary interns

1. Multiculturalism is about making sure that all students, regardless of their cultural backgrounds are acknowledged in schools and other community settings.

	Agree	Disagree
Elementary	92%	8%
Secondary	98%	2%
Collectively	95%	5%

2. Multicultural education is a concept that should permeate classroom instruction on a daily basis.

	Agree	Disagree
Elementary	92%	8%
Secondary	80%	20%
Collectively	86%	14%

3. Multicultural education is a separate subject like science or math, taught daily or weekly.

	Agree	Disagree
Elementary	11%	89%
Secondary	22%	78%
Collectively	17%	83%

4. Multicultural education consists of several units of instruction about different cultural groups.

	Agree	Disagree
Elementary	46%	54%
Secondary	51%	49%
Collectively	49%	51%

5. Multicultural education is a way of teaching, learning and living with different cultural/ethnic groups in the classroom, in the community, in the state and in the world.

	Agree	Disagree
Elementary	95%	5%
Secondary	100%	0%
Collectively	96%	4%

6. Multicultural education should be about accomplishing the "melting pot" idea.

	Agree	Disagree
Elementary	70%	30%
Secondary	76%	24%
Collectively	73%	27%

7. Minority students are, by their nature, less likely to be successful in school. (Miller, 2001).

	Agree	Disagree
Elementary	16%	84%
Secondary	5%	95%
Collectively	11%	89%

8. There is some formulaic methodology that can be employed to effectively teach particular groups of students on the basis of their cultural status. (Miller, 2001).

	Agree	Disagree
Elementary	43%	57%
Secondary	49%	51%
Collectively	46%	54%

9. All members of a particular minority group will respond in the same way to a given approach to teaching. (Miller, 2001).

	Agree	Disagree
Elementary	5%	95%
Secondary	7%	93%
Collectively	6%	94%

10. There is no need to teach in varied ways if there are no minority students in the classroom. (Miller, 2001).

	Agree	*Disagree*
Elementary	3%	97%
Secondary	7%	93%
Collectively	*9%*	91%

11. Minority teachers will automatically be more successful than non-minority teachers in working with minority students. (Miller, 2001).

	Agree	Disagree
Elementary	5%	95%
Secondary	7%	935
Collectively	6%	94%

On item number one, defining multiculturalism, 98% of the secondary majors agreed compared to 92% of the elementary majors. Collectively, 95% of interns agreed.

Ninety-two percent of the elementary majors believed that multicultural education should permeate the classroom instruction on a daily basis compared to 80% of the secondary majors; this was a large gap. Collectively, 86% of the interns believed this principle.

Eighty-nine percent of elementary majors disagree that multicultural education is a separate subject or should be taught as a separate subject compared to 78% of the secondary majors. Only 17% of both groups believed that it should be taught as a separated subject.

Forty-six percent of elementary interns agreed that multicultural education is about presenting several units of instruction on cultural ethnic groups during one school year, whereas, 51% of the secondary interns agreed. Overall, 51% of the collective group disagreed.

On item number five, multicultural education is a way of teaching, learning, living with different cultural groups in the classroom, in the community, and in the world, 100% of the secondary interns agreed, whereas 5% of the elementary interns disagreed. Collectively, only 4% of both groups disagreed with this premise.

Thirty percent of elementary interns and 24% of the secondary interns disagreed that multicultural education should be about the “melting post” idea. Collectively, 73% believed in the “melting pot’ concept.

Only 16% of elementary compared to 5% of secondary interns agreed that minority students, by their very nature, are less likely to be successful in school. Eighty-nine percent of the collective group disagreed with this principle.

Forty-three percent of the elementary interns agreed that some specific methodology can be implemented to effectively teach particular groups of students on the basis of their cultural status.

Fifty-one percent of the secondary interns disagreed. Fifty-four percent of both groups together disagreed.

Five percent of secondary interns agreed that all members of a particular minority groups will respond in the same way to a given approach to teaching compared to 7% of secondary interns. Ninety-four percent of the groups together disagreed.

Fifteen percent of secondary interns agreed that there is no need to vary instruction if there are no minority students in a classroom compared to 3% of elementary interns. Nine-one percent of both groups disagreed.

Utilizing the principle that minority teachers will automatically be more successful than non minority teachers in working with minority students, 95% of elementary interns and 93% of secondary interns disagreed. Collectively, 94% disagreed.

The following observations were most notable between elementary and secondary interns:

Both groups closely agreed on item# 9 (2% difference): that all members of a particular minority group will respond in the same way to a given approach to teaching.
Both groups closely agreed on Item # 11 (2% difference): that minority teachers will automatically be more successful than non minority teachers in working with minority students. Both groups greatly disagreed on Item # 2 (12% difference): that multicultural education is a concept that should permeated classroom instruction on a daily basis.
Both groups greatly disagreed on Item# 3 (11% difference): that multicultural education is a separate subject, like science or math that should be taught daily or weekly.
Both groups greatly disagreed on Item # 7 (11% difference): that minority students are, by t heir nature, less likely to be successful in school.
Both groups greatly disagreed on Item # 10 (12% difference): that there is no need to teach in varied ways if there are no minority students in the classroom.

Responses of traditional route students

1. Multiculturalism is about making sure that students, regardless of their cultural backgrounds are acknowledged in schools and other settings.

Agree	Disagree

95%	5%

2. Multicultural education is a concept that should permeate classroom instruction on a daily basis.

Agree	*Disagree*
95%	*5%*

3. Multicultural education is a separate subject, like science or math, taught daily or weekly.

Agree	*Disagree*
135	*87%*

4. Multicultural education consists of several units of instruction about different cultural ethnic groups.

Agree	*Disagree*
59%	*41%*

5. Multicultural education is a way of teaching, learning and living with different cultural/ethnic groups in the classroom, in the community, in the state and in the world.

Agree	*Disagree*
99%	*1%*

6. Multicultural education should be about accomplishing the "melting pot" idea.

Agreed	*Disagree*
82%	*18%*

7. Minority students are by their nature, less likely to be successful in school. (Miller, 2001).

Agree	*Disagree*
5%	95%

8. There is some formulaic methodology that can be employed to effectively teach particular groups of students on the basis of their cultural status. (Miller, 2001).

Agree	*Disagree*
49%	51%

9. All members of a particular minority group will respond in the same way to a given approach to teaching. (Miller, 2001).

Agree	*Disagree*
2%	98%

10. There is no need to teach in varied ways if there are no minority students in the classroom. (Miller, 2001).

Agree	*Disagree*
11%	89%

11. Minority teachers will automatically be more successful than non-minority teachers in working with minority students. (Miller, 2001).

Agree	*Disagree*
7%	93%

Only 5% of the traditional route students disagreed with the definition of multiculturalism. Ninety-five percent of them agreed that multicultural education should permeate classroom instruction on a daily basis.

Thirteen percent of the students agreed that multicultural education is a separate subject like science or math which should be taught on a daily or weekly basis.

However, 41% disagreed that multicultural education consists of several units of instruction about different cultural ethnic groups.

Ninety-nine percent of the traditional route students agreed that multicultural education is a way of teaching/learning/living with different cultural/ethnic groups in the classroom, in the community, in the state and in the world. Eighteen percent disagreed with the “melting pot” idea.

On the premise that minority students are, by their nature, less likely to be successful in school, 95% disagreed. Forty-nine percent agreed that there is some formulaic methodology that can be employed to effectively teach particular groups of students on the basis of their cultural status.

Ninety-eight percent of traditional route students disagreed that all members of a particular minority group will respond in the same way to a given approach to teaching. Eleven percent agreed that there is no need to teach in varied ways if there are no minority students in the classroom, and 93% disagreed

that minority teachers will automatically be more successful than non minority teachers in working with minority students.

Perceptions of interns compared to perceptions of traditional respondents

1. Multiculturalism is about making sure that all students, regardless of their cultural backgrounds are acknowledged in schools and other community settings.

	Agree	Disagree
Interns	96%	4%
Traditional	95%	5%
Collectively	96%	4%

2. Multicultural education is a concept that should permeate classroom instruction on a daily basis.

	Agree	Disagree
Interns	86%	14%
Traditional	95%	5%
Collectively	91%	9%

3. Multicultural education is a separate subject like science or math , taught daily or weekly.

	Agree	Disagree
Interns	17%	83%
Traditional	13%	87%
Collectively	15%	85%

4. Multicultural education consists of several units of instruction about different cultural groups.

	Agree	Disagree
Interns	49%	51%
Traditional	59%	41%
Collectively	54%	46%

5. Multicultural education is a way of teaching, learning and living with different cultural/ethnic groups in the classroom, in the community, in the state and in the world.

	Agree	Disagree
Interns	95%	5%
Traditional	99%	1%
Collectively	98%	2%

6. Multicultural education should be about accomplishing the “melting pot” idea.

	Agree	Disagree
Interns	73%	27%
Traditional	82%	18%
Collectively	78%	22%

7. Minority students are, by their nature, less likely to be successful in school. (Miller, 2001).

	Agree	Disagree
Interns	11%	89%
Traditional	5%	95%
Collectively	8%	92%

8. There is some formulaic methodology that can be employed to effectively teach particular groups of students on the basis of their cultural status. (Miller, 2001).

	Agree	Disagree
Interns	46%	54%
Traditional	49%	51%
Collectively	48%	52%

9. All members of a particular minority group will respond in the same way to a given approach to teaching. (Miller, 2001).

	Agree	Disagree
Interns	6%	94%
Traditional	2%	98%
Collectively	4%	96%

10. There is no need to teach in varied ways if there are no minority students in the classroom. (Miller, 2001).

	Agree	Disagree
Interns	9%	91%
Traditional	11%	89%
Collectively	10%	90%

11. Minority teachers will automatically be more successful than non-minority teachers in working with minority students. (Miller, 2001).

	Agree	Disagree
Interns	6%	94%
Traditional	6%	94%

Collectively	6%	94%

Four percent of interns compared to 5% of traditional students disagreed with the definition of multiculturalism. Ninety-five percent of traditional students agreed that multicultural education should permeate classroom instruction on a daily basis, whereas, 86% of interns agreed.

Only 13% of traditional students compared to 17% of interns agreed that multicultural education is a separate subject, like science or math, taught on a daily or weekly basis. However, 49% of interns agreed that multicultural education consists of several units of instruction about different cultural /ethnic groups compared to 59% of the traditional students.

Ninety-six percent of the interns, compared to 99% of traditional students agreed that multicultural education is a way of teaching/learning/living with different cultural/ethnic groups in the classroom, in the community, in the state and in the world. Twenty-seven percent of the interns disagreed that multicultural education should be about accomplishing the "melting pot" concept, and 18% of traditional students disagreed.

The interns disagreed (89%) with the premise that minority students are, by their nature, less likely to be successful in school compared to 95% of the traditional students. Both groups of students were close in their perceptions regarding the principle that some formulaic methodology can be used to effectively teach particular groups of students on the basis of their cultural status. Forty-six percent of interns agreed on this principle compared to 49% of the traditional students.

Regarding their perceptions of item nine (All members of a particular minority group will respond in the same way to a given approach of teaching), 94% of interns disagreed and 98% of traditional students disagreed with this principle.

Ninety-two percent of interns disagreed with the premise that there is no need to teach in varied ways if there are no minority students in a classroom, whereas, 98% of traditional students disagreed. Surprisingly, 6% of interns believed that minority teachers will automatically be more successful than non minority teachers in working with minority students, compared to 6% of the traditional students.

The following observations were most notable:

- Interns and traditional students closely agreed on Item #1: what multiculturalism is (1% difference.
- Interns and traditional students resoundingly agreed on Item #11: that minority teachers will automatically be more successful than non minority teachers in working with minority students (0% difference).
- Interns and traditional students greatly disagreed on Item #2: that multicultural education is a concept that should permeate classroom instruction on a daily basis (9% difference).

- Interns and traditional students greatly disagreed on Item #6: that multicultural education should be about accomplishing the "melting pot" idea (9% difference).

Programmatic implications

Both groups of graduate students (interns and traditional route) were well aware that they live in a world where multiculturalism is a part of their daily lives. However, interns and traditional route students had some misconceptions about three principles of the survey:

- Item #4: Multicultural education consists of several units of instruction about different cultural ethnic groups (49% of Interns and 59% of Traditional students agreed on this principle).

It must be emphasized that multicultural education is not the idea of presenting programs or materials of different cultures to students one or two times during a school year. Contributions from all cultures should be interwoven with the curriculum and instructional process on a regular and continuous basis.

- Item #6: Multicultural education should be about accomplishing the "melting pot" idea (73% of Interns and 82% of Traditional students agreed on this principle).

A greater effort must be made to erase the "melting pot" concept. In the past, the idea was to assimilate everyone into the American mainstream. Although students are in school six to seven hours each day, teachers must be cognizant of the fact that students from diverse backgrounds do not entirely give up their families' traditions and core values.

- Item #8: There is some formulaic methodology that can be employed to effectively teach particular groups of students on the basis of their cultural status (46% of Interns and 49% of Traditional students agreed on this principle).

Teachers should utilize an eclectic approach to teaching. There is no one magic portion or magic teaching strategy akin to particular groups of students on the basis of their cultural backgrounds. Elise Trumbull and Carrie Rothstein-Fisch (2008) state: "Of course, no culture or individual is completely individualistic or collectivistic. Each differs in the relative emphasis placed on individualisitic or collectivistic values." (p. 64).

Other significant findings were:

- Item #7: Minority students are, by their nature, less likely to be successful in school (11% of Interns and 5% of Traditional students agreed on this principle).

Eight percent of the two groups agreed on this principle. This percentage is too high; even 1% would be too high. All educators must believe that all students can be successful to the best of their abilities; students' clothing, shoes and skin tones do not dictate their success in school and in life. Gillian Potter (2007/2008) states: "As we grapple with the challenge of responding to the diverse needs of children, we must remember that "when students are treated as competent, they are likely to demonstrate competence.'" (p. 69).

- Item #10: There is no need to teach in varied ways if there are no minority students in the classroom (9% of interns and 11% of traditional students agreed on this principle).

Effective practitioners/teachers always acknowledge different learning styles and the multiple intelligences of students and recalcitrancy. Based upon the percentages above, in a class of 25 students, 4 students would perish!

The overall results of this study indicate that the goals, alignment and coordination of the various graduate program diversity components need to be revisited. A stronger emphasis should be placed on survey Items numbers 4,6,7, 8 and 10.

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EXAMINING SPORTS AS A SOCIAL ANCHOR IN COMMUNITY AND CAMPUS DEVELOPMENT

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ABSTRACT

Social Anchor Theory states that, within any given community or campus context, there are social institutions that serve to anchor social networks, thereby contextualizing the community and its networks. In this re-conceptualization, social anchors are defined as these institutions that support the development and maintenance of social capital and networks at the community or campus level. They may take various forms, including schools, corporations, man-made or natural structures or cultural events. Sports may serve as another unique social anchor. These anchors must allow for social capital development in the form of bonding or bridging, provide a point of connection for various members of the community across racial, gender, and other demographic boundaries, and provide some form of uniqueness or identity for community members. Anchors must enhance or construct a sense of community, trust, or reciprocation within social networks. Sports, from the amateur to collegiate to professional levels, may provide a base to build the social network and identity of a given community or campus.

Keywords: community development, social anchoring, social capital

Introduction

At the community or campus level, social anchors are institutions that act as a support for the development and maintenance of social capital and social networks. While social anchors may exist as various types of institutions, including schools, corporations, man-made or natural structures (Goodsell, 1997), or cultural events, sports subsist as a high profile anchor in many places around the world. According to Social Anchor Theory (Clopton & Finch, in review), several characteristics are necessary for an institution to be considered a social anchor. The anchor must allow for social capital development in the form of bonding or bridging, provide a point of connection for various members of the community across racial, gender, and other demographic boundaries, and provide some form of uniqueness or

identity for community members. Social anchors must also contribute to the four common elements of most definitions of community: a locality, a local society, collective actions, and mutual identity (Bridger & Alter, 2006). Social capital networks are often conceptualized using a two-dimensional visualization of nodes interconnected by lines between them. The Social Anchor Theory posits the anchors as a base for the entire network, thereby creating a three-dimensional image. While the social network nodes are interconnected to each other, they are also connected to various social anchors which provide stability and a foundation for the entire network. Further, Social Anchor Theory alludes to the ecological orientation suggested in previous literature (Perkins, Hughey, & Speer, 2002) to deconstruct social capital by incorporating an additional level of influence in a community network.

Social Anchor Theory suggests that social institutions serve as a grounded foundation, or anchor, for social capital development within a community. For an institution to be a social anchor, it must enhance or construct a sense of community, trust, or reciprocation within social networks (Putnam, 2000). True social anchors strengthen ties between like-minded individuals, but are also able to promote the creation of new network connections across demographical lines such as race, class, sex, and religion. In fact, research in community development and other disciplines has suggested communities benefit the greatest when both forms of social capital are enhanced and maintained at high levels (Kavanaugh, Reese, Carroll, & Rosson, 2005; Saegert, Thompson, & Warren, 2001; Stone & Hughes, 2002). Past research efforts indicate that sport has proven to reach out across diverse demographics such as age, class, and race (Harris, 1998; Palmer & Thompson, 2007; Tonts, 2005). In fact, it was Harris (1998) who described sports as “communal endeavors” (p. 146) where social networks are created and subsequently transcend nearly all classes of people. Still, this bridging potential of sport remains relatively untested and even contested as sport has always possessed an introverted orientation (Seippel, 2008) and has been among the least linked institutions in society (Perrin, 2005).

Putnam (2000) also posed the question regarding a potential relationship between an individual’s indirect sport participation and any social capital connection. While most research has explored direct participation in sport clubs and organizations, a few studies have looked at communities of sport fans and the presence of social capital. Palmer & Thompson (2007) analyzed a community of football supporters and found that team identification fostered both bonding and bridging social capital. This impact alludes to sport’s ability to exist as an “anchor” of social networks, a notable finding as indirect sport consumption of college athletics has always been a contemporary element in the campus community (Sperber, 2000).

Social Anchor Theory states that, within any given community, there are social institutions that serve to anchor social networks and provide for the context of these networks and relationships. This context subsequently serves as a basis for community or campus development (Bridger & Alter, 2006). Furthermore, two salient criteria of Social Anchor Theory exist to delineate true social anchors within a community. First, social anchors must enhance both bonding and bridging social capital amongst the community’s networks. Such an augmentation of social capital impacts the individual level and

improves the overall collective social capital of the community (Putnam, 2000). Moreover, this social capital augmentation occurs through anchoring the networks back to the context of the community. As Bridger & Alter (2006, p.8) stated, "social networks are not free floating." At the most fundamental level, social anchors secure these social networks.

The importance of identity should not be overlooked amongst social anchors and within Social Anchor Theory, and both researchers and practitioners in community development must continue to incorporate the notion of identity into the relationship of social anchoring and community. Social Identity Theory requires the use of social institutions with which individuals can identify, and this identification helps draw lines with which in-groups and out-groups are created. Social anchors are necessary to draw those lines of group identification back into the community context. As Nalbandian (2005, p. 313) suggested "people want to be a part of creating and maintain a community with which they identify, and they are willing to take a part in protecting a sense of community." In essence, community development relies upon effective social anchoring, and successful social anchoring relies upon identity creation.

Finally, while social anchors are a platform for network and identity construction, these institutions also foster maintenance and enhancement (i.e. community development) through interaction. Notably, previous literature has tied the social interaction of a community back into anchors, claiming interaction itself as "the source of community identity" (Wilkinson, 1991, p. 13). However, these social anchors allow for the interaction to occur and strengthen its quality through identity creation.

Literature review

Social anchors may serve as a base for maintaining and building social capital and social networks at the community level. This development occurs as people in the community are able to spend time interacting, discussing, or participating in an activity that will encourage trust and relationship building. They may also serve as holding points for communities that face economic and social pressure from outside forces. The idea that social anchors can serve as a base to stabilize a potentially shifting social network was addressed by Thake's (2007) perspectives about community anchor organizations. Thake used two effective imageries to portray the concept. The first picture used to describe community anchor organizations was that of an anchor department store at a shopping mall, a store that serves as a building block for the other smaller stores around it. Second, Thake pictured a sailing vessel using a drag anchor during a storm to avoid being blown far off course. He describes community anchor organizations as fulfilling the same role for communities that are "buffeted by changes that are beyond their control (Thake, 2007, p. 3).

The conceptualization of social anchors is drawn across numerous, disparate academic disciplines. Other areas of literature have dealt with the general concept of social anchoring and community impact, including geography (Horton & Reynolds, 1971; Schönfelder & Axehousen, 2003; Miller, 2005; Shapiro, 2007; Carrasco, Hogan, Wellman, & Miller, 2008), architecture (Goodsell, 1997), education (Kennedy,

2000; Roe & Karbon, 2003), business (Southworth & Stepan-Norris, 2003), and cultural studies (Wood & Thomas, 2005; Gotham, 2007; Guenin-Lelle, 2007).

Sports may also be a potential social anchor for a community or campus. Nalbandian (2005) details the development and construction of a NASCAR race track in the Kansas City area and the desire for individuals in a community to build trusting relationships through civic engagement. In this example, the local government authorities worked with citizen groups and sports officials to complete the racing project while addressing public concerns. In addition, at the collegiate sport level, the connection of college sport and community offers a potential reiteration of Chalip (2006) who suggested that sports teams could potentially help develop a sense of community among followers. This sentiment is echoed in previous literature where sport has been shown to provide for opportunities in civic engagement (Harris, 1998; Perks, 2007), often a platform for creating or strengthening social networks and relationships (Seippel, 2006). Sport has significantly enhanced certain aspects of social capital construction in rural communities (Atherley, 2006; Bourke, 2001; Tonts, 2005), in specific members of communities (Amara et al., 2004), and through community ownership and engagement (Jarvie, 2003; Maguire, Jarvie, Mansfield, & Bradley, 2002). Sport has also been seen as a bridge-builder of social capital, the most important aspect to social capital in a given community (Putnam, 2000). While bonding through sport has been shown to exclude members of certain classes, the literature has also shown sport to cut across age, class, and race (Harris, 1998; Palmer & Thompson, 2007; Tonts, 2005). Further, Harris (1998, p. 146) described sports as "communal endeavors," creating new social networks that transcended nearly all classes of people, thus, enhancing the civility of society. Taylor (1996) also provided an analysis of the role sport and recreation have played in the development of communities in the United States. He described sport and recreation as *community anchors* as well as examining their role as counterweights to conflict. Some parallels were drawn with many American communities cutting sport programs and a rise in conflict and violence in some U.S. cities.

Further, these parallels have also resonated throughout higher education, as social anchors – in essence exist as pillars within the campus community and the campus community exists as a significant contributor to the overall development of universities and students. Students' perception of the campus community has been linked with college satisfaction (Belch, Gebel, & Maas, 2001), attrition rates (Astin, 1999), and even academic integration (Pascarella & Terenzini, 1991). The campus community is impacted similarly by a diversifying student body and the rising cost of attendance (Kuh, Schuh, Whitt, et al., 1991) both of which exist as significant barriers to enhancing campus community. But also in accord with the overall community, the college campus has been viewed in relation to the big-time athletics programs it houses (Sperber, 2000). Intercollegiate athletics play a major role in shaping the social culture on a college campus in the United States (e.g. Beyer & Hannah, 2000), yet the value of this impact is still highly contested (Sperber). For instance, while team identification of college students enhances their perceived sense of community (Clopton, 2008), questions regarding the value orientation of such a community and the actual benefits derived from this community remain as this team identification has also been found to detract from the students' grade point average. The ability of

athletics on a college campus to impact overall community and social networks amongst fans exists in accord with the findings of previous research on sports fans, community, and social capital (e.g. Palmer & Thompson, 2007). While athletics on a college campus serves as a significant element in the construction of community, a dearth of literature exists analyzing the directional impact of athletics upon the overall university community. Therefore, the intent of this research was to explore the relationship between the team identity of college students, its relationship with social networks on campus (i.e. social capital), and if these social networks are aligned with the overall mission of higher education.

A sport of franchise may provide a base for a sense of community at a national level. One example of this phenomenon is the national rugby team of New Zealand, the All Blacks. The All Blacks, first named during a tour of the British Isles in 1905, are a source of national identity and cultural pride to many New Zealanders. The All Blacks rugby team played an important role in melding traditional Maori and British immigrants' cultures, and now serves as a source of international identity to many Kiwis (Hokowhitu, Sullivan, & Williams, 2008). One prominent example of cultural identity and pride is the famous 'Haka' dance, performed by the All Blacks before international rugby matches (Jackson & Hokowhitu, 2002). The All Blacks have contributed to the infusion of rugby in many aspects of life in New Zealand, including training programs for youth (the Smallblacks and Girl Blacks) and secondary level students. The All Blacks fan base cuts across age, gender, and ethnic barriers and provides a central rallying point for many Kiwis.

On a community level, successful or beloved professional sports teams may serve as social anchors. An example is the Boston Red Sox. The Red Sox are an obsession for tens of thousands of fans who consider themselves part of the Red Sox Nation. Whether meeting at the team's historic home field, Fenway Park, or discussing the team at one of hundreds of Boston area eateries and bars, the Red Sox provide a common point of interest for many New Englanders. Fenway Park is considered by many Bostonians to be the cultural center of the city's identity (Borer, 2008).

An example of sport as a social anchor at a campus level is Penn State university football. The Penn State Nittany Lions play their home games before crowds of over 100,000 people in Beaver Stadium in State College, Pennsylvania. As Toma (p. 52, 2003) describes, the symbols and rituals involved with the football game and team, such as the lion mascot and the simple blue and white uniforms, reinforce the values and ideals of the university. Likewise, outsiders use these symbols as a point of reference for the university. While not every student on campus or resident in the community may be a fan of the team, the Lions do provide a foundation for building relationships (new students), maintaining relationships (alumni), or fostering a continued sense of community with important stakeholders (politicians, fans, local residents) (Toma, 2003).

Conclusion and Implications

Future research is necessary to assess the role of sports as a social anchor through social capital assessment and identity measurement. Both metrics of social capital and identity should be able to include individual and community or campus levels. Several important concepts remain to be explored. With what groups do sports promote bonding or bridging social capital? What is the process and timing of the development of trust and reciprocity in a community? How do sports help to form or reinforce the values, traditions, and identities of a community or university? How can community developers and higher education administrators most effectively use sports to promote growth and unity in their respected populations? Similar questions resonate throughout college campuses where the challenge of building campus community faces an increasing number of barriers (Strange & Banning, 2001), where college campuses are heavily dependent upon a strong sense of community as students have been found to experience beneficial gains from a strong campus culture (e.g. Flowers & Pascarella, 1999). Interestingly, the quality of this campus community is not independent of the presence of sport in the form of highly-competitive athletics, as intercollegiate athletics posses a significant role in the formation of campus community through tradition and ritual (Boyer, 1990). Colleges and university have also benefited from the unique position of intercollegiate athletics in the United States as cultural entity (Beyer & Hannah, 2000) and few elements of an institution possess the ability to "confer a sense of identity (Toma, 2003, p.78)" than that of athletics on a collegiate campus – a notion supporting the previous literature (Heere & James, 2007). Still, little empirical research exists exploring the individual and community benefits (i.e. social capital) derived by students on the campuses of these institutions where big-time athletics programs are maintained. Further, while these big-time athletics programs have been acknowledged to impact the college students attending these institutions, the quality of impact and the positive or negative benefits accompanying the impact remains in doubt (Sperber, 2000).

For instance, team identity of students across multiple college campuses was found to enhance the overall sense of community that was perceived by the student respondents (Clopton, 2008). However, the actual value orientation of the community being reinforced was not assessed, in addition to not addressing any connection between team identity and extent to which a college student might identify with the university overall, as university identity remains highly predictive of a successful college experience and an outcome sought after by student affairs administrators (Luhtanen & Crocker, 2002). Also, like such organizations as fraternities and sororities, a sense of community enhanced by the presence of athletics would be a negative contributor to the campus community if the values central to that group are antithetical to the overall institutional mission (Marsh & Kleitman, 2002). In essence, the bonding potential of team identity on an athletics campus has been found amongst these other student groups and would align with previous findings on fan communities (Heere & James, 2007; Palmer & Thompson, 2007).

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TEACHING MULTICULTURAL EDUCATION CONCEPTS IN CATHOLIC GRADE SCOOLS: A RESEARCH STUDY CASE FOR THE STATE OF ILLINOIS

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ABSTRACT

For many years, Catholic schools have in general, been resistant against including multicultural education concepts in their curricula. No one really knows why, but one can only speculate about why this is so. As researchers, we would like to think that there are two main reasons why this is so. First, we would like to think that some multicultural concepts such equality between men and women in church hierarchy situations is not something that the Catholic Church is ready to deal with. For instance, the idea of ordaining women as priests or high-rank church leaders is out of the question, since all of Jesus' twelve disciples were men. The second reason might be that teaching multiculturalism might open "a can of worms", so to speak, because topics dealing with issues such as *Darwinism* might be viewed a as an attack on the theory of *Creationism*, by high-ranking church officials, even as far up as the Vatican City. To determine the degree to which this is done, a descriptive research study was set up. In this study, a survey questionnaire was sent to 200 teachers in 40 grade schools, who were scientifically randomly selected to participate in the study. These participants were not identified by name, number, or any way. The questionnaire consisted of 50 "Likert Scale" items. A little over 25% of the selected participants responded to the survey questionnaires, mailed to them. The collected data were analyzed, in terms of the frequency with which the respondents thought they incorporated the issues stated in each questionnaire item. It is the frequency part of the responses that the interpretation of the data focused.

Introduction

Historically, Catholic schools were established as a refuge from prejudice and bigotry (Hunt & Kunkel, 1984). They also espouse that their main missions, other than to teach religious doctrine, are to educate all children and to build community, while celebrating the dignity and equality of all God's children (Litton, 1998).

Litton (1998) states that Catholic schools see diversity, not as a problem, but as a resource, that their religious curricula only enhance their ability to address diversity issues, and that through their church affiliation, they can also augment their ability to reach out and develop community. With this premise in mind, it seems only natural that there is a need to investigate the degree to which multicultural concepts are being integrating into Catholic grade school curricula *Statement of the Problem*

A cursory review of literature related to this topic suggests that little, if any, studies have been undertaken, especially at the state level, to determine the degree or level at which multicultural concepts are incorporated into the curricula of Catholic grade schools. In Litton's 1998 research, he found that Catholic schools, because of their religious affiliation, are ideal places for the inclusion of multicultural concepts.

However, in Kremer's study, she concludes that Catholic schools have, at least on the surface, failed to embrace the tenets of multicultural education, thereby, leaving the students educated in American Catholic School systems, vulnerable and ill prepared to meet the challenges of the 21st century (Kremer, 2003). Therefore, the investigator believes that there is a need to investigate this further, to determine to what degree Catholic grade school educators incorporate multicultural concepts into their curricula.

The researcher hopes that the information generated by this study will assist classroom teachers, curriculum developers, school administrators, and other educational personnel interested in preparing students for the cultural realities imposed by our ever-changing society.

To get an insight into this problem, the researcher decided to do a descriptive study of grade school teachers in 40 randomly selected schools in the State of Illinois. Information to investigate the essence of this problem was collected through questionnaires mailed to participants.

Purpose of Study

The purpose of this study was to identify the degree to which classroom teachers incorporate multicultural education concepts in Catholic grade school curricula in the state of Illinois. The first part of the survey was to address personal characteristics of the participants, which were divided into background information about the respondents, formal educational level, and the length of their teaching career (Creswell, 2003). The examination of background information was important to this study because it was hoped that this information would make it possible to identify characteristics and factors contributing to the teachers' assumptions, perspectives, and biases concerning cultural differences (Gollnick & Chinn, 2006).

The second part of the study was designed to solicit information, dealing with the degree to which classroom teachers incorporate multicultural education concepts such as class, ethnicity, race, gender, exceptionality, religion, language, and age (Gollnick & Chinn, 2006).

Research Items

The development of the research instrument, which consists of 50 items, will be discussed in detail later, in Chapter 3, entitled Methodology, under the subheading R*esearch Instrument Development*. These items were a result of reading, research, course work, and teaching experience, done by the researcher during her undergraduate and graduate work.

Assumptions

The researcher assumed that the research subjects, who taught in Catholic schools, would be open-minded enough to discuss or explore other religious beliefs that differed from Catholicism. The second assumption is that the researcher thought there was an aggressive staff development plan in Catholic schools, which would prepare teachers to systematically acquire skills they would use to incorporate multicultural education concepts in their teaching.

The third assumption the researcher had was that multicultural concepts would be effectively implemented across the curriculum, irrespective of the subject matter. The fourth and last assumption was that teachers did not necessarily need more time, apart from the time school programs allotted to each subject, but that each subject would lend itself to the incorporation of multicultural concepts. The researcher assumed that every moment available to the teacher was a "teachable moment".

Limitations of the Study

Even though the study results revealed, to some degree, what the researcher intended to get out of it, it is felt that there were some limitations related to the study itself. The first limitation would be the fact that the study focused only on grade school (K-8) teachers. It may have been a good idea to have included teachers who teach in grades K-12. This may have given the researcher a more comprehensive picture of what happens in Catholic schools, as far as teachers' inclusion of multicultural education concepts is concerned.

The fact that the study dealt with grade schools within the state of Illinois, as apposed to national or international Catholic grade schools, it is very difficult to make some general statements concerning what happens else where rather than just in the state of Illinois.

Since school administrators or curriculum developers are also involved in this issue, in one way or another, it might have been better to have included them in the study, to provide the researcher with an opportunity understand the reality of how this issue is handled in Catholic school environments.

Even though the researcher sent out 200 surveys and got back 56 responses, which is a valid percentage for a research study of this nature, a higher percentage of responses might have given the researcher a

different picture of what really happens in Catholic schools where the representative sample population teaches.

Time was a big limiting factor in this study. There was only enough time to send out one round of surveys, but not enough time to send out a second group of surveys. However, follow-up telephone calls were made to school administrators of the randomly selected schools, to encourage their teachers to complete and return their survey questionnaires.

Organization of the Study

This research study is divided into five chapters. Chapter one discusses the statement of the problem, definition of terms used in the study, the purpose of the study, research items, assumptions, limitations of the study, significance to the researcher's future profession, and the organization of the study.

Chapter two covers materials found in research literature related to the topic. The related literature is discussed under three subheadings which are the international level, the national level, and the state level. The last part of this chapter deals with a summary of related literature findings and conclusions made, based upon these findings.

Chapter three, methodology, discusses the characteristics of the research participants used, the development of the research instrument, the sampling method, and data collection methods.

Chapter four covers the analysis of the research findings in terms of the frequencies with which subjects responded to each of the items. Additionally, the chapter also discusses reasons given by respondents as to why they did not implement multicultural education concepts.

Chapter five includes a summary of the findings and conclusions made. The last part of this chapter discusses implications for further studies, and also gives recommendations for further research on this topic.

Research Methods

Overview

After reviewing the literature, the researcher has concluded that no existing study has been completed, that addresses the degree to which multicultural concepts are incorporated into the Catholic grade school curricula in the state of Illinois. In an attempt to uncover this observable fact, the researcher feels that this study would be an important piece of information in aiding administrators and staff members in both short and long-term strategic planning.

Research Participants

The research study was limited to Catholic grade teachers who taught Kindergarten through eighth grade. This was done for a number of reasons. The first reason is that multicultural education concepts should be taught, with necessary modification, of course, as early as possible in a student's life. This gives the teacher the flexibility to lay the foundation for more complicated concepts to be dealt with later on, in the educational curriculum.

The second reason is that fifth grade tends to be the last point students are in a self-contained classroom, since after that, classes are generally departmentalized, making it more difficult to collect data from the increased number of educators. The third reason is that turnaround time for the participants is very limited, thus decreasing the chances of getting a high percentage of returns (Babbie, 1990; Fowler, 2002). Personal interviews would involve traveling as well as a lot of time on both the researcher and participants' part. The survey method used should only require each participant to spend about twenty minutes to complete the survey items.

Research Instrument Development

Permission to recruit subjects was secured from The Committee on the Use of Human Subjects in Research on October 10, 2007. Because the survey instrument was anonymously sent to potential participants, there were no risks whatsoever to the subjects participating in the study. It was assumed that the knowledge gained from this study would be beneficial to the participants' schools and their students, in that the results might bring about curricular changes in the way multicultural concepts are implemented in their classrooms.

During the fall semester of 2007, the researcher met with committee members to address issues related to the research instrument development, among other things. A rough draft instrument which the researcher and the Committee Chair had developed was presented in this meeting. The instrument had 100 "Likert Scale" items. Upon discussion concerning the length of the instrument, the clarity of the item content, and the projected length of time it would take a respondent to complete the instrument, it was unanimously decided that the instrument was too long and that it could be cut in half, while still maintaining the essence of the research objective. Additionally, it was suggested that an item soliciting three reasons concerning why teachers did not implement multicultural education concepts in their teaching was also suggested.

The suggestions made in this meeting were incorporated into the revision of the instrument. The length was cut in half, succeeding in having a final draft of the instrument with 50 items. The narrative response to the suggestion concerning why teachers did not incorporate multicultural education concepts was included as part of the final survey instrument.

There were a large enough number of participants to enable the researcher to make generalizations about this population's behaviors. Additionally, this particular study is not classified as either a longitudinal or a cross-sectional survey study.

Participant Sampling Method

Since the method used by the Bradley University Computer Services Office in identifying schools and subjects was through randomization, teachers in each of 424 Catholic grade schools in the State of Illinois had an equal chance of being selected to participate. Those who voluntarily returned the completed surveys granted the researcher permission to use their information within the research study. The researcher took all necessary provisions to ensure the privacy of participants as well as the confidentially of the data collected from each participant.

Additionally, since anonymity was used by the researcher, the participants need not be concerned that any coercive or adverse reactions will occur because of their participation.

Data Collection Methods

Survey instruments were mailed to 200 teachers in randomly selected Catholic grade schools. The returned 56 responses were sent to the Bradley University Computer Service Office for analysis. The raw data were further analyzed by the researcher using the Statistical Package for Social Science (SPSS) computer software program which generated cells representing frequencies and percentages for each of the 50 items. The last part of the instrument solicited respondents' narrative comments concerning three reasons why they would not incorporate multicultural education concepts in their teaching. These comments were "codified" in general terms and frequencies for each of the general category were also assigned.

Results of Research Study

Introduction to the Analysis

The analysis of the data obtained in the study was divided into the following subsections: An overview of multicultural education, socioeconomic status or class, race and ethnicity, sex and gender, exceptionalities, language, and age. To help the reader understand the analysis of the collected research data, a comprehensive frequency and percentage table of all items, was developed.

The table shows the number of respondents and percentage of frequency with which they indicated the degree to which they thought they incorporated multicultural education concepts in their teaching activities. This table was further expanded into a more detailed section with complete cells and discussion of each research item. Each of these subsections was discussed separately, to minimize any confusion or overlapping of the contents in each subsection.

In addition, respondents' narrative responses to items dealing with why they, as educators, did not incorporate multicultural education concepts in their teaching were discussed in this section as well. The focus of this discussion was primarily on frequencies as determined by the respondents' degree to which they incorporate multicultural education concepts.

Discussion of an Overview of Multicultural Education Items

Of all the subjects who responded to item number one, 39.3% of respondents indicated that they sometimes defined multicultural education as an educational strategy, while almost 27% of them indicated that they did it most of the time.

Of all those who responded to the item concerning why certain group of students such as Puerto Ricans, Mexicans, and African-Americans tend to score below European Americans on standardized test, 71.4% of them indicated that they never discussed the issue.

Almost half of those who responded to item number, three concerning the discussion of the fact that culture provides a "blueprint" that determines the way we feel, think, and behave in our society, indicated that they sometimes did it.

Of all of the subjects who responded to item number four which dealt with the fact that culture can manifest itself in nonverbal communication such as shaking hands, speaking, or gesturing, 46.4% of them indicated that they sometimes incorporated this aspect of multicultural education in their teaching.

Concerning the fact that a group's distinctive cultural patterns either become part of the dominant culture or disappear as a group adopts the dominant group's culture, 37.5% of them indicated that they never incorporated this aspect in their teaching, while 28.6% of them indicated that they sometimes did.

Of those who responded to item six, the last one in this subsection, which dealt with whether or not teachers discussed the fact that to establish equality, major changes must take place in schools, homes, institutions, and society as a whole, 28.6% of them indicated that they rarely incorporated this aspect of multiculturalism in their teaching, while 25% of them indicated that they sometimes did.

Discussion of Socioeconomic Status or Class

Thirty-seven and a half percent of the respondents revealed that they rarely discussed the fact that socioeconomic class determines the schools students attend, restaurants in which they eat, and the community in which they lived, while 32.1% of the respondents indicated that they never did.

Of all those who responded to the item concerning the fact that in America many people accept and follow socially defined behaviors, based on their values and class, 30.9% of the respondents denoted

that they sometimes discussed the issue, while 23.6% of them indicated that they discussed this issue most of the time.

Concerning item nine which dealt with the fact that the socioeconomic condition of persons and groups can be measured with a criterion called socioeconomic status (SES), 72.7% of the respondents pointed out that they never discussed this subject in their classrooms.

Thirty-six and four tenths percent of the subjects who responded to item ten, dealing with the fact that the best indicators of occupational prestige are education and class, specified that they rarely talked about it, while 30.9% of them indicated that they never discussed this matter.

Concerning item eleven which dealt with the fact that many Americans identify themselves as middle class, 36.4% revealed that they never talked about this issue in class, while 23.6% indicated that they rarely discussed that topic.

Of all the subjects who responded to item twelve dealing with the fact that seeing students as individuals rather than members of a specific socioeconomic group may assist educators in overseeing classism, 36.4% indicated that they never talked about this issue, while 21.8% said they discussed this issue, either most of the time or sometimes.

Discussion of Race and Ethnicity

Forty-one and eight tenths percent of the subjects, who responded to item number thirteen, indicated that they sometimes discussed the fact that racism is a mixture of prejudice and discrimination, while an additional 20% pointed out that they talked about it most of the time.

Concerning the fact that in the 1960s, the Civil Rights Movement reduced barriers that prevented many African-Americans from enjoying advantages of the middle class, 43.6% of the educators polled, indicated that they sometimes incorporated that discussion into their classroom activities, while an additional 20% responded that they included that discussion topic most of the time.

Of all those who responded to the item concerning the fact that the majority of undocumented immigrants settle in states such as California, Texas, and Illinois, 47.3% of them indicated that they never discussed this issue, while 25.5% specified that they sometimes talked about it.

Of all the subjects who responded to item number sixteen, 33.9% of respondents pointed out that they sometimes discussed the fact that the 1964 Civil Rights Act banned discrimination in schools, employment, and public accommodations, while almost 27% said they never talked about this issue.

Almost 63% of the subjects who responded to the survey indicated that they either rarely or never discussed the fact that the 1954 decision in Brown vs. the Board of Education of Topeka, Kansas struck down the “Separate but Equal” Doctrine.

Concerning the issue that dealt with the fact that ethnic communities undergo constant change in population characteristics, geographic locations, and occupations, 34.5% of respondents pointed out that they never talked about this issue, while 27.3% said they rarely discussed it.

Fifty-nine point two percent of respondents indicated that they either rarely or never discussed the fact that an individual's cultural identity is influenced by education, and by whether family members recognize ethnicity as an important part of that identity.

Of those who responded to the survey, over 76% of them indicated that they rarely or never talked about the fact that to understand racism, one must understand that whites see themselves as superior to other racial groups.

Discussion of Sex and Gender

More than half of the subjects who responded to item number twenty-one dealing with the fact that differences between sexes often prevent equality in our society/ said that they rarely or never talked about this issue.

Concerning item number twenty-two, which dealt with the fact that patriarchal arrangements in society have made women subordinate to men, 69.1% of the respondents pointed out that they either rarely or never talked about this subject matter.

Of all the subjects who responded to item twenty-three, dealing with the fact that superior status men have over women, is reflected in the inequities that exist in differences in wages earned by men and women, over 67% indicated that they never or rarely talked about this issue.

Fifty-six point four percent of subjects, who responded to the item dealing with the fact that in our American society, inappropriate gender behavior is reinforced in magazines, on television, and in play with peers, indicated that they never or rarely talked about this issue.

Of those who responded to the item concerning the fact that socialization is the process through which children develop social skills and a sense of self, 52.7% of them indicated that they either sometimes or most of the time discussed this issue with their students.

Almost 64% of those who responded to item twenty-six, the last in this subsection, which dealt with the issue of perpetuators of gender stereotyping, indicated that they either never or rarely talked about this issue with their students.

Discussion of Exceptionalities

Of all those who responded to item twenty-seven concerning what constitutes developmental disabilities, 45.5% said that they never talked about this topic in their classroom, while an additional 20% reported that they rarely discussed this issue.

Almost 51% of respondents indicated that they never discussed the fact that society has a mindset that people with disabilities are children or childlike.

Of all the subjects who responded to item number twenty-nine, dealing with the fact that stereotyping individuals with disabilities denies these individuals their rightful place in society and their self-worth, 43.7% said they rarely or never discussed this matter.

Eighty-five point five percent of subjects who responded to the item that dealt with whether they ever had discussions in their classrooms, of the fact that African-American males and lower socioeconomic background students are over referred to special education classrooms, said they never talked about this problem.

Concerning the fact that developing a sense of cultural awareness is crucial to developing effective interactions with students with disabilities, nearly 71% of respondents indicated that they rarely or never discussed this topic.

Of those who responded to item thirty-two, the last item in this subsection, which dealt with whether or not teachers gave crucial thought to the fact that students with exceptionalities are first and foremost children, when developing lessons, over 55% of them indicated that they either thought about this issue always, or most of the time.

Discussion of Religion

Of all the subjects who responded to item thirty-three that dealt with the fact that as educators, they always reminded themselves that everyone had a right to his or her own religious convictions and practice, 70.9% responded that they always did.

Eighty-four percent of the respondents indicated that they never or rarely discussed the fact that religion may be the most problematic issue for educators to address.

Concerning the issue of whether educators discussed the fact that Western religions emphasize individual control over life, nearly 77% marked never or rarely on that item.

Of those who responded to item thirty-six on the survey, which dealt with the fact that religion, appears to influence patterns of sex roles, marriages, and political attitudes, 62.5% indicated that they never or rarely discussed this issue.

Nearly 54% of the respondents indicated that they discussed the fact that religious behavior is learned either some of the time or most of the time.

Of all the subjects who responded to the last item in this subsection, which dealt with whether they discuss the fact that Judaism is one of the oldest religions known to humanity and provides the historical roots for both Catholicism and Protestantism, 28.6% indicated that they never discussed it, while 26.8% indicated that they always discussed this issue.

Discussion of the Concept of Language

Of all those who responded to item thirty-nine which dealt with the fact that by age five most children will have learned the syntax and arrangement of words in their native language, and know that the words in different arrangements mean different things, 69.1% stated that they either never or rarely talked about this issue with their students.

Sixty-two point five percent of respondents indicated that they never talked about the fact that people in positions of power and positions of status determine what is accepted as Standard English.

Concerning the fact that the English dialect spoken by the vast majority of African-Americans is Black English, African-American vernacular, or Ebonics, 78.6% of those who responded indicated that they never discussed this issue.

Of all the subjects who responded to the item dealing with the issue that Asians would be more likely to maintain more physical distance in normal conversation than those of other cultures, 78.6% pointed out that they never talked about this multicultural issue.

Of those who responded to the survey, 62.5% of them indicated that they never talked about the fact that an English as a Second Language program is one in which minority students must rely exclusively on English for teaching and learning.

On the last item in this subsection, dealing with the fact that as educators, teachers should talk about how they should operate as bicultural educators when culturally diverse students are present, and that they should be more receptive of what is occurring within the classroom nonverbally, 80.3% indicated that they either never or rarely discussed this fact.

Summary of Findings

Results from this study indicate that there was quiet a range in terms of the degree to which teachers implemented multicultural education concepts in their teaching. Below is a brief summary of the researcher's findings:

- The bulk of the 56 teachers who responded to the survey had Bachelors degrees. Only one had an Associate's degree, while another held a Doctoral degree.
- About 40% of the respondents had less than ten years of teaching experience.
- A majority of those who responded to the survey seemed to indicate that they were not very familiar with the multicultural concepts covered in the research survey instrument.

- A major portion of the respondents indicated that they rarely or never discussed issues dealing with socioeconomic status concepts.

- Perhaps the most touchy topic teachers indicated spending the least amount of time on with their students, were the concepts of race and ethnicity. More than 60% of them indicated that they rarely or never talked about issues involving cases such as the Brown vs. Board of Education of Topeka Kansas of 1954.

- Almost 70% of the respondents indicated that they either rarely or never talked about topics dealing with sex and gender. In fact, quiet a number of them indicated that those two subjects should be dealt with within each family unit.

- Based upon the findings, about half of the respondents indicated that they never talked about exceptionalities, while about 20% of them reported that they rarely discussed it at all.

- Eighty-four percent of those who responded to the survey indicated that they never or rarely discussed religion, since they saw it as a problematic issue for educators.

- More than half of those who responded denoted that they never talked about the fact that people in positions of power and status determine what is accepted as Standard English.

- Almost 80% of the respondents pointed out that they never discussed the issue of Black English or Ebonics, as a cultural concept.

- Sixty-seven percent, of those who responded to the item dealing with age, suggested that they either never or rarely spoke about the fact that prejudices are behaviors learned from one's parents.

- A little over 77% of the respondents denoted that they never or rarely talked about the fact that research shows that African-American youths are more likely to be arrested, convicted, and incarcerated than white youths for the very same offense.

Conclusions

Because of the wide variety of opinions expressed by the subjects involved in the study, it was very difficult to make definitive conclusions regarding how most of the respondents felt in general terms. For this reason, the researcher made a concerted effort to compile some general opinions into a few conclusions which are stated below:

- Religion seemed to be a big stumbling block to teachers' freedom to implement multicultural education concepts.

- Lack of academic preparation or formal training in the discipline of multicultural education seemed to be another stumbling block.

- Time constrains were cited as a significant factor in preventing teachers from spending adequate time on multicultural topics.

- Philosophical differences concerning what should be taught in this discipline and what should not be seemed to be a significant factor.

- What seemed to be in the opinion of the respondents' inappropriateness of topics included in the research study, also seemed to be an important factor in their decisions for not including these topics in their classroom curricula.

- Many teachers felt that the issues raised in the survey items were too advanced for the age group of pupils they taught.

Implications for Catholic School Educators

This study has a number of implications for Catholic school teachers, some of which are listed below:

- This study would help dioceses to develop more culturally sensitive curricula for learners.

- The study would help classroom teachers to integrate new students from diversified cultural backgrounds into existing classrooms.

- The enrichment of students' experiences could be achieved by using findings from this study.

- The results of this study could enable educators to secure funding from their dioceses for multicultural enrichment programs.

Recommendations for Further Research Studies

Based upon the findings and conclusions, in this research study, the researcher would like to present some recommendations as to what could be done by classroom teachers, administrators, and school communities to enhance their Multicultural Education programs. The recommendations are follows:

- This research study can be used by researchers to further understand the need to implement multicultural education concepts in the classroom.

- Because a number of participants expressed lack of confidence in the area of multicultural education, the researcher recommends that staff development activities such as workshops,

whose major objectives are to prepare teachers in handling multicultural topics, be included in staff development programs.

- While not a single respondent in this study indicated lack of funding as an issue, the researcher strongly feels that Catholic school communities should set aside funds specifically earmarked to enable teachers to purchase teaching materials and organize multicultural education field trips.

- The researcher recommends that Catholic school administrators be directly involved in teachers' efforts to organize, prepare, and implement multicultural education learning experiences for students.

- It is recommended that Catholic grade school administrators encourage classroom teachers to include multicultural education concepts in their teaching activities, objectives, and goals.

Teachers are encouraged to connect their students with other students in schools located within their own state, nation, and international communities. This can be accomplished by encouraging schools to establish relationships with schools throughout the world

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INVESTING IN TELECOMS IN TRANSITION ECONOMIES: CONCEPTUAL FRAMEWORK FOR CROSS COUNTRY COLLABORATION AND AN ILLUSTRATIVE EXAMPLE

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ABSTRACT

In the light of the current economic crisis, cross country collaboration represents an attractive opportunity for Transition Economies (TE) to pursue in order to counter the diminishing levels of economic growth and to obtain additional sources of revenue. One of the sources of economic growth, namely, investments in Information and Communication Technologies (ICT), have been shown to contribute reliably to the economic bottom-line in the context of the developed countries. Unlike their developed counterparts, however, TEs do not represent a homogenous group, and it is not clear how a given TE can identify a pool of the suitable collaborators in the area of investments in ICT, and then to determine the type of the collaborative projects to pursue. As a solution to this problem we suggest a methodological framework allowing for TEs, first, to determine an appropriate pool of possible partners, and then to determine an appropriate type of the collaborative effort. We focus on the subset of investments in ICT, namely, investments in Telecoms and illustrate the proposed framework in the context of Transition economies in Europe and the former Soviet Union.

Keywords: Transition Economies, Investments in Telecoms, Cross Country Collaboration, Data Envelopment Analysis, Conceptual Framework, Multivariate Regression, Cluster Analysis

Introduction

Current economic situation makes a cross-country collaboration a viable opportunity for economies of the world to pursue new sources of revenue and economic growth. Such collaborative opportunities are especially attractive for *Transition Economies* (TE), representing a set of countries transitioning from a centrally planned to a market-driven economy (Ollman, 1997; Myers, 2004), for these countries have

lower level of available economic resources than their developed counterparts. It is not clear, however, what kind of guidelines TEs should follow in order to enter into a beneficial collaborative venture. We suggest, that two questions play important role in the decision making process regarding the cross-country collaboration. First, a decision maker must identify a potential pool of the viable collaborators. Second, a decision maker must identify, based on the choice of the potential collaborator, appropriate types of collaborative efforts. The context of TEs differs from a relatively homogenous environment of developed economies (Arcelus and Arocena, 2000; Barro and Sala-i-Martin, 1995; Sala-i-Martin, 1996), and depending on the level of industrialization (World Bank, 2004), some TEs are close to the developed, and some TEs are closer to the developing, or even least developed, countries. This heterogeneity of the context of TEs makes it difficult to intuitively suggest a potential group of peers that present a good fit in terms of the area of possible collaboration, as well as to suggest what such possible collaborative effort might be. Hoskisson et al. (2000) warns that even within the same geographical region economies of the same type could significantly differ in terms of their regime, starting points of and paths to transition, and the degree of the achieved progress. The purpose of the current investigation is to develop a conceptual framework of the cross country collaboration, and to demonstrate the developed framework in the context of the illustrative example. The focus of this investigation is on the subset of investments in Information and Communication Technologies (ICT), namely, investments in Telecoms, and the context of the illustrative example is a set of Transition Economies of Central Europe and Former Soviet Union. The broad research problem of this study can be formulated as follows:

> *What is a structure of a decision making process and what is a set of decisive factors associated with the entry of TEs into a cross country collaborative venture associated with investments in Telecoms?*

For the purposes of this inquiry we assume that the purpose of the collaboration is economic growth, including improvement in production of revenue. Consequently, our research problem can be restated in the form of the following three questions:

1. How to assess a state of TE for the purposes of cross country collaboration associated with investments in Telecoms?
2. What are some of the types of the collaborative efforts associated with investments in Telecoms?
3. How to map a state of collaborating parties to an appropriate type of the collaborative effort?

Before we proceed with presenting the answers to the stated above questions in the form of the cross country collaborative framework, we would like to provide a justification of the research problem of this study. Because we are interested in the case of cross country collaboration with the purpose of economic growth, this problem, essentially, represents a capacity relief project aiming to provide a target relief period in the form of a number of years of a resulting economic growth. The subsequent issues associated with the undertaking of such effort, such as how to optimally size the projects in terms of the capital investments given the budgetary constraints (Lorie and Savage, 1955; Weingarten, 1963; Weingartner, 1966; Weingartner, 1966b; Kaplan, 1966), what discount rate to apply (Baumol &

Quandt, 1965; Elton, 1970), and what is the appropriate form of the models to use (Bernhard, 1969; Carleton, 1969; Meyers, 1972; Tobin, 1999) have been discussed. Recently, Tobin (2002) demonstrated that the problem of optimal capacity placement in deregulated telecommunication industries under budgetary constraints can be reduced to a "two-dimensional implicit search over two multipliers: one that governs technology selection and one that governs project sizing" (p.42). However, the preceding problems of how to identify an appropriate pool of the candidate projects (i.e. memberships in cross country collaborations), and how to determine suitable alternatives for such projects (i.e. types of cross country collaborative efforts) have not been addressed. Thus, the research problem we are addressing in this paper is new, and has not been previously discussed in the literature.

In order to justify the proposed collaborative framework we offer a brief overview of the relevant literature next.

Overview of the Previous Findings

The research community is an agreement that there exist multiple factors that affect the relationship between investments in ICT and economic outcomes (Dewan and Kraemer, 1998; 2000). One of the factors is the size of the ICT investment and overall accumulated ICT capital, which should be above a certain threshold to manifest itself at the detectable level (Oliner and Sichel, 2000; Jorgenson, 2001; Jorgenson and Stiroh, 2000; Council of Economic Advisors, 2001). Samoilenko and Osei-Bryson (2008), however, demonstrated that increasing the level of the production of revenues from Telecoms in the context of TEs is not a matter of simply increasing the level of investments, but is rather dependent on the improving the effectiveness and the efficiency of the process of the conversion of investments into revenues. Beside the efficiency, the relationship between investments in ICT and economic outcomes are also affected by the presence of the complimentary to ICT factors that are able to significantly increase benefits provided by ICT (Black and Lynch, 1997; Francalanci and Galal, 1998; Tallon, Kraemer and Gurbaxani, 2000; Devaraj and Kohli, 2000; Brynjolfsson and Hitt, 2000; Brynjolfsson, Hitt and Yang, 2000; Ramirez, 2003; Arvanitis, 2005; OECD, 2003). Researchers have long argued that in the context of developing economies complementary investments in human capital are essential to the realization of economic outcomes from technology investments (Nelson and Phelps, 1966; Parente and Prescott, 1994; Krueger and Lindahl, 2001; Benhabib and Spiegel, 1994), and many investigators now agree that insufficient attention to complementary investments in human capital is inhibiting the potential impact of ICT investments on the macroeconomic goals of developing and transition economies (Kraemer and Dedrick, 2001; Pohjola, 2002). The scarcity of highly skilled technology workers in many of these countries is seen hindering the rate of ICT-related innovation and productivity improvements (Bollou, 2006; OECD, 2004; van Ark, et al, 2004), for as ICT expansion increases, significant technological changes result causing increased demand for technically specialized labor (Siegel et al, 1997; Bresnahan, et al, 2002). The political institutions of TEs, differing in their degree of the political commitment for investor protection, also seem to impact the diffusion of the telecommunication technologies and their economic outcomes (Andonova and Diaz-Serrano, 2007). Based on this brief review of the literature, we suggest that a state of economy in terms of its capability to translate investments in ICT into economic growth

can be represented by the following four factors. The first factor is the level of investments in ICT and overall accumulated ICT capital. The second factor is the efficiency of the process of conversion of investments in ICT into revenues. The third factor is the complementarity of ICT workforce and investments in ICT Finally, the fourth factor is quality of the political institutions and the resulting level of investor protection.

Methodological Framework

Description of the Phases of the Framework

Phase 1: Determining the State of a Transition Economy (TE)

The purpose of the first phase of our framework is to formulate the criteria that could be used for determining a state of a given TE in the terms that are relevant to the production of revenues from investments in Telecoms. Based on the review of the literature offered above, we suggest the following criteria provided in Table 3.1 below.

Table 3.1: Assessment Criteria for the State of TE

Criterion	Purpose	Suggested Variable	Possible Values
Level of investments in Telecoms	To assess the relative size of the annual capital investments	Annual Investments in Telecoms	High, Low (relative to the sample)
Efficiency of conversion of Investments into Revenues	To assess the level of relative efficiency of TE in terms of conversion of investments into revenues	Score of the relative efficiency	Efficient, Inefficient (relative to the sample)
State of the Telecom Labor	To identify the impact of the workforce on the utilization of investments	Complementarity between the Level of Investments and Level of Full-time Employees	Positive, Negative
Level of investor protection	To identify the state of the investment protection environment	Quality of the political system of the country	High, Low (relative to the sample)

It seems well established by now that in order to see the result of investments in ICT at the macroeconomic bottom line the level of investments must be sufficiently high, complemented by the investments in the skilled workforce, and also must result in the high level of revenues. Consequently, based on the suggested above criteria we can classify a given TE as being a *Leader*, or a *Host*. We define the *Leader* as a TE with the high level of investments in Telecoms, high level of investor protection, and the workforce which positively impacts the outcome of investments. Conversely, we define the *Host* as TEs with the low level of investments in Telecoms, low level of investor protection, and the workforce which negatively impacts the outcome of investments. This categorization, essentially, allows us to

outline within a group of TEs a subgroup with a positive link between investments in ICT and their macroeconomic outcome (e.g., the *Leaders*), and a negative link (e.g., the *Hosts*). The last criterion, namely, the efficiency of a TE, allows us to add an additional sub-categorization. The resulting taxonomy of the resulting states of TEs is presented in Table 3.2 below.

Table 3.2: Possible States of TEs

State of TE	Level of Investments	Efficiency of Utilization of Investments	State of the Telecom Labor	Level of Investor Protection
Efficient Leader	High	High	Positive	High
Inefficient Leader	High	Low	Positive	High
Efficient Host	Low	High	Negative	Low
Inefficient Host	Low	Low	Negative	Low

Let us recall that we formulated the first research question of our investigation as follows:

> *How to assess a state of TE for the purposes of cross country collaboration associated with investments in Telecoms?*

The results of Phase 1 allow us to answer this research question in the following way:

> *A state of TE for the purposes of cross country collaboration associated with investments in Telecoms can be assessed by means of four criteria, namely, the Level of investments in Telecoms, an Efficiency of conversion of Investments into Revenues, the State of the Telecom Labor, and the Level of investor protection.*

In the next phase of our framework we offer a possible classification of the types of collaborative efforts.

Phase 2: Classifying a Type of a Collaborative Effort

We suggest that there exist two general scenarios of possible cross-country collaborative efforts, which we name *Perfective* and *Expansive*. The *perfective* collaborative effort serves the primary purpose of further improving the effectiveness and efficiency of the already established link between investments in Telecoms and their economic outcomes; we suggest that this type of effort takes place between two *Leaders*. The *expansive* collaborative effort, on other hand, serves the primary purpose of expanding the economic outcome of investments in Telecoms, and establishing the link between investments in Telecoms and their economic outcomes; we suggest that this type of the collaboration takes place between a *Leader* and a *Host*. The proposed generic collaborative models are summarized in Table 3.3. It is also reasonable to suggest that *expansive* collaborative effort may gradually be transformed into *perfective* one, if the *Host* at some later point will be reevaluated as a *Leader*. We also suggest that *Host*-

to-*Host* collaboration is not advisable, for neither participant would have a sufficient level of investments, infrastructure, or an available human capital in order to lead the effort, or to participate in a cross-country collaborative effort with mutually beneficial results. In this phase we use an intuitive classification of collaborative projects in terms of the capital intensity to represent a possible environment of the cross country collaboration. We also assume that capital intensity is reflective of technological sophistication of a project in such way, that low capital intensity is reflective of a low level technological sophistication of the project, while high capital intensity reflects the high level of sophistication of the project.

Table 3.3: Generic Cross Country Collaborative Models

Type of a Collaborative Effort	Capital Intensity of a Collaborative Project	Requirements
Expansive	Low	Investments in Telecoms
Expansive/Perfective	Medium	Investments in Telecoms + Likely Investments in skilled Telecom Labor
Perfective	High	Investments in Telecoms + Investments in skilled Telecom Labor

Previously, we formulated the second research question of our study as follows:

> *What are some of the types of the collaborative efforts associated with investments in Telecoms?*

The results of Phase 2 allow us to answer this research question in the following way:

> *Some of the types of the collaborative efforts associated with investments in Telecoms are expansive effort, characterized by a low level of capital intensity, expansive/perfective effort, characterized by the medium level of capital intensity, and perfective effort, characterized by the high level of capital intensity.*

The next phase of our framework is dedicated to mapping the states of TEs to the suggested types of cross-country collaborative efforts.

Phase 3: Mapping the State of Collaborating Parties to an Appropriate Type of Collaborative Effort

In the third phase of our framework we suggest a possible pairing of the collaborative efforts and participating parties. The summary of the results presented in Table 3.4 below.

Table 3.4: Possible Mappings of the States of TEs to the Types of the Collaborative Efforts

State of TE	High CI	Medium CI	Low CI
Required Pre-conditions	Technologically sophisticated infrastructure High level of skilled workforce High level of efficiency High level of investor' protection	Beginning to develop sophisticated infrastructure Increasing level of skilled workforce Efficient utilization of small levels of investments High level of investor protection	Basic infrastructure Low level of skilled workforce Low level of efficiency of utilization of investments Low level of investor protection
Possible Participants	Efficient Leader & Efficient Leader	Efficient Leader & Inefficient Leader/ Efficient Host	Inefficient Leader & Efficient/Inefficient Host

Earlier, we formulated the third research question of our investigation as follows:

How to map a state of collaborating parties to an appropriate type of the collaborative effort?

The results of Phase 3 allow us to answer this research question in the following way:

A state of collaborating parties can be mapped to an appropriate type of the collaborative effort based on the matching of the values of their assessment criteria to the values of the required preconditions of the collaborative effort.

In the next part of the paper we provide an overview of the steps of the methodology that is used to assess the state of TEs for the purposes of cross country collaboration associated with investments in Telecoms.

Description of the Procedure for Phase 1

Step 1.1: Find Groups of Peers among TEs

To assess the state of TEs within the group of its peers in terms of the level of investments in ICT and overall accumulated ICT capital we suggest using Cluster Analysis.

Clustering is a popular data mining technique (e.g. Rai et al., 2005; Okazaki, 2005; Wallace et al., 2004; Cristofor and Simovici, 2002; Dhillon, 2001; Ben-Dor and Yakhini, 1999; Huang, 1997; Benfield and Raftery, 1992) that involves the partitioning of a set of objects into a useful set of mutually exclusive clusters such that the similarity between the observations within each cluster is high, while the similarity between the observations from the different clusters is low. There are different reasons for doing clustering, one of which is finding a set of natural groups (i.e. segmentation), and the corresponding description of each group. This is relevant if there is the belief that there are natural groupings in the data.

Our interest in this paper is in identifying natural groups of TEs based on their levels of investments in ICT. There are numerous algorithms available for doing clustering. They may be categorized in various ways such as: hierarchical (e.g. Murtagh, 1983; Ward, 1963) or partitional (e.g. Mc Queen, 1967), deterministic or probabilistic (e.g. Bock, 1996), hard or fuzzy (e.g. Bezdek, 1981; Dave, 1992).

W suggest using a two-step approach that involves using a partitional approach to generate the maximum possible number of clusters followed by the application of an agglomerative clustering method to combine pairs of clusters until the specified minimum number of clusters is obtained. Given our interest in determining whether a set of TEs is homogenous or heterogeneous, we will use a user-specified threshold on outlier size to assess whether a given partition contains outlier clusters, and also use expert knowledge to further assess whether the partition is meaningful. A cluster will be considered an outlier if the percentage of the objects that it includes is less than ten percent of the objects in the entire dataset. We are not claiming that this is the only or always best approach, particularly since for a given dataset it is never clear which approach is the most appropriate. Benefit of our approach, however, is that it allows for augmenting a context-independent solution with the context-dependent knowledge of a domain expert.

We assume that at the end of the clustering process each TE is assigned to a specific cluster, and so each TE has an additional cluster identifier attribute (e.g., *Leader*, *Host*).

Step 1.2: Assess Relative Efficiency

To assess the level of relative efficiency of TE in terms of conversion of investments into revenues we suggest using Data Envelopment Analysis. DEA, which has been extensively used in IS research (Banker, Kauffman & Morey, 1990; Banker, Datar & Kemerer, 1991; Banker and Kauffman, 1991; Banker and Kemerer, 1992; Banker and Morey, 1996 ;Baker and Talluri, 1997; Chen and Zhu, 2004; Chen, Liang,Yang & Zhu, 2006; Doyle and Green, 1994; Kivijärvi and Saarinen, 1995; Kumar, 1990; Lee and Menon, 2000; Li and Ye, 1999; Mahmood, 1994; Pare and Sicotte, 2001; Shao and Lin, 2001; Sueyoshi and Baker, 1994; Wang, Gopal & Zionts, 1997), is a nonparametric method of measuring the efficiency of a decision-making unit (DMU). Any collection of entities that operates with the same set of the inputs and produces the same outputs, be it a firm or a country, could be designated as DMUs. This method, which is nonparametric in the sense that DEA is entirely based on the observed input-output data, was originated as a collection of techniques for measuring the relative efficiency of a set of DMUs with unknown or unavailable price values for data inputs and outputs (Sengupta, 1996). While it is beyond the scope of this paper to provide an overview of the theory behind the computations in DEA, we would like to direct the interested reader to the comprehensive presentation of the theoretical underpinnings of the DEA by Dula (2002b).

One of the benefits of DEA lies in its flexibility, for a researcher could take advantage of several models and orientations that this method has to offer. Thus, for example, the choice of a given DEA model

would depend on the underlying economic assumptions about the returns to scale (e.g., constant, variable, decreasing) of the process that transforms the inputs into the outputs (Dula, 2002a). In our study we employ DEA models generated under the assumption of constant return to scale (CRS). The three commonly mentioned orientations of DEA model are the following: input-oriented, output oriented, and base-oriented (Charnes, Cooper, Lewin and Seiford 1994). An input-oriented model is concerned with the minimization of the use of the inputs for achieving a given level of the output. Output-oriented DEA model, on the other hand, is concerned with the maximization of the level of the outputs per given level of the inputs. The base-oriented model, unlike the first two, has dual orientation and is concerned with the optimal combination of the inputs and outputs. Therefore, this type of DEA model deals with the efficiency of the input utilization and efficiency of the output production, having control over both inputs and outputs within the model.

In this research, we advocate using both the input-oriented and output-oriented DEA models. We reason that a decision- maker might find it useful to gain the insights into the annual levels of efficiency of the utilization of the resources (e.g., investment in ICT), as well as the levels of efficiency of the production of revenues.

Step 1.3: Asses the State of the Labor Force

To identify the impact of the workforce on the utilization of investments in ICT we suggest using Multivariate Regression. During this step we are interested in determining a presence of the interaction effect between the level of ICT labor and the level of investments in Telecoms. In order to do so, we will be investigating the production function of Neoclassical Growth Accounting:

$$\mathbf{Y = \mathit{f}\,(A, K, L),}$$

where **Y** = output (most often in the form of GDP); **A** = total factor productivity TFP; **K** = capital investments in ICT (e.g. Telecoms); **L** = ICT Labor (full-time Telecom staff).

By taking the logarithm of this production function, the following formulation could be obtained:

$$\log Y = \log A + \alpha \log K + \beta \log L$$

Extension to the given above production function, called the Transcendental Logarithmic (*translog*) production function, takes the following form:

$$\log Y = \beta_0 + \beta_K * \log K + \beta_L * \log L + \beta_{K*K} * (\log K)^2 + \beta_{L*L} * (\log L)^2 + \beta_{L*K} * \log K * \log L + \varepsilon$$

The translog production function is more flexible in the sense that it allows testing for the presence of the interactions between the variables, where the test for the presence of the interaction would involve testing of the following hypothesis:

H0: β_{L*K} is not statistically discernible from 0 at the given level of α

By stating the null hypothesis **H0: $\beta_{L*K} = 0$,** we can test for the presence of interaction between the two variables, Capital investments in Telecoms and full-time Telecom staff; furthermore, we can assess the direction of interaction (i.e., positive or negative) by looking at the sign of β_{L*K}.

The interpretation of the interaction term in MR, however, is not as straightforward as the interpretation of the slope coefficient of an independent variable; we direct an interested in the subject of interpreting the interactions in MR reader to such sources as Jaccard et al. (1990), Aiken and West (1991), and Braumoeller (2004). However, for the purposes of this research, we are only interested in testing the null hypothesis of no interaction between the Capital investments in Telecoms and investments in full-time Telecom staff, and in determining the direction of the effect.

Step 1.4: Assess the Level of Investor Protection

The purpose of the last step of Phase 1 is to take into consideration a possible effect of the political institutions on the diffusion of the telecommunication technologies (Andonova and Diaz-Serrano, 2007), and see if subsets of TEs discovered in Step 1 differ in terms of level of political risks. It is reasonable to suspect that countries with the lower level of political risk shall do better in terms of attracting the investments and converting them into revenues. To compare the subsets of TEs in this regard, we will use averaged values of POLKON. This variable, which ranges from 0 to 1, was chosen because it is "an objective and conservative measure among the available indices of political risks" that is interpreted as an "objective measure of the degree to which investors' interests are protected by a given polity" (Andonova and Diaz-Serrano, 2007).

Illustrative Example

Description of the Data

The data for this study were obtained from the *World Development Indicators* database (web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS), which is the *World Bank*'s (web.worldbank.org) comprehensive database on development data, and the *Yearbook of Statistics* (2004)(www.itu.int/ITU-D/ict/publications*),* which is published yearly by *International Telecommunication Union (ITU)(* www.itu.int*).* To minimize the heterogeneity of our sample we wanted to use TEs that belong to the same group and started the transition at about the same time. We have chosen twenty-five countries classified as *Transition economies in Europe and the former Soviet Union* by IMF (2000). After the overview and analysis of the data, we concentrated on the following 18 transition economies: Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Czech Republic, Estonia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Poland, Romania, Slovakia, Slovenia, and Ukraine. Unfortunately, data on other 7 TEs that we wanted to include in our analysis, namely, Croatia, FYR Macedonia, Georgia, Russia, Tajikistan, Turkmenistan, Uzbekistan, were not available, or contained too many missing data points to be useful in the analysis. Overall, for our 18 TEs we were able to construct the data set covering the period from 1993 to 2002.

Illustration of the Methodological Framework

Phase 1:

Step 1.1: Find Groups of Peers

To perform Cluster Analysis (CA) we used Enterprise Miner software package (produced by SAS Institute, version 9.1). In order to account for the possible bias in the representing TEs in terms of their level of investments in Telecoms, we decided to create a multiple ratio-based versions of the variable to account for the differences in the size of the country and the country's economy. The first ran of EM used "Automatic" setting and produced 5-cluster solution. By using a rule of thumb of having clusters with no less than ten percent of overall data points, we gradually reduced the number of clusters to 2. The membership of each cluster is listed in Table 4.1 below.

Table 4.1: Membership of the 2-cluster solution

Cluster	**The *Hosts***	**The *Leaders***
Membership	Albania (1993-2002)*, Armenia (1993-2002)* Azerbaijan (1993-2002)*, Belarus (1993-2002)* Bulgaria (1993-2001)*, Estonia (1993) Kazakhstan (1993-2002)*, Kyrgyzstan (1993-2002)* Latvia (1993, 1996), Lithuania (1993-1998) Moldova (1993-2002)*, Romania (1993-2002) * Slovakia (1993,1994, 1999), Ukraine (1993-2002)*	Bulgaria (2002), Czech Rep (1993-2002)* Estonia(1994-2002)*,Hungary(1993-02)* Latvia (1994, 1995, 1997-2002)* Lithuania(1999-2002), Poland(1993-02)* Slovenia (1993-2002)* Slovakia(1995-1998, 2000-2002)
Level of Investments	**Low**	**High**

Results of CA demonstrate that some of TEs have all of their data points for 10-year period in the same cluster, while other TEs share the membership depending on the year. While continuing our data analysis using the complete sample of 18 TEs, we will concentrate on the "permanent residents" of each cluster, those TEs marked with an asterisk.

Step 1.2: Assess Relative Efficiency

To perform DEA we used the software application "OnFront," version 2.02, produced by Lund Corporation (www.emq.com). The main goal that we were pursuing in performing DEA was to find out how efficient the 18 transitional economies were in purely converting investment inputs into the revenue outputs. Therefore, we did not include any other types of inputs or outputs such as those related to infrastructure, capabilities, utilization, etc. Once the scores were obtained, we separated the results into two clusters identified in Step 1 and averaged the scores. Results are presented in Table 4.2 below.

Table 4.2: Summary of the Results of DEA

Average Efficiency Score	"Leaders"	"Hosts"	Difference	Difference %
CRS, Input-Oriented Model	**0.82**	**0.70**	**0.12**	**16.61%**
CRS, Output-Oriented Model	**1.30**	**1.77**	**-0.47**	**-26.54%**

The results of DEA suggest that the *Leaders*, on average, are 16 % more efficient in terms of the utilization of investments, and the *Hosts* are 26 % less efficient than the *Leaders* in terms of the production of outputs. To determine the efficiency of the TEs within each cluster, we used the following rule of thumb. If, over period of 10 years, a given TE has achieved a perfect score of "1" seven or more times, we labeled such TE "efficient." The results of such sub-categorization are presented in Table 4.3.

Table 4.3: Sub-Categorization of the *Leaders* and *Hosts*

Transition Economy	Group	Sub-Categorization
Hungary, Slovenia	The Leader	Efficient
Czech Rep., Estonia, Latvia, Poland	The Leader	Inefficient
Albania, Kyrgyz Rep., Moldova	The Host	Efficient
Armenia, Belarus, Bulgaria, Kazakhstan , Romania, Ukraine	The Host	Inefficient

Step 1.3: Assess the State of the Labor Force

We used SAS Enterprise Miner to perform Multivariate Regression (MR). Following three variables were used in MR analysis:

1. GDP(in current US $)
2. Annual telecom investment(% of GDP)
3. Full-time telecommunication staff (% of total labor force).

In this section, we present the results of the data analysis. The interaction term is given in the form as it appeared in the actual model (column "Interaction Term in the model"). The column "Estimate" provides a value of the parameter estimate for the β an interaction term. The last column, labeled "Pr > |t| at 95%", provides a 2-tailed P-value used in testing of our null hypothesis that $\beta_{K*L} = 0$. We test the hypothesis at 95% confidence level, or, as it is commonly expressed, at a level of $\alpha = 0.05$. As a result, a coefficient having a p-value of 0.05 or less would be considered statistically significant, which would allow us to reject the null hypothesis of $\beta_{K*L} = 0$ at the level of $\alpha = 0.05$. Results of the data analysis are presented in the table below.

Table 4.4: Results of the Assessment of the State of the Labor for the *Leaders* and the *Hosts*

Interaction Term in the model	Cluster	Estimate (β_{K*L})	Pr > |t| at 95%	State of Telecom Labor
ANNU_EL1*FULL_2KW Log (Annual Telecom Investment)*Log(Full-time Telecom Staff)	**Leaders**	**57.4954**	**<.0001**	**Positive**
ANNU_EL1*FULL_2KW Log (Annual Telecom Investment)*Log(Full-time Telecom Staff)	**Hosts**	**-2.1280**	**0.0087**	**Negative**

Based on the results of the interaction analysis, we can state that the interaction effect between the variables *Annual Telecom Investment* and *Full-time Telecom Staff* is statistically significant; this allows us to reject the null hypothesis of no interaction. Moreover, we also determined that the estimated values of β_{K*L} for this term change the sign. This change suggests that the different levels of the interacting variables could produce different combined effect.

For the *Hosts*, the results suggest that this group of TEs were having a level of the full-time ICT staff that was too high for their level of investments in Telecoms. This interpretation suggests that additional investments in Telecoms should not be accompanied by the increase in the level of the full-time Telecom staff. For the *Leaders*, conversely, the results of MR suggest that the increase in the level of investments in ICT should be accompanied by the increase in the level of full-time ICT staff, for the complementary effect of these two variables on the macroeconomic bottom-line is positive.

At this point, it cannot be determined whether the full-time Telecom staff of the *Leaders* is more productive than that of the *Hosts*. However, we can obtain some insights regarding this matter by calculating a ratio of investments in Telecoms handled per full-time Telecom staff. A comparison of the two ratios demonstrates that the *Hosts* invest 43 % less per Telecom worker, quite possibly because the workforce of the *Hosts* is less efficient or effective than that of the *Leaders*. The results of the comparison presented in Table 4.5 below.

Table 4.5: Comparison of the *Leaders* and the *Hosts*, Investments per Telecom Staff

Group	Full-time Telecom Staff (% of labor force)	Annual Telecom Investment (% of GDP)	Ratio of Annual Telecom Investment to Full-time Telecom Staff
Hosts	0.4497	0.5861	1.3031
Leaders	0.5228	1.1905	2.2770

The implication of this is quite clear: in the case of collaborative venture taking place at the *Host* country, any investments would require greater number of full-time Telecoms staff than in the case if investments were made at the *Leader* country.

Step 1.4: Assess the Level of Investor Protection

In order to assess the level of investor protection and see if the *Leaders* differ from *Hosts* in terms of the level of political risks, we compared the *Leaders* and *Hosts* in terms of the averaged values of POLKON variable. The results of the comparison presented in the last column of Table 4.6. Again, we can see that the *Leaders* also differ favorably from the *Hosts* in this regard.

Table 4.6: The *Leaders* and *Hosts* in Terms of the Level of Investor Protection

Group	Value of POLKON , Average	Level of investor protection
Hosts	0.25	Low
Leaders	0.42	High

Phase 1: Conclusion

The results of the assessment of the states of TEs in our sample are summarized in the table below.

Table 4.7: Summarized Results of Phase 1

State of TE	Transition Economies
Efficient Leader	Hungary, Slovenia
Inefficient Leader	Czech Republic , Estonia, Latvia, Poland
Efficient Host	Albania, Kyrgyz Republic, Moldova
Inefficient Host	Armenia, Belarus, Bulgaria, Kazakhstan , Romania, Ukraine

Phase 2:

In this phase we adapt four generic network models outlined by Landi and Raisinghani (2004) to represent a possible environment of the cross country collaboration. The summarized models provided in Table 4.8 below. We must note that the suggested four generic models are used because they are formulated in terms of the capital intensity. Our framework is independent from the framework suggested by Landi and Raisinghani (2004), but it is dependent on some sort of classification of the projects in terms of the capital intensity.

Table 4.8: Generic Cross Country Collaborative Models (adapted from Landi and Raisinghani (2004))

Type of a Collaborative Effort	Type of a Network Model	Description	Requirements
Expansive	Low Capital Intensity	IP services only	Investments in Telecoms
Expansive	Medium Capital Intensity	IP services + International voice	Investments in Telecoms + Likely Investments in skilled Telecom Labor
Perfective	High Capital Intensity	IP services + International voice + Select local PSTN Voice	Investments in Telecoms + Investments in skilled Telecom Labor
Perfective	Very High Capital Intensity	Full Suite of Local to Global Services	Investments in Telecoms + Investments in skilled Telecom Labor

Phase 3:

In the last phase of our framework we concerned with mapping of TEs to the general types of collaborative models; the results provided in Table 4.9 are based on matching of the values of assessment criteria of TEs to the values of the requirements of each of the collaborative model.

Table 4.9: Mapping of TEs to the Generic Collaborative Models

Collaboration Type	Capital Intensity	Collaborating parties
Expansive	**Low**	(Czech Republic , Estonia, Latvia, Poland) and (Armenia, Belarus, Bulgaria, Kazakhstan , Romania, Ukraine, Albania, Kyrgyz Republic, Moldova)
Expansive	**Medium**	(Albania, Kyrgyz Republic, Moldova) and (Czech Republic , Estonia, Latvia, Poland)
Perfective	**High**	(Czech Republic , Estonia, Latvia, Poland) and (Hungary, Slovenia)
Perfective	**Very High**	Hungary, Slovenia

The outcome of the last phase of our framework allows for generation of the set of possible collaborative projects, and, given the context-specific conditions to each project, a set of alternatives for each project. Example of the possible projects and their hypothetical alternatives is presented in Table 4.10.

Table 4.10: Example of Set of Possible Collaborative Projects and Alternatives

Collaboration Type	Capital Intensity	Collaborating parties	Project (hypothetical)	Alternatives for the project (hypothetical)
Perfective	**High**	Hungary & Czech Republic	A	1,2,3
Perfective	**High**	Hungary & Estonia	B	1,2
Perfective	**High**	Hungary & Latvia	C	1
Perfective	**High**	Hungary & Poland	D	1,2,3

As a result, TE can construct a table of the potential collaborative projects and their alternatives. This can serve as a scenario for the capacity relief project planning problem, which can be solved, given additional information pertaining to the specifics of each alternative of a project, by using the existing solution procedures (e.g. Tobin (2002)).

Conclusion

The purpose of this investigation was to propose and test a methodological framework allowing TEs to identify potential partners and types of collaborative projects associated with investments in Telecoms. In the absence of general theory dealing with the success of investments in ICT, any framework associated with such subject is bound to draw its best support from the results of empirical investigations. Consequently, we cannot lay any claims regarding the validity and generalizability of the proposed framework beyond the context of TEs. However, the support provided by current research findings associated with the impact of investments in ICT offers us, in the absence of the theory, a "second best" alternative for substantiating a soundness of our framework. Being grounded in the results of the empirical studies also brings a limitation associated with the scarcity of the research in this area. Consequently, we must acknowledge that the set of criteria chosen for assessing the state of TEs is limited to the known, general factors, and fails to account for other context-specific variables that may reflect underlying heterogeneity of TEs. Another limitation of the proposed framework is associated with the categorization of the ICT projects in terms of *perfective* and *expansive* efforts. We must acknowledge a presence of another type of the collaborative effort, namely, *developmental*; such projects are commonly take place for the purposes of bridging the "digital divide" and pursue an important goal of bringing the laggards and late starters up to speed. We consider this type of collaborative efforts to be outside the scope of the current investigation. Finally, our framework is limited in regard to identifying a set of relevant pre-conditions of the collaborative projects; this limitation stems from our classification of the projects solely in terms of their capital intensity. Keeping the limitations of our investigation in mind, it is reasonable to view our work not as an end result, but rather as a foundation on which investigators could build on in future studies in this area. We are not

advocating that the practitioners of the field should utilize the proposed framework in "out-of-the-box" fashion and use it as a one-stop solution; rather, we suggest augmenting the framework with the domain-specific knowledge of the local experts and customizing it with the specific criteria that no general framework can take into consideration.

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AN EMPIRICAL STUDY OF HOW FIRMS IN THE UNITED KINGDOM ARE REDUCING GREENHOUSE GAS EMISSIONS

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ABSTRACT

When the Kyoto Accord was signed in December 1997, it was one of the first global attempts to identify how countries can be committed to reduce greenhouse gas (GHG) emissions. By focusing on carbon dioxide and five other greenhouse gases, the purpose of the Accord was to develop a system in which participating countries would voluntary reduce the global level of GHG emissions to start in 2005. In October 2006, the philosophy of the Kyoto accord was then addressed by the British government through the releasing of the Stern Report which recommended a number of areas in which changes have to be made in the level of GHG before permanent irrevocable damage could occur. The purpose of this paper is to take the focus of the Stern Report to the next level which is the commitment of corporations in the United Kingdom. The design of the study would be to examine how a sample of the top 100 companies in the United Kingdom are currently addressing the release of GHG emissions. Therefore, the structure of the paper would be: a review of the components of the Kyoto Accord, a review of the components of the Stern Report, and a review of the current practices of a sample of the largest firms in the United Kingdom on how they address the issues presented in the Stern Report. One issue which will be examined in the paper is how British companies are trying to make adjustments to their environmental strategy based on proposed new government regulations pertaining to GHG emissions.

THE MODERATING ROLES OF EXTERNAL ENVIRONMENT ON MARKET ORIENTATION AND BUSINESS STRATEGY TYPES

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ABSTRACT

Company performance is mainly determined by the strategy a company follows, and strategy is mainly determined by the market oriented culture a company develops. This link is affected by several factors. One of them is the external environment in which companies operate. Two moderating role of external environment – market turbulence and competitive intensity- are investigated in this paper. The purpose of this paper is twofold. First, the current research explores the moderating role of external environment on the relationship between customer orientation and strategy types. Two major strategy types were used for this purpose, prospectors and defenders. In addition to customer orientation, another component of the market oriented culture; interfunctional coordination was investigated in the same manner. Second, the moderating role of external environment is examined on the relationship between companies' strategy level and their performance. The data is collected from selected service industries which they have high level of customer interaction and high level of labor of intensity. Hierarchical multiple regression and multiple group analysis procedure are employed for the data analyses. The results are discussed at the end from both theoretical and practical perspectives.

Conceptual Background

Over the years, marketing scholars have studied the theoretical foundations of market orientation. Although the conceptualization, the antecedents and the consequences of market orientation were the focal point of the market orientation studies (e.g., Narver and Slater 1990; Jaworski and Kohli 1993; Deshpande, Farley and Webster 1993; and Matsuno, Mentzer and Mentz 2000), the external environment has only attracted academic researchers by its moderating role of the market orientation – performance relationship (e.g., Grewal and Tansuhaj 2001; Han, Kim and Srivastava 1998; Noble, Sinha, and Kumar 2002; Slater and Narver 1995; and Im and Workman, 2004). And market turbulences and competitive intensity have been considered as external environments in such studies.

Unlike strong contextual support for moderator effect, Jaworski and Kohli (1993) find no evidence of environment affecting the strength of the relationship. Kirca, Jayachandran, and Bearden's (2005) meta-analysis study also did not support the moderating roles of environmental turbulence on the market orientation–performance relationship.

Instead of moderating role of environment on the market orientation-performance relationship, current study investigates if the environmental factors moderate market orientation-strategy link. This study

presumes that there is a relationship between market orientation and company strategy, because firm performance is mainly determined by implementation of a business strategy (Walker and Ruekert 1987). And implementing a firm strategy depends on how values and norms inside the organization (market oriented culture) are developed for the specified strategy (Slater and Olson 2001).

Hypotheses Development

Environment as a moderator of the relationship between dimensions of market orientation and performance for each strategy types: the role of market turbulence

The turbulences in the market typically are generated by heterogeneity in the composition of customers and their preferences. In highly turbulent markets, the effect of customer orientation on prospectors will be stronger. The reason is that market orientation with customer emphasis is about market intelligence, which entails generation and dissemination of and responsiveness to market information (Kohli and Jaworski 1990). Prospectors proactively seek and exploit new market opportunities and often experiment with responses to changing market trends (Miles and Snow 1978). And prospectors compete on new offerings and focus on value creating activities; programs emphasizing prospectors address the issues that have the greatest impact on overall customer satisfaction or matching their offerings with customers' needs (Matsuno and Mentzer 2000). Therefore, prospectors with superior market information or a highly market oriented culture will monitor customers' needs and preferences closely and less likely to make mistakes about their offerings. Accordingly, in order to successfully implement a prospector strategy, organizations will more likely to depend on a customer oriented culture in a highly turbulent market environment.

On the other hand, in stable markets, customers' preferences do not change very much and organizations' offerings are likely to require relatively little modification in those markets (Matsuno and Mentzer 2000). In such an environment, organizations will place a greater emphasis on developing low cost related activities as opposed to developing customer sensing activities such as marketing research and innovation (Dobni and Luffman 2000). Defenders emphasize such activities by employing standardized practices to routine actions and focused functional groups (Ruekert and Walker 1987). To be successful and operate efficiently in low turbulent markets, defenders should be highly interconnected to each other. Because defenders focus on maintaining a secure position in existing product-markets. They often compete through operations or quality-based investments that offer efficiency related advantages, rarely pioneering the development of new markets or products.

Interfunctional coordination, one of the components of market orientation, fosters greater communication, collaboration, and cohesiveness (Narver and Slater 1990; Noble, Sinha, and Kumar 2002) that are essential for implementing a defender strategy type (Narver and Slater 1990). More specifically, in order to successfully implement a defender strategy, organizations will more likely depend on interfunctional coordination in a low turbulent market environment.

H_1: The greater the extent of market turbulence, the greater the positive impact of the relationship between customer orientation and prospectors' performance.

H_2: The lesser the extent of market turbulence, the greater the positive impact of the relationship between interfunctional coordination and defenders' performance.

Environment as a moderator of the relationship between dimensions of market orientation and performance for each strategy types: the role of competitive intensity

As stated earlier, in a less competitive environment, competitors do not have the capacity or resources to substantially alter the balance of power among the sellers. In such an environment, focusing on the customers' needs and wants and seeking superior customer value is most likely to lead to success (Slater and Narver 1995). Conversely, prospectors' success depends on the value creating and boundary spanning activities in this environment. Since only customer oriented values and norms provide prospectors to implement such activities, prospectors should highly emphasize customer orientation in less competitive environment. As a result, prospector strategy type and the level of customer orientation relationship will be stronger in less competitive environment compared to the high competitive environment.

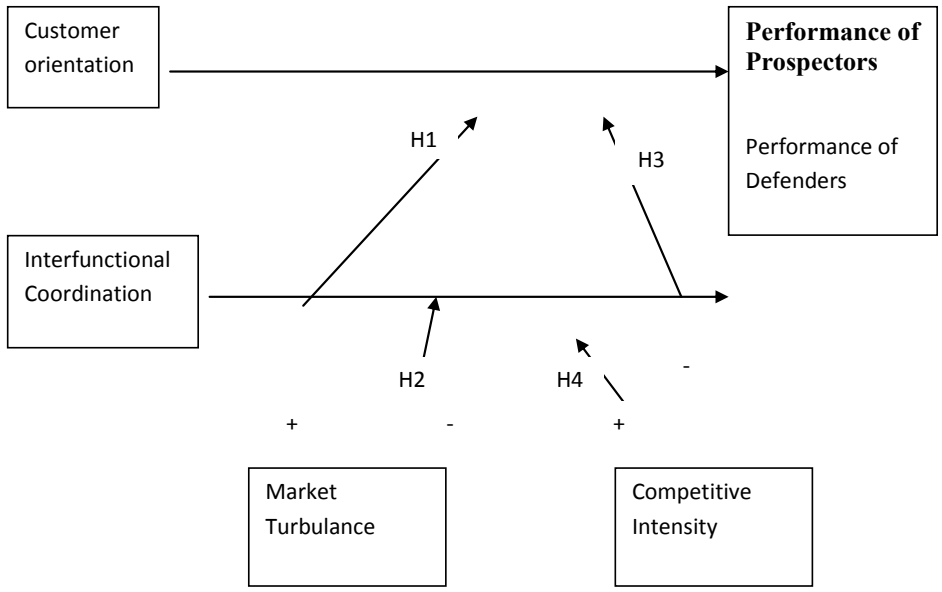
On the other hand, defenders' focus is internal and their goal is to reduce costs by focusing on the efficiency of the firm's processes (Rust, Moorman and Dickson, 2002). To do this, they depend on highly interconnected functional units. In an intensely competitive environment, a high level of interfunctional coordination is required for defenders to perform activities such as aggressive pricing or promotions. As a result, defender strategy type and the level of interfunctional coordination relationship will be stronger in highly competitive environment compared to the less competitive environment.

H_3: The lesser the extent of competitive intensity, the greater the positive impact of the relationship between customer orientation and prospectors' performance.

H_4: The greater the extent of competitive intensity, the greater the positive impact of the relationship between interfunctional coordination and defenders' performance.

FIGURE 1

Moderator Effect of the relationship between dimensions of market orientation and performance for each strategy types:



Environment as a moderator of the relationship between strategy and performance: the role of market turbulence1

1 This set of hypotheses are summarized in figure 2.

The strategy literature generally posits that strategy selection is conditional on how closely an organization is aligned with its environment (Porter 1980). Since organizations may not be aligned their environment with the same level, same speed or same direction, there will be different types or

different levels of strategy in the same environment. Furthermore the relationship between strategy and performance will be affected by the environment, the organization operates in.

In highly turbulent markets, composition of customers and their preferences change rapidly. If customer sets and/or their preferences in the market are unstable, there is a greater likelihood that the company's offerings will become mismatched with customers' needs over a period of time (Kohli and Jaworski 1990). In such environment organizations which develop capability to adapt rapid market conditions changes and capability to collect superior market information (McKee, Varadarajan and Pride (1989), will monitor customers' needs and preferences closely and less likely to make mistakes about their offerings. Since only prospector strategy type carries such capabilities and characteristics such as competing on new offerings or focusing on value creating activities, highly prospector firms are likely to be more strongly related to performance in turbulent markets than in stable markets.

On the other hand, in stable markets, customers' preferences do not change very much and organizations' offerings are likely to require relatively little modification in those markets (Matsuno and Mentzer 2000). In such an environment, organizations will place a greater emphasis on developing low cost related activities for superior performance as opposed to developing customer sensing activities such as marketing research and innovation (Dobni and Luffman 2000). Since defenders emphasize efficiency through standardized practices to reach their goal of reducing costs of their offerings, firms using high degree of defender strategy are likely to be more strongly related to their performance in stable markets than in turbulent markets.

H_5: The greater the extent of market turbulence, the greater impact of the relationship between the degree of prospectors and their performance.

H_6: The lesser the extent of market turbulence, the greater impact of the relationship between the degree of defenders and their performance.

Environment as a moderator of the relationship between strategy and performance: the role of competitive intensity

As stated earlier, defenders' focus is internal and their goal is to reduce costs by focusing on the efficiency of the firm's processes (Rust, Moorman and Dickson, 2002). In an intensely competitive environment along with the lack of potential opportunities for further growth, organizations need to develop activities such as cost control, aggressive pricing or promotions. These activities can be gained successfully in defenders strategy type. As a result, level of defenders and their performance relationship will be stronger in highly competitive environment compared to the less competitive environment.

On the other hand, in a less competitive environment, competitors do not have the capacity or resources to substantially alter the balance of power among the sellers. In such an environment, focusing on the customers' needs and wants and seeking superior customer value is most likely to lead

success (Slater and Narver 1995). As prospectors' success depends on the value creating and boundary spanning activities, implementing a prospector strategy is desirable in less competitive environment. As a result prospectors are likely to be more strongly related to performance in less competitive environment than in relatively more competitive environment.

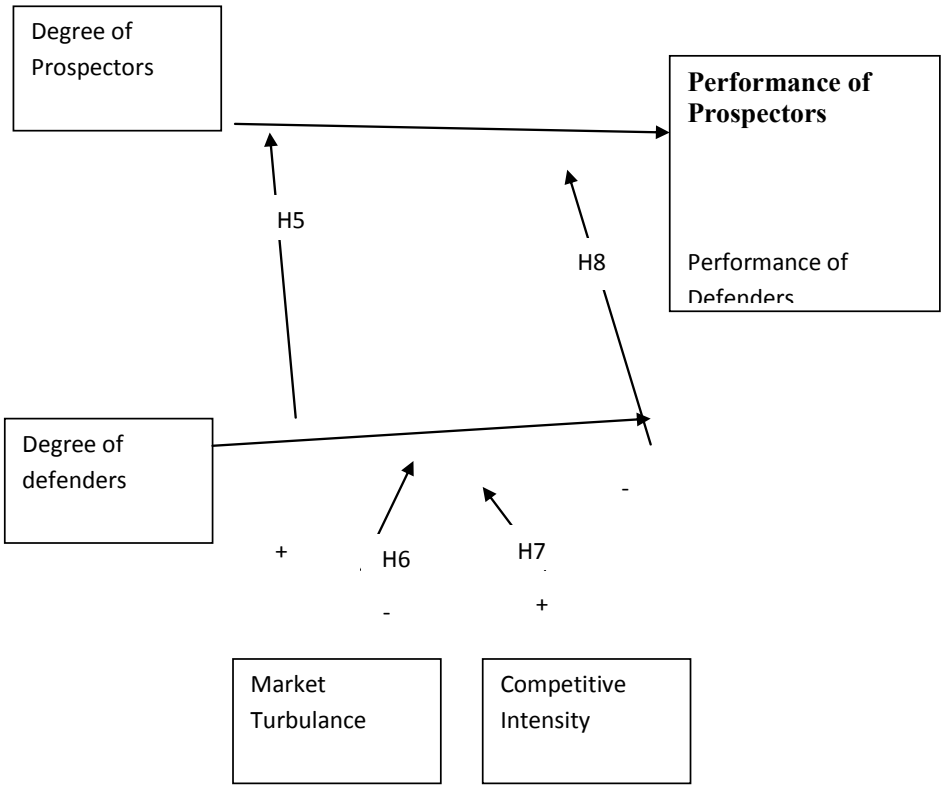
H_7: The greater the extent of competitive intensity, the greater impact of the relationship between the degree of defenders and their performance.

H_8: The lesser the extent of competitive intensity, the greater impact of the relationship between the degree of prospectors and their performance.

FIGURE 2

Moderator Effect

Environment as a moderator of the relationship between strategy and performance



Sample Selection and Data Collection

The sample used for this study utilized major service industries for two purposes: (1) to increase the generalizability of the study findings (Baker and Sinkula 1999; Gotignon and Xuereb 1997; Olson, Walker

and Ruekert 1995), and (2) to reduce industry specific biases (Olson, Walker and Ruekert 1995). The importance of service industries is undeniable in the USA, since they account for 72 percent of GNP and 76 percent of employment. Characteristics of the service industry (such as intangibility, heterogeneity, and inseparability) make the market orientation an essential construct for most service organizations.

The sample covers four sets of service industries in the service sector: finance and insurance (NAICS 52), accommodation and food services (NAICS 72), transportation (NAICS 48), real estate and rental and leasing (NAICS 53). These business lines are characteristically similar to each other in terms of high level of customer interaction and high level of labor of intensity (Tinnila and Vepsalainen 1995; Schmenner 1993). Characteristically similar industries do not increase industry effects while they enhance the generalization of our findings. 1,980 companies are in the initial sample from those 4 industry groups. Data is collected by sending survey to the managers by email, and calling them personally to ask to fill out the survey. 151 usable questionnaires were collected.

Results for Environmental Moderators

There are two types of analysis in literature to identify the presence of moderators between the predictor and criterion variables. The first one is multiplicative interaction term which is used in hierarchical multiple regression procedure, specifies the form of the relationship between the predictor and criterion variables. The second one is multiple group analysis and modifies the strength of the relationship between the predictor and criterion variables. Following Sharma, Durand and Gur-Arie (1981) suggestion, the both types of analysis have been used identifying the presence and type of moderator variables in this study.

In first method, moderator effects can be detected by using moderated regression analysis (Sharma, Durand and Gur-Arie 1981). The procedure requires the introduction of a multiplicative interaction term into the regression equation:

$Y = b0 + b1X1 + b2X2 + b3\ X1X2 + \ldots .bnXn + e$

where X1X2 is the multiplicative interaction term; where X1 is predictor variable and where X2 is a moderator variable. A moderator effect is indicated where the regression coefficient of the interaction term (b3) is statistically significant.

A specific type of regression analysis, hierarchical multiple regression, is employed to test the interaction term. There are two reasons for this action. First, hierarchical multiple regression produces fewer Type I and Type II errors for detecting moderator effects relative to procedures that involve the use of cut points (Frazier, Tix and Barron 2004) and second, it provides the partial F associated with the resulting change in R^2 for each step to test whether or not a moderating effect exists.

Table 1. Hierarchical Regression Results of Resressing Performance on Customer Orientation, Interfunctional Coordination, Environmental Variables and the Interaction Terms for Prospectors and Defenders

	Dependent Variable			
Independent Variables	Pros. Perform.	Defend. Perform.	VIF Pros	VIF Def
Step 1				
Customer Orientation	.471***	-.046	1.526	1.389
Interfunctional Coord.	-.226	.446**	1.526	1.389
R Square	.148	.180		
R Square Change	.148	.180		
F Value	4.95*	4.49*		
Step 2				
Customer Orientation	.409**	-.050	1.774	1.908
Interfunctional Coord.	-.257	.382**	1.591	1.736
Market Turb.	.122	.055	1.608	1.506
Competitive Ints.	.047	.251	1.571	1.284
R Square	.165	.249		
R Square Change	.016	.070		
F Value	.540	1.81		
Step 3				
Customer Orientation	.640*	-.058	7.565	1.917
Interfunctional Coord.	-.279*	-.814	1.647	62.416
Market Turb.	.850	.396	50.996	22.583
Competitive Ints.	-.417	-1.091	59.438	47.343
Customer Orientation * Market Turbulence Int. (H_1)	-1.033		94.914	
Customer Orientation * Competitive Intensity Int. (H_3)	.599		104.966	
Interfunctional Coordination * Market Turbulence Int. (H_2)		-.532		140.248
Interfunctional Coordination *Competitive Intensity Int. (H_4)		2.346		47.793
R Square	.181	.289		
R Square Change	.017	.039		
F Value	.546	1.02		

In the moderated hierarchical regression analysis (Table 1) the predictor variables (customer orientation and interfunctional coordination) were entered in the first step, environmental variables (market turbulence and competitive intensity) were entered in the second step. In the last step, the interaction variables were entered. As seen in step 3, the inclusion of interaction terms to the model explains the limited amount of variance (R square change .017 for prospectors and .039 for defenders) and as non significant F value (.546 for prospectors and .1.02 for defenders) indicates that the contribution of interaction terms to the model does not make significant change. As a result, the moderation effect of environmental uncertainties on the relationship between dimensions of market orientation (customer orientation and interfunctional coordination) and business performance does not support the hypothesized moderating effects for both strategy types.

About the second type of moderation effect, the moderation effect of environmental uncertainties on the relationship between the level of strategy types and their performance has been assessed by using both moderated hierarchical regression analysis and subgroup analysis (Table 2). As seen in step 3, the inclusion of interaction terms to the model explains the significant amount of variance (R square change .086 for prospectors and .104 for defenders) and as significant F value (3.49 for prospectors and .3.23 for defenders) indicates that the contribution of interaction terms to the model makes significant change. The significant results may not be comprehended that hypothesized moderating effects are supported. The following two reasons explain this assertion in detail.

The first reason is that variance inflation factor (VIF) which is calculated for each of the regression coefficients. The VIF provides information on the extent to which nonorthogonality among independent variables inflates standard errors. The VIF ranges from 34.31 to 54.22, well above the cutoff of 10 recommended by Neter, Warresaman and Kutner (1985, p.32). This finding suggests that multicollinearity is a threat to the substantive conclusions drawn from the parameter estimates.

The second reason is about the meaning of the moderators drawn from moderated regression analysis. According to Sharma, Durand and Gur-Arie (1981) multiplicative interaction terms shown in step 3 in Table 2 may not be considered as a pure moderator, because both moderator variables and predictor variable are significantly correlated to performance.

Table 2. Hierarchical Regression Results of Regressing Performance on Strategy Level, Environmental Variables and the Interaction Terms for Prospectors and Defenders

Independent Variables	Dependent Variables			
	Prosp. Perform.	Defend. Perform.	VIF Pros	VIF Def
Step 1				
Strategy Level	-.421***	-.338**	1.000	1.0
R Square	.177	.114		
R Square Change	.177	.114		
F Value	12.5***	5.42**		
Step 2				
Strategy Level	-.429***	-.397***	1.001	1.051
Market Turb.	.195	-.076	1.441	1.140
Competitive Ints.	.106	.430***	1.442	1.128
R Square	.249	.283		
R Square Change	.072	.168		
F Value	2.68*	4.68**		
Step 3				
Strategy Level	-.465	1.187	16.162	34.315
Market Turb.	1.792***	-.024	34.733	33.955
Competitive Ints.	-1.418**	1.979***	34.552	26.079
St. level and Mark Turb Int	-2.354**	-.132	70.411	45.068
St. Level and Competitive Ints Int	2.320**	-2.285**	74.933	54.226
R Square	.335	.387		
R Square Change	.086	.104		
F Value	3.49**	3.23**		

The subgroup analysis is employed to overcome those difficulties discussed above. Although subgroup analysis cannot avoid the loss of information resulting from the artificial transformation of a continuous variable into a categorical one, partitioning the total sample into homogeneous subgroups with respect to the error variance can increase the predictive efficacy for each subgroup

(Zedeck 1971). The partial correlation coefficient for market orientation and performance in each subgroup are reported in Table 3.

Table 3. Subgroup Analysis of Moderator Effects for Turbulent Environment

Part A	**Partial Correlation Coefficients for Subgroups** **Dependent Variable - Performance**			
Independent Variable	Market Turbulence (H5, H6)		Competitive Intensity (H7, H8)	
	LO	HI	LO	HI
prospectors	-.293	-.557***	-.565***	-.387**
Chow test F value	2.10ns		5.73**	
Defenders	-.378*	-.261	-.319	-.533**
Chow test F value	.281ns		4.72**	

Table 3 correlates strategy level and performance for each subgroups of environmental uncertainty and reports the correlation coefficients for prospectors and defenders. The mainly significant results of correlation coefficient for subgroups are not enough for the presence of moderating effect. It also needs to be tested that whether those high and low group regression coefficients are significantly different. The Chow test provides whether the full set of regression parameters differ among groups. Table 3- shows that there is no differences between high and low market turbulence for both strategy types. Both F values are not significant (2.10 for prospectors, .281 for defenders).

H_8 (F value = 5.73 $p < .05$) is supported indicating that the changes in competitive intensity affect the relationship between prospectors' strategy level and prospectors' performance. And H_7 is significant (F value = 4.72 $p < .05$) indicating that the changes in competitive intensity affect the relationship between defenders' strategy level and defenders' performance.

Conclusion

The first set of hypotheses contains the results of the influence of environmental turbulence on the relationship between dimensions of market orientation and performance. The findings suggest that there is no support for the proposition that environmental turbulence has a moderating effect on the strength of the dimensions of market orientation and performance (for both prospectors and defenders) relationship.

The results, consistent with the Kohli and Jaworski (1993) and Slater and Narver (1994), suggest that the linkage between market orientation components and performance appears to be robust across contexts characterized by market turbulence and competitive intensity. Implications of these finding to managers is rooted under the cultural concept. Establishing an organizational culture, market oriented culture in specific, requires long term dedication and expense. Adjusting market orientation to the today's fast changing environment might not be easy and cost effective. It might be also possible that the hypothesized moderating effects exist but were not detected because of the relatively small sample size.

The second set of interaction effect is the influence of environmental turbulence on the relationship between the level of strategy types and their performance. The results reveal that the relationship between strategy level and performance does not moderated by market turbulence for defenders and prospectors.

Although market turbulence determines the prospectors' performance, companies do not respond differently to the changes in turbulent markets (composition of customers and their preferences) on the relationship between strategy level and performance. On the other hand, relationship between prospectors' strategy type and prospectors' performance is moderated by competitive intense environment. In parallel with the related theory, relationship between prospectors' strategy level and prospectors' performance gets stronger in low intense competitive environment for prospectors. Since, in a less competitive environment, competitors do not have the capacity or resources to substantially alter the balance of power among the sellers; focusing on the customers' needs and wants and seeking superior customer value (like prospectors do) is most likely to lead success (Slater and Narver 1994). It is implied to managers that relatively less competitive intense environment are the appropriate environment to implement prospector strategy for superior performance.

For defenders, relationship between defenders' strategy level and defenders' performance is not affected by the changes in turbulent market environment. This can be explained as, defenders focus on efficiency related activities and internal processes rather than changes in customer conditions or market turbulence for superior performance. On the other hand, competitive environment moderates the relationship between defenders' strategy level and defenders' performance. In parallel with the related theory, defenders' center of attention is internal and their goal is to reduce costs by focusing on the

efficiency of the firm's processes (Rust, Moorman and Dickson, 2002). In an extremely competitive environment along with the lack of possible opportunities for further growth, organizations need to develop activities such as cost control, aggressive pricing or promotions. As a result, study findings advise to managers that the level of defenders and their performance relationship will be stronger in highly competitive environment compared to the less competitive environment.

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THE RELATIONAL COMPONENT OF THE PSYCHOLOGICAL CONTRACT: THE BIG FIVE PERSONALITY TRAITS & VIOLATION PERCEPTION OF THE TEMPORARY EMPLOYEE

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ABSTRACT

This study examines the Big Five Personality Traits, the characteristics of the involuntary temporary employees, and how these five variables of personality correlate to the relational component psychological contract violation perception. This study addresses the management dilemma of how to stop or change the employee perception that the organization is not living up to its commitments as it relates to the relational component of the psychological contract. Previous research has presented a clear message for organizations that the fulfillment of the employee's psychological contract leads to employees that are high performers (Conway & Coyle-Shapiro, 2006). As organizations struggle to gain competitive advantage through the effective utilization of their human resources, the reciprocal exchange employment relationship – or psychological contract – emerges as a topic of great interest (Tekleab, Takeuchi, & Taylor, 2005). A perceived violation of the psychological contract could result in reductions of trust, job satisfaction, organizational commitment, organizational citizenship behaviors and in increases in turnover intentions (Orivs, Dudley, & Cortina, 2008). The involuntary temporary employee profile created by the literature and the assessment of the Big Five personality traits of Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness produces findings that indicated that personality type predicts some of the facets of relational component psychological contract violation perception. The results suggest Neuroticism, Extraversion, and Conscientiousness were negatively predictive of the potential for relational component psychological contract violation perception to occur across certain facets of trust, uncertainty, and erosion. By contrast, Openness and Agreeableness proved to be positively associated. With this knowledge of correlation between personality type and relational components, organizations can now determine the best way to retain

temporary employees by behaving proactively and setting up protocols in an attempt to eliminate the potential perception of violation

SECONDARY LATINA/O STUDENT'S PERCEPTIONS ABOUT SCHOOL AND SCHOOLING

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ABSTRACT

This critical study focused on secondary Latina/o students' perceptions about school and schooling. The goal of the study was to provide educators with useful information to facilitate environmental changes in order to better accommodate the needs of the growing population of Latina/o students. Participants included 156 Latina/o high school students in North Carolina who voluntarily responded to a Likert style survey tool. The purpose of the survey was to determine the demographics of the Latina/o student population as well as the students' perceptions of their high school experience. The data gathered from the survey suggest that Latina/o students have concerns about graduating from high school and experience conflict about their future. The data further supports the need to further explore the reasons that Latina/o students may not feel safe, welcomed, or appreciated and the need to make environmental changes to better serve an ever-growing population.

Keywords: Latina/o, Student Perceptions, Secondary, High School

Introduction

Over the past several decades, there has been a significant increase in the Latina/o population in the United States, particularly in the Southeast Region. As the number of Latina/o students in the public schools continues to increase, schools and educators must critically examine the school and classroom climates, re-evaluate instructional practices and further recognize other relevant factors in students' academic and social lives.

Educators first need to be aware of who the Latina/o students are. Then they need to think about how the public schools and the schooling experience must evolve to better serve the needs of the changing and changed student population. In order to accomplish these goals, there are additional calls to

improve the social and cultural environments in classrooms and schools to facilitate student engagement. Educators appear to be aware of the need for ESL programs to meet the linguistic needs of Latina/o students (Kochhar, Suro & Tafoya, 2005; Quisenberry, 2001). However, they appear to be unaware of additional needs of Latina/o students and specifically how their perceptions of school and schooling can affect educational achievement and attainment (Aviles et al, 1999; Cummins, 1993; Gibson, 1995; Ginorio & Huston, 2001; Norrid-Lacey & Spencer, 2000; Ochoa et al, 1994; Rong & Preissle, 1998; Suarez-Orozco, C. & Suarex-Orozco, M., 1995; Valencia & Black, 2001; Valenzuela, 2000). The goal of this study was to provide educators with useful information to facilitate environmental changes in order to better accommodate the needs of the growing population of Latina/o students in secondary schools.

Literature Review

The 2000 United States Census Report reflected the changing racial and ethnic composition of the nation. Although most non-Caucasian groups experienced an increase in growth, the Latina/o population had the most significant increase during the last two decades. Nationwide, there was a 58% increase in Latina/o population with Latina/os surpassing African-Americans as the largest minority group in the United States (Duran, 2002).

The southeastern region experienced a major increase in the Latina/o population with the Latina/o population more than tripling between 1990 and 2000 in six states: Alabama, Arkansas, Georgia, North Carolina, and Tennessee. In fact, North Carolina had the largest increase in Latina/o population in the entire country, an increase of 394%. When examining the Latina/o population within the new settlement states, the changes are even more dramatic. Six counties, four located in North Carolina, experienced an increase of over 1,000% between 1990 and 2000 (Kochhar, Suro & Tafoya, 2005). The three metropolitan areas with the largest increase in Latina/o population in the nation between 1990 and 2000 were located in North Carolina: The Triad (Greensboro, Winston-Salem, High Point) 694%, Charlotte metro (Charlotte, Gastonia, Rock Hill, SC) 622%, and the Triangle (Raleigh, Durham, Chapel Hill) 569% (Frey, 2001).

Most of the Latina/o immigrants who moved to the six southern states were of Mexican origin and were foreign born (Kochhar, Suro & Tafoya, 2005). North Carolina, the state that has experienced the most growth in Latina/o population leads the nation in Mexican and Mexican-American population growth in terms of percentage (NCCAT, 2002). Other general characteristics about the Latina/o population of the South include limited educational attainment (62% lack high school diploma) and limited English proficiency (57% do not speak English well or at all) (Kochhar, Suro & Tafoya, 2005).

As the Latina/o adult population increased, so has the Latina/o student population in the new migration areas in the American southeast. There was an increase of 322% in the Latina/o student population (age 5 to 17) between 1990 and 2000. The Latina/o student population is projected to increase 210% between 2001-2010 (Kochhar, Suro & Tafoya, 2005). At a state level, the North Carolina Department of Public Instruction reported that 67,929 Latina/o students were enrolled during the 2001-2002 school

year versus 9,540 Latina/o students enrolled during the 1991-1992 school year, an increase of 612% (Konac, 2003). Unsurprisingly, Latina/os are the fastest growing student group in North Carolina's public school system (NCCAT, 2002).

With such a significant increase in Latina/o population, the schools will have to make significant adjustments in their curriculum, instruction, academic and social services to meet the specific academic and cultural needs of these students. Nearly one-fourth (24%) of Latina/o students in the six southern states do not speak English well or at all (Kochhar, Suro & Tafoya, 2005), and the language most commonly spoken at home is Spanish (Bilingualism, 2004). Teaching students English is an immediate concern for educators because the language used in instruction in public schools is English. English language proficiency in reading, writing, and speaking is considered a foundation for academic achievement and attainment. Because the Latina/o student population emerged in select areas in the southeastern states, many schools do not have English as a Second Language (ESL) programs in place to help students with their specific linguistic needs (Kochhar, Suro & Tafoya, 2005).

Research objectives and questions

The goal of this study was to provide educators with useful information to facilitate environmental changes in order to better accommodate Latina/o students' needs. With the aforementioned goal in mind, the following research questions were developed:

1) What are the demographic profiles of Latina/o students enrolled in North Carolina's secondary schools? Specifically, what are the demographics of their families and themselves, their language profiles and academic profiles?

2) What are secondary Latina/o students' perceptions about school and schooling? Specifically, what are their perceptions about their guidance counselors, teachers, the classroom environment and the school environment?

Methodology

The target population for this study was all public high school students who self reported their racial/ethnic background as Latina/o or Hispanic in North Carolina. Random sampling of high schools would be problematic as the Latina/o population is very disproportionately distributed. The North Carolina Department of Public Instruction provided the researcher a descending list of public high schools in regard to the percentage of Latina/o student population prompting the researcher to conduct a purposeful convenience sample. The researcher, using the percentage of Latina/o student population and the total enrollment of the school, calculated the approximate number of Latina/o students in each school. Schools that were ideal for participation were those that had a significant number of Latina/o students in each school. High schools with high percentage of Latina/o students do not necessarily have a large number of Latina/o students. The researcher paired the high schools with their school systems and contacted school systems that had two or more high schools with a significant Latina/o student

population, as determined by percentage and number, and the school systems that were known to the researcher or referred to the researcher as being receptive to participating in educational studies. After contacts to fifteen high schools, a total of nine high schools gave consent to conduct the research study.

The researcher consulted classification regarding the rural/urban/suburban statuses of each participatory high school based on the information provided by the U.S. Census Bureau. Based on the census classification, among the nine schools that gave consent to conduct the research study three schools were from a primarily rural system, three schools were from a primarily suburban school system, and three schools were from a primarily urban school system.

The researcher created an instrument with survey items, format, and style that was modeled after and from other existing instruments (Anderson & Gunderson, 2001; Anderson, Reynolds, Schallert, & Goetz, 1977; Asimov, N, 1997; Bernhardt, & Kamil, 1995; Cazabon, Nicoladis, & Lambert, 1998; Crawford, 1997; Fraser Institute, 2000; Gunderson, 1995; Klare, 1963; Leyba, 1978; Rossier & Holm, 1980; The Education Forum, 2003). Questions and prompts were organized thematically. To increase the instrument's user-friendliness, the researcher used a five point Likert scale to prompts. The researcher hired a data service to transform the survey into bubble format that could be scanned upon completion.

Procedures

The North Carolina Department of Public Instruction provided the researcher with a list of public high schools that had a significant Latina/o student population. After it was determined which school systems had two or more high schools with a significant Latina/o student population, the researcher contacted those systems and other systems that were referred to her as being receptive to educational research. The research study proposal and instrument were submitted to interested schools along with a description of the research procedure.

Two potential approaches to survey administration were explored. The first option was to identify Latina/o students in each school and pull out the participatory Latina/o students for survey administration. The second option was to administer the survey to the general student population in participatory classrooms and extract responses from Latina/o students for analysis. The first option could cause potential problems if Latina/o students perceived themselves as the target population. Latina/os could become suspicious and hesitant to participate or answer with integrity, if they were the only student group invited to participate in the study. For these considerations, the researcher decided upon the second option, that the survey would be administered in the social studies classes to the general student population with responses from Latina/o students extracted for analysis.

Preference for administration of the survey was given to U.S. History, a course taught primarily in the eleventh grade. Administration in an upper class would decrease the likelihood that newcomers or other students who have major difficulties with the English language would be enrolled past the point of compulsory attendance, age sixteen. Eleventh grade students would also become more familiar with bubble-format answer sheets associated with state standardized tests.

The survey, like the state standardized tests, would be written in English. Students who lacked the English proficiency needed to read, comprehend, and answer the survey would be excluded from participation. Translating the survey into Spanish was an option considered which was dismissed after the researcher consulted with experts in the field and state guidelines for testing students with limited English proficiency (Guidelines for testing students with limited English proficiency, 1998). It was pointed out to the researcher that Latina/o students who may have perceived oral fluency in the Spanish language may not be proficient reading Spanish. There are also national and regional nuances in the Spanish language that could pose a challenge when creating a singular Spanish version of the survey. If the researcher translated the instrument into Spanish, she would then be obligated to translate it into other languages first learned or spoken by other student groups since the procedure dictates administration to the general student population. In correspondence with a state modification for students with limited English proficiency, it was decided that students could use a native translation dictionary during administration. It was also stressed in the parental and student consent letters (Spanish translation provided) that participation was entirely voluntary and students could at any time decided not to participate.

The order of consent was as follows: school system, principal, social studies teacher, parent/guardian and student. Teachers set the date and class period(s) or block(s) for survey administration. The researcher administered the survey, introduced and began survey administration, or provided training to the classroom teachers so they could administer the survey depending on the preference of the participating teachers.

Upon completion of data collection, the researcher reviewed each completed answer sheet. Stray pencil marks and smudges were erased to facilitate scanning; incomplete answer sheets, and sheets with obviously falsified information (e.g., a student who wrote that his father was a “professional pimp”, his mother was a “stripper”, and that he was born in Bangkok but spoke Chinese) were excluded. The remaining answer sheets were submitted to the data services firm for scanning.

Data Analysis

The data-consulting firm scanned the completed surveys into five separate EXCEL data sets. After the data was successfully merged into a single SPSS file, all data was converted into numeric codes for the 1,281 cases. Cases in which students identified their racial/ethnic background as Latina/o or Hispanic (160) were copied and a new, separate data set was created. Out of the 160 cases, 4 were excluded from analysis due to the large number of missing items. Responses from 156 Latina/o students who fully completed the survey were used for descriptive and inferential statistical analysis. Latina/o students constituted 12% of the total surveyed participants.

Findings

Research question 1

The following summary describes the demographic profiles of Latina/o students enrolled in North Carolina's secondary schools. Specifically, the demographics of their families and themselves, their language profiles and academic profiles.

Of the 156 Latina/o students who completed the survey, 83 were female and 73 were male. Most of the students reported that they were in the 11th grade (n= 68 or 43%). The age of the respondents ranged from 14 to 19 years with an average of 16.39 years. When asked their place of birth, 62.8% of the Latina/o students reported they were born outside of the United Stated and, therefore, were immigrants. About another third were classified as first generation Americans, with one or both parents born outside of the United States. More than half of the students cited Mexico (57.1%) as their place of birth followed distantly by El Salvador, Ecuador, and Honduras. The number of people in the household ranged from 1 to 15 with an average household size of 5.35 people.

Respondents provided information about their parents' place of birth and their parents' educational attainment. The majority of Latina/o students reported that their mothers were born outside of the United States (85.3%). Student most often cited Mexico (52.6%) as their mother's place of birth followed distantly by El Salvador, Colombia, and Ecuador. With regard to the educational attainment of their mothers, there was a variety in responses but the majority (86.5%) reported that their mothers had a minimum of a grade school education. However, upon further examination of the data, 58.6% of the Latina/o students' mothers did not have a high school diploma.

Similar to the data provided about their mothers, the majority of Latina/o students reported that their fathers were born outside of the United States (82.6%). The students most often cited Mexico (56.3%) as their father's place of birth followed distantly by Ecuador and El Salvador. Similar to data about the mothers' educational attainment, the responses were varied but more students reported that their fathers had a college education (23.3% versus 16.1%). However, more than half of the participants' fathers did not have a high school diploma (57.3%).

The majority of Latina/o students indicated that Spanish was the first language learned (76%), followed by English (31.0%) than a combination of English and Spanish (1.3%). Despite the large percentage of Latina/o students who self reported that their first language was not English, only 53.8% reported that they had taken or were presently enrolled in an ESL (English as a Second Language) class. It is important to note that due to their high English language proficiency, participating Latina/o students may have placed out of ESL classes and/or may not have needed the services of ESL classes.

Students were then asked to identify the language that they most often spoke at home and with their friends. More than half of all Latina/o students who participated in this research wrote in that Spanish was often spoken at home (61.2%), followed by English (19.4%0, and a combination of English and

Spanish (19.4%). However, only 30.8% of Latina/o students reported that Spanish was the language spoken most often with their friends.

The final component of research question one was an inquiry into Latina/o students' current education and their career plans after high school. Students reported that their average grade was a B or C (44.4% and 32.6% respectively) with an average grade point average of 2.7 or B-. Most Latina/o students reported that they were enrolled in a college preparation course of study (40.6%) followed by career preparation (31.6%) than career technical preparation (18.6%). In correspondence with the 40.4% enrolled in college preparatory courses, 39.7% of Latina/o students plan to attend a four-year college or university. Twenty six percent of Latina/o students plan on attending a community, junior or technical college in contradiction of the 19% enrolled in the college technical preparation program. The majority of Latina/o students, 60.3% or approximately 3 out of every 5 Latina/o students, do not plan on attending a four-year college or university.

Research question 2

The following summary describes secondary Latina/o students' perceptions about school and schooling. Specifically, their perceptions about their guidance counselors, teachers, the classroom environment and the school environment.

Latina/o students' perceptions about school and schooling, specifically their perceptions about guidance counselors and preparation for the future, teachers and the classroom environment and the school environment were explored. Students responded to prompts using the five point Likert scale (strongly agree, agree, neutral, disagree and strongly disagree) provided. The mean for each prompt was calculated.

In the first category, guidance counselors and preparation for the future, students reported their perceptions about the role of guidance counselors and their views on their high school education as preparation for their futures. The majority of Latina/o students reported that they had access to a guidance counselor (76.8%) in their school, however, only slightly over one third of the respondents indicated that they felt comfortable talking to a guidance counselor (38.5%) and a similar percentage of students perceived that guidance counselors helped them prepare for the future (39.1%).

The majority of Latina/o students did perceive that high school was preparing them for their future (71.1%) and that they believed they knew what they needed to do to graduate from high school (85.3%). When asked about preparation for college, a little more than half of Latina/o students reported that they knew what they needed to do to go to college. It is important to point out that in another question in the survey 66% of Latina/o students responded their future plans included some type of post-secondary education. However, 26 out of 154 students admitted that they had seriously thought about dropping out of high school.

In the second category, teachers and the classroom environment, students responded to prompts about teacher characteristics, their classes, and the classroom environment. In regard to teacher characteristics, a little more than half of Latina/o students (55.5%) perceived their teachers as caring, but one out of ten Latina/o students reported that they believed their teachers were not caring. When provided with specific examples of caring there was a slight increase in favorable opinions of teachers. The majority of Latina/o students perceived their teachers as helpful (69.9%). Regarding the concern of teachers when students were not performing well in class, most Latina/o students perceived their teachers as being concerned (61.6%) although one out of ten students reported that their teachers were not concerned when they did not do well in class. When students were asked if they thought their teachers had high expectations for academics and behavior, most Latina/o students perceived teachers as having high expectations for their work and behavior in class (63.5%). Few students indicated that their teachers had low expectations (6.4%). When asked if they thought that their teachers respected students as individuals, most Latina/o students perceived teachers as respectful (64.1%) with about one in ten expressing a dissenting opinion. Finally, students were asked if they experienced different treatment because of their race/ethnicity. Twenty-four out of the 156 respondents reported that they were treated differently because of their race or ethnicity whereas 90 students reported no different treatment.

Additional items in this category focused on students' perceptions of their classes and environmental factors in the classroom such as students' comfort level participating in class and working with their peers. When asked if they enjoyed their classes, 51.6% of Latina/o students responded that they did enjoy their classes whereas 16.8% responded that they did not enjoy their classes. Prompts then shifted to students' perceptions about their relationship with their peers and classroom participation comfort level. The majority of Latina/os were asked if they felt comfortable raising their hand in class, the answer was split: 39.7% of Latina/o students reported feeling comfortable yet, 31.4% report feeling uncomfortable. The results were also very close for the question that asked students if they felt comfortable talking in front of their peers. Those who were comfortable talking in front of their peers constituted 37.2% of the respondents whereas 35.3% of the respondents indicated their discomfort talking in front of their peers.

The next category was an exploration of students' perceptions about their school and the school environment. First, an inquiry was made into the importance of school in Latina/o students' lives. The majority of students responded that high school was a priority to them (68.4%) and that they were interested in school (67.1%) but a third of the students expressed concern that they would not graduate from high school, although in previous questions the majority of students reported that they knew what they needed to graduate from high school and few expressed feeling of wanting to drop out.

Approximately one third of students reported boredom (31.8%), although over half reported previously that they enjoyed their classes, which can lead to multiple interpretations of the data. About half of the students expressed happiness in attending school (47.7%) but approximately 1 out of 7 Latina/o students reported that they were not happy at school (14.8%). Upon further examination of the social

aspects of school, the clear majority of Latina/os responded that they had friends in school (89%) with friendships being cultivated during instructional and non-instructional time during the school day, as few students reported that they were involved in extra-curricular activities.

The majority of Latina/o students perceived that they were treated well at school with only a few, 7 out of 154, expressed views of poor treatment. However, perceptions about the safety of school were significantly less positive. Less than half of Latina/o students thought that their school was safe (41.2%) with one in five reporting the belief that their schools were unsafe. A potentially influencing factor on perceptions about school safety was peer intimidation. Most Latina/os (54.9%) responded that they did not feel intimidated by other students at school; one out seven reported they felt intimidated by their peers.

The final inquiry in this category explored Latina/os perceptions about their schools' value and treatment of the diverse student population. Over half reported that they thought that their school valued different races and cultures with approximately one out of seven expressing a dissenting opinion, that their school did not value different races and cultures. On the specific topic of racism, approximately one out of every five Latina/o students (18.8%) thought that racism was a problem at their school with approximately half of Latina/o students (47.1%) believing that racism was not a problem at their school. However, when asked if they thought that students who did not speak English were treated unfairly, the students' responses were divided. Fifty-three out of the 153 respondents believed that non-English speakers were treated unfairly whereas 51 out of 153 thought that non-English speakers were treated fairly.

Discussion

It is important to stress to the reader that participation in this research study was voluntary, that Latina/o students had to have English proficiency to participate, and that most of the participants were 16 or older, past the point of compulsory attendance. Therefore, taking into consideration that many ELL students were not included and other Latina/os may have chosen not to participate in the study, the researcher advises readers to use discretion in terms of using the results in practice and policy making.

This study had limitations in sampling and in its instrumentation that need to be considered when interpreting the results. First, the study was limited to Latina/o students mainstreamed in high school social studies classes who had the English proficiency required to read, understand, and respond to survey items. As participation was voluntary, students who may not feel confident about their English language proficiency and ability may have chosen not to participate. Therefore, the results may not fully represent secondary Latina/o students' perceptions and opinions in North Carolina. Future research may want to expand the scope to include Latina/o students who have limited English proficiency but sufficient Spanish proficiency. Providing a written or read Spanish version of the survey instrument would involve more Latina/o students in a future study of this kind. It may also be necessary to provide oral interviews to Latina/o students who have oral Spanish proficiency but not reading/writing proficiency in Spanish.

Second, the survey was administered in nine high schools from three school systems in North Carolina. Future research needs to expand the scope to include additional school systems. The Pew Hispanic Center (2004) identified 19 counties in North Carolina as new Latina/o settlements with a significant change in youth population. An additional 16 counties from other southern states (Alabama, Arkansas, Georgia, South Carolina and Tennessee) also reported a significant increase in Latina/o youth population, 1990-2000 (Kochhar, Suro & Tafoya, 2005). Including Limited English Proficient (LEP) Latina/o students through a Spanish written or verbal survey and expanding the scope to additional Latina/o settlement areas in southern states would provide educators and policy makers with a more complete view about Latina/o secondary students' perceptions about school and schooling.

Recommendations

The findings of this study provide educational stakeholders with recommendations for improving education for Latina/o students in public high schools as follows:

- Latina/o students appear to have concerns about graduating from high school and experience conflict about their future as reflected in the discrepancy between examining their future goals and graduation course of study. A comprehensive mentoring/advisory program is needed that begins in middle school and continues through high school that covers graduation course requirements, explores future occupations, and discusses pre-requisites for college admission and sources of funding with students and parents.
- Schools need to further explore the reasons that Latina/o students do not feel safe, welcomed, or appreciated and make environmental changes. An example would be re-evaluating the extracurricular activities offered at the school and offer extracurricular activities that appeal to Latina/o students and work within their work schedules and transportation issues so that they can participate and feel like a contributing member of the school.
- Teachers need to focus on making their classrooms feel safe and inviting to Latina/o students and strengthen their communication and relationships with their students. When developing lessons and activities, teachers need to keep in mind that Latina/o students may feel uncomfortable participating in a whole class activity (e.g. raising hand in class, talking in front of peers) and prefer to work in groups. In addition, teachers need to find ways to create classroom environments that are balanced with academic rigor and an understanding of language minority issues.

Conclusion

This critical study focused on secondary Latina/o students' perceptions about school and schooling. The goal of the study was to provide educators with useful information to facilitate environmental changes in order to better accommodate the needs of the growing population of Latina/o students. The results demonstrate the need to further explore ways to make sure that Latina/o students feel safe, welcomed,

and appreciated in the high school environment. The results further demonstrate a need to support Latina/o students in their efforts to succeed in high school, both academically and socially. It is imperative that guidance counselors and teachers work together to provide a strong foundation and help the students develop goals for their future and assure that their course of study supports these goals.

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DISTANCE EDUCATION IN GHANA: EMERGENT MODELS OF LEARNING IN HIGER EDUCATION

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ABSTRACT

Countries all over the globe are using distance education as a means to expand educational opportunities for students. In countries such as the United States, Canada, Britain, Nigeria, South Africa, many of the well established higher education institutions have developed distance learning institutes to create educational opportunities for students and working adults to upgrade themselves. Ghana has taken advantage of this global trend and established strong ties with local and foreign institutions to make higher education available and affordable to thousands of Ghanaians. By examining data from the World Bank, UNESCO, and also information from the participating institutions, the paper concludes that distance education has been embraced by many working adults because of its cost-saving and other social benefits.

Key Words: Distance education, learning centers, correspondence course, higher education

Introduction: The need for distance education

The idea of distance education is not new in Ghana. The idea of students in Ghana studying on their own with instructors located in distant institutions in distant places started during the late 1920s when there were no institutions of higher learning in Ghana. All Ghanaians who had higher education credentials acquired them from abroad, particularly Great Britain and the United States, (Drake, 1956; Chapman, 1960). These students were very few. Many suitable or qualified candidates were prevented from pursuing university courses only by the high cost of such education overseas. The bearer of higher education credentials in Ghana were respected even when their ideas were not followed or accepted by some of the traditional leaders (Drake, 1956).

Chapman (1960) has observed that students who came from families with moderate means who sought higher education degrees had "to rely on correspondence courses and private study and so miss the stimulating effect of full life and social contacts"(p.14). This system of learning was called correspondence course because students registered with foreign institutions and got all their learning materials through the post. Students studied the materials on their own and eventually took the final test for their certification or diploma locally.. This was the means through which most of the early scholars in Ghana who had no means of studying overseas earned their higher education credentials.

Many of these foreign intuitions were located in Europe. Britain, being the colonial power led the pack in the administration of correspondence courses in the country. University of London, Cambridge University, Rapid Results College, and Wolsey Hall Oxford were a few of the British institutions that offered correspondence courses for students in Ghana during the colonial period.

Like other countries in the developed as well as developing countries, Ghana has now embraced distance education as an alternative form of providing education to thousands of qualified students in the country. Institutions in the forefront of this innovative way promoting higher education include the University of Ghana, Accra, University of Cape Coast, Cape Coast, University of Education, Winneba, Ghana Institute of Management and Public Administration, Accra, Kwame Nkrumah University of Science and Technology, Kumasi. These local institutions, together with other foreign and local ones have over the years become the avenues through which thousands of Ghanaians have obtained higher education credentials.

Distance education has become very popular in the country because of its cost-savings and the convenience it provides adults, especially women, to work full-time while taking courses to upgrade your professional skills. Another incentive is the opportunity it affords people to earn further degrees to enhance their academic standing at the workplace and community without leaving their family environment for months (Chapman & Mählck, 2004).

In 1996, the University of Education, Winneba, enrolled the first batch of distance education learners. The total number of students enrolled was 196. In 2001, the total number of students enrolled stood at 1,096. By 2004 the total number had jumped to 5,361 (Kwapong, 2007).

Today, distance learning has become a major part of the effort of educational planners in Ghana to expand access to higher education for thousands of students in the country. In the next section of the paper, two forms of distance education, the old and the emergent ones, will be discussed.

Old models of Distance Education: Correspondence Courses

The old model of distance education was conducted through correspondence. Usually, students in Ghana registered with institutions and these institution sent them course materials needed for the program through the post office.

Many of the students were working adults such as teachers, clerks, lawyers, or accountants. Their aim was to earn higher academic degrees for promotion or further studies abroad. Some of the overseas institutions that offered correspondence courses in Ghana were the Wolsey Hall Oxford, Rapid Results College, Trans-World Tutorial College, Oxford University, and London University (Aggor, Kinyanjui, Pecku, Yerbury, 1992).

Rapid Results College prepared students to sit for the General Education Certificate Examinations, Ordinary and Advanced (O and A) levels. The courses included English language, English literature, British Constitution, economic history, European history, geography, commerce, accounting, economics,

bible knowledge, and government. A pass for university education required good passes at the Ordinary and Advanced level courses in the above subjects.

Wolsey Hall Oxford, University of London, Cambridge University, prepared students locally for various external degrees in the social sciences through correspondences courses. This method of learning was common in the British Commonwealth. It was through this method that many of the early scholars in Africa obtained university degrees (Kwapong, 2007) .

Feedback was not immediate since completed assignments had to be mailed back to overseas for grading. All course materials were released to candidates upon full payment of fees. Students paid fees to the foreign institutions that provided the correspondence courses.

The government played a minimal role in the organization and administration of correspondence courses. It also introduced policies that made it possible for Ghanaians to transfer money from their local banks to pay the fees abroad. Also, it provided centers where students met and took final examinations. Candidates travelled long distances to take tests at these centers. Some candidates travelled over 100 miles to take the tests. Where the test lasted more than one day, the candidates had to arrange for their own lodging, meals, and other necessities while taking the tests. Students received their test scores through the mail. Copies of the test results were sent to the testing centers where students first checked for their results before individual report cards were mailed from the foreign institutions to the students at the local address (Ghana-Nonformal, 2010). The results were often displayed on a large notice board at the testing center for all to see.

This model of distance education gradually declined during the mid 1960s because:

- The decline in the general performance of the economy implied that very few people had extra money to invest in correspondence courses.
- The government introduced stringent economic measures to check the use of scare foreign currency by individuals.
- Many students used their study leave allowances to pay for correspondence. When the government stopped this grant as a result of the downward trends in the economy, many of them could not continue their correspondence courses (Aggor, Kinyanjui, Pecku, & Yerbury, 1992).

One main disadvantage of this system was that correspondence courses were essentially open to students who could afford to pay higher fees for higher education. Sometimes students from affluent homes were able to convince their parents to pay the fees for them. Those students whose parents could not afford the high fees had to be content with middle school leaving certificate or a high school ordinary level or advanced level certificate. Another disadvantage was that students who lived at locations far from the post office had very little chance of participating in correspondence courses because communication was not feasible.

Increases in school enrollments at the primary, middle and secondary schools after independence were not matched by improvements in the provision of higher education in Ghana (Garnier & Schafer, 2006). Many of the public elementary and middle schools that were established had no qualified teachers to teach in these schools. Moreover, students who had the qualification for university education could not find admission because the few universities available in the country had no facilities to admit them. According to Kwapong, (2007) "Available statistics indicate that from 1996-2001, only about 32% on the average, of qualified applicants for admission into the universities, and about 54% of same for admission into the polytechnics, were actually admitted" (p. 66).

These developments were very much against the government's national education goal of making education at all levels accessible to all Ghanaians. Between 1991 and 1994, the government of Ghana conducted a survey into the possibility of widening access to education through distance education. In this survey, the government of Ghana had assistance from several foreign agencies. The Commonwealth of Learning (COL) and UNESCO were two foreign partners that left indelible marks in the venture.

The report published by the government in 1992 indicated several problems with the administration and organization of education in the country. With reference to higher education, the report indicated that some students who were offered admission as non-resident students, managed to stay in residence with friends and relatives. In some cases, a room originally assigned to one student eventually became a room for four or more students. This practice resulted in undue pressure on the little facilities on campus. The reported therefore conclude with a strong recommendation for the implementation of distance education in all public tertiary institutions, namely, the University of Ghana, the University of Cape Coast, the University of Education, and the Kwame Nkrumah University of Science and Technology (Aggor, Kinyanjui, Pecku, Yerbury, 1992).

Emergent Models: Learning Centers

The emergent models of distance education in Ghana consist of two modes; these are the face-to-face and online models. The face-to-face models are more common and very popular in the country because of poor communication facilities and lack of accesses to the Internet in many locations in the country (Asunka, 2008). Because of these reasons, more local institutions use this mode to offer instruction to students thousands of students than the online version, where students do most of the work through the Internet. Students who patronize online learning are generally located in the urban centers such as Accra, Cape Coast, and Kumasi Asunka, 2008; Kwapong, 2007; Thakrar, Zinn, & Wolfenden, 2009).

With the face-to-face models, students register with an institution and receive course packages. The packages include course modules. These modules include programs and activities that each student must complete by the end of the semester. The package may include print materials, CD ROMs, or videos that contain class materials and assignments. According to Brown and Koomson (2009), the modules are generally put together by experts in each discipline. In designing the modules, the experts took the needs of the distant learner in mind. A table of contents and glossary of terms are included in

each module to help students navigate through course materials. Each module has an introduction, in-text questions, unit review sections, and self-assessment questions (Brown & Koomson, 2009). In general, the modules are designed in such a way that students who follow the lessons according to the course packet will have little problem mastering the contents.

Apart from the learning activities at the learning centers, students enrolled in the teacher education programs at the University of Cape Coast and University of Education to participate in teaching practice. There are two parts to the teaching practice; on-center and off-center modes. The first part (on-center) usually takes place at the learning center and the second part (off-center) takes place in the field outside the learning center.

The aim of the on-site teaching practice is to offer students the opportunity to put into practice newly acquired pedagogical skills. Students teach their peers during the on-center part of the student teaching. When a student finishes with the peer teaching, the student gets immediate feedback from the university supervisor. The peers of the students also offer suggestions for improvement. Course tutors award final points for peer teaching.

The off-center teaching practice is organized for final year students. During the teaching practice, each student works with university supervisors. Each supervisor or mentor is expected to supervise his or her mentee at least twice before the end of the session. At the end of each visit, supervisors have a conference with the student. During the conference supervisors who provide students immediate feedback concerning their teaching effectiveness. The teaching practice periods lasts between three and five weeks during the last trimester of the program. The length of the teaching practice is often based upon the length of the vacation period for public schools. Final points for teaching practice are awarded by student supervisors.

During the teaching practice, the students are expected to demonstrate competency in the following areas:

1. Lesson preparation
2. Mastery of content
3. Lesson implementation
4. Teaching and learning resources
5. Classroom management and organization
6. Student engagement
7. Effective communication skills
8. Lesson introduction and closure
9. Student assessment
10. Appearance

(Brown & Koomson, 2009)

These students participate in the matriculation and commencement activities of the university that offers the distance education. Once the students register, they receive information about their learning centers. The learning center may be located several miles away from the parent institution. These learning centers are located all over the country. The University of Cape Coast has 33 learning centers located all over the country, although the southern part of the country has nearly 90% of the centers. The University of Education, Winneba has over 13 learning centers, and the University of Ghana has a learning center in each of the ten regions of the country.

Learning centers are usually created in existing high schools, polytechnics, teacher training institutions. In some cases, the institutions offering distance education programs construct their own buildings. University of Education Winneba has constructed a modern Learning Center in Kumasi where students meet at specific times, especially during the weekends for face-to-face interactions with instructors. The Learning Centers also serve as tutoring centers where students who need extra help meet with their tutors for special learning sessions. The tutors or mentors are usually experts in their fields. Teaching and learning resources include the Internet, CD ROMs, Televisions and computer, and print materials such as text books. At the end of the sessions, students are assessed to determine the outcome of the program effectiveness.

Students are required to attend residential sessions for a number of weeks, where they meet their instructors and go over course assignments and requirements before they graduate.
The University of Education Learning Center in Kumasi has modern technology, such as computers, printers, copy machines, central address systems and fax machines. Other learning facilities include furniture, library, with access to the Internet, and classrooms where students occasionally meet for face-to-face learning (Ghana News Agency, 2010).

Online Distance Education

Online learning in Ghana is in the infancy phase. Access to the Internet is not readily available in the country (Awidi, 2008). This makes it very hard to promote online distance education in the country. Access to the Internet is only available on the main campuses of the mother institutions offering distance education for students in the country. Very few people have access to the Internet even in the urban centers. This mode of distance education is offered essentially in the urban centers. Institutions such as the University of Ghana, Ghana Institute of Management and Public Administration (GIMPA), University of Cape Coast, and Kwame Nkrumah University of Science and Technology, Institute of Professional Studies, Accra, Regent University of Science and Technology, Dansoman, Accra have all developed online learning courses for students. Most Students access course modules and materials from the campuses of these institutions. At the Our Lady of Apostles (OLA) College of Education, Cape Coast, and the University of Education, Winneba, students have access to teaching modules online. These modules have been prepared by a consortium, Teacher Education in Sub-Saharan Africa (TESSA) and are made available to teachers in Africa (Thakrar, Zinn, & Wolfenden, 2009). The college timetable

has been modified to enable students be online one at least one session per week. Students participate in TESSA forums online. Others access these courses from locations outside the campuses such as other educational institutions that have access to the Internet.

Although a few foreign institutions have collaborated and allowed students in Ghana to register for online education, four foreign institutions that have made significant strides in this direction are Amity University, India, Indira Ghandi National Open University (IGNOU), India, University of Leicester, and McGrath Institute of Business Australia, formerly called Institute of Technology Australia (IOTA . Amity University and IGNOU have established joint educational programs with the Kwame Nkrumah University of Science and Technology to offer eCourses in Masters in Business Administration, Masters in Finance and Control, Masters in Information Technology and Masters in Tourism. Students are awarded degrees by these foreign institutions. The other two foreign universities are University of Leicester, UK, and McGrath Institute of Business Australia, formerly called Institute of Technology Australia (IOTA). These foreign universities offer courses online. The courses include computer science, finance, business, accounting and business , accounting, computer science, public administration, management, and economics. They also get access to the Internet to complete and submit assignments. Both institutions have learning and support centers in Ghana where students get help with their computing or online work such as downloading or uploading of course materials. These courses last from two years (diploma) to four year bachelor's degree. Master's degree programs require 18 months or two years to complete. Students are awarded their degree from these foreign institutions.

In the United States, the School of Leadership and Professional Advancement of the Duquesne University in Pittsburg, USA has teamed up with the Institute of Professional Studies in Ghana to offer online courses in Master of Science and Master of Philosophy Degrees in Global Leadership. These programs were designed with suggestions from the corporate leaders who want programs designed solely for the needs of people already working for different companies, corporations, government or private agencies. (Mensah & Owusu-Mensah, 2002). Teaching and learning activities for online learning in Ghana include discussion boards, chat rooms, and email exchanges.

Admissions and Course Offerings

Admission requirements to the distance education programs are the same as those required for the traditional modes of learning in the mother institutions. At the University of Cape Coast, all applicants are required to be practicing teachers. They could be teaching in the public or private schools (Brown & Koomson, 2009). This requirement is essential because the distance education program at the University of Cape Coast is designed to help teachers improve their pedagogical skills as well as their content knowledge. Essential courses the University offers teachers through its distance education programs include three year Diploma in Basic Education, and two year Post-Diploma in Basic Education, four-year program in Marketing, three-year Diploma in Psychology and Foundations of Education. Students who

graduate with high honors automatically qualify for the post-diploma program (Ghana News Agency, 2009).

The University of Ghana offers Bachelor of Arts in the Social Studies. These courses, include Geography, Resource Development, Economics, Sociology, Psychology and Linguistics. Kwame Nkrumah University of Science and Technology offers Bachelor of Arts courses in social sciences and business, and Bachelor of Science courses in Computer science, Engineering, (Osei & Saah, 2009). Admission to the distance learning programs at the University of Ghana and Kwame Nkrumah University of Science and Technology differ significantly from those required by the University of Cape Coast and University of Winneba. University of Ghana and Kwame Nkrumah University of Science and Technology do not prepare teachers and so their admission requirements include good passes at the General Certificate of Education, Ordinary Level (GCE O Level) . In many cases, candidates are expected to pass at least five ordinary level courses. Candidates must pass English language and Mathematics with credit. In addition to these, candidates are expected to pass at least two or three Advanced level courses in the social sciences, mathematics or science.

Enrollments in Distance Education

Enrollments in distance learning in Ghana have been very encouraging since its inception in the early 1990s. From a humble beginning in the early 1990s, students at the University of Cape and the University of Education, Winneba have showed greater enthusiasm embracing distance education. In 1996, the University of Education Winneba enrolled 196 students in its distance education program. They were enrolled to pursue Bachelor of Education courses in English, Science, Life Skills, and Mathematics. For the 2009/2010 academic year the university enrolled 3,519 students to purse various courses in Education. (Ghana News Agency, 2010)

In 2001, the University of Cape Coast enrolled 750 students in its distance education program to pursue Diploma in Basic Education program. Since then, the enrollment figures have been rising. For the 2009/2010 academic year, the University of Cape Coast, Cape Coast enrolled 7,444. (Ghana News Agency, 2010). The courses offered through distance education include Bachelor of Education, Commerce, Management Studies, and Bachelor of Science in Marketing and three-year Diploma in Basic Education.

Enrollments in distance education are soaring for several reasons. Many students in Ghana are enrolling in distance education because:

- It is less expensive than the conventional system
- Is a more convenient way for obtaining higher education degree
- Admission is less competitive
- It enables participants to be with family while studying

- It enables people to working full-time while earning another degree
- Teachers and other workers do not have to worry about study leave. Mensah & Owusu-Mensah, (2002). See Table 1 for enrollments in distance education for two-year Diploma in Basic Education Program, University of Cape Coast, Cape Coast.

Table 1 Distance Education Enrollments for the Three Year Diploma Basic Education Program in Ghana: University of Cape Coast, Cape Coast, 2001-2009

Academic Year	Male	Female	Total
2001/02	474	238	712
2002/03	1,435	1,087	2,522
2003/04	1,918	1,413	3.331
2004/05	1,858	1,105	2,963
2005/06	1,407	974	2,381
2006/07	1,296	1,281	2,577
2007/08	913	751	1.664
2008/09	1,199	934	2,133
Cumulative Total	10,500	7,783	18,283

Source: Oppong-Mensah, 2009.

From Table 1, it is clear that since 2001/02 academic year enrollments in distance education at the University of Cape Coast in the Diploma in Basic Education has been on the ascendency. Table 2 below shows enrollment figures for the Post-Diploma Degree in Basic Education.

Table 2 Enrollment Figures for Post-Diploma Degree in Basic Education, University of Cape Coast, 2005/06-2008/09

Academic Year	Male	Female	Total
2005/06	750	537	1.287
2006/07	465	316	781
2007/08	419	437	856
2008/09	379	292	671
Cumulative Total	2,013	1,582	3,595

Source: Oppong-Mensah, 2009

The enrollment figures for the University of Education, Winneba for the 2005/06 through 2008/09 academic years are displayed in Table 3 below.

Table 3 Enrollment Figures for Diploma Degree in Basic Education, University of Education Winneba, 2002/03-2008/09

Academic Year	Male	Female	Total
2002/03	584	512	1,096
2003/04	833	1,210	2,043
2004/05	923	1,336	923
2005/06	530	961	1,491
2008/09	4,092	6,289	10,372
Cumulative Total	6,962	10,299	17,261

Source: Oppong-Mensah, 2009.

For the Post-Diploma in Basic Education program University of Education, Winneba enrolled a total of 1,447 students during the 2008/09 academic year. Of these 524 were male and 923 were female (Oppong-Mensah, 2009).

The University of Ghana admitted over 100 students in 2007 to its distance learning program to pursue various courses in Bachelor of Arts and Science degrees. (Ghana News Agency, 2007). These students are given the same privileges as those who are pursuing their degrees from the traditional mode of face-to-face learning on campus.

It is interesting to note that both male and female students have taken equal advantage of the program to enhance their academic skills. The availability of distance education in Ghana is helping many qualified candidates to obtain higher education degrees to enhance their social standing as well as job opportunities (Dawson-Brew, Odur0, & Ankomah-Sey, 2009).

Conclusion

The development of distance education in Ghana is in response to the increased demand for higher education credentials in Ghana. It is also the result of the efforts of the government of Ghana to offer educational opportunities to teachers to upgrade themselves. The two universities, University of Cape Coast and the University of Education, Winneba have through their distance education programs helped thousands of practicing teachers upgrade themselves. This development is by all standards a positive development in the process of meeting the educational needs of all students especially those in the elementary, and high schools who need trained teacher to teach them.

The introduction of distance education in Ghana has placed a limit on the number of students who leave the country every year to seek higher education abroad. Many of these students did not return to Ghana after their education. This process eventually led to what is often called brain drain in the country.

The participation of foreign educational institutions in the distance education in Ghana is laudable in several ways:

- Ghanaian students are able to earn degrees with foreign institutions without leaving their family in Ghana, a trend that has often led to break-up in family life.
- This model has put the educational system in Ghana in the global market. It has enabled educational planners in Ghana to make adjustments in the educational requirements and standards students are expected to meet both at home and abroad.
- The invitation of foreign institution into the distance education program has enabled many Ghanaian students to participate in other programs that might not be available in Ghana. For instance, many Ghanaian students and faculty have been able to upgrade their computing skills through the education they received from foreign institutions online or on-ground.
- By participating in online learning, thousands of Ghanaian students have been able to upgrade their computing and Internet skills. All the major universities have access to course management systems that include email accounts. Students and faculty exchange emails for academic as well as non-academic purposes.

Distance education is helping Ghana produce scholars who do not graduate to chase non-existing jobs. Most of the students enrolled in distance education are full-time workers and so when they graduate they get degrees that boost their image and skills at work (Dawson-Brew, Oduro, & Ankomah-Sey, 2009).

Distance education is a global trend. Many countries throughout the world see distance education as an opportunity to make education accessible and affordable to several students who cannot afford to leave their family or to pay high fees at attend college in the traditional face-to-face mode. Countries such Kenya, Nigeria, Sierra Leone, and South Africa have all developed excellent distance education networks offering education to thousands of students at a reduced cost. (Dawson-Brew, Oduro, & Ankomah-Sey, 2009). By participating in it, Ghana is able to benefit from higher educational standards in other countries such as Australia, China, India, the United States, and the United Kingdom.

The distribution of learning centers throughout the country is an innovative approach to making higher education available and accessible to all students in the country. Until this development, students in many parts of the country, especially those in the northern sector, had to travel hundreds of miles to the southern sector each semester to attend college. Finally, distance education has helped to bring higher education to the doorsteps of students who were “unable to meet their educational needs in conventional institutions” (Sampong, 2009, p.15).

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USING HOFSTEDE'S (1980) MODEL AS A PREDICTOR OF THE ATTITUDE TOWARD WOMEN MANAGERS

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ABSTRACT

The opportunity for women to ascend to positions of power varies within different nations. While some progress has been made globally with regard to women as managers within multinational corporations, the participation rate is still very low in comparison to their male counterparts. There are various reasons why the level of participation by women as managers may vary from one nation to the other. The purpose of this paper is to discuss and evaluate a potential framework using Hofstede's original model as a predictor of the variation in global attitude toward women as managers.

Keywords: Hofstede, Women managers

Introduction

Culture is a complex concept with varied definitions. In fact, the attempt to define culture has been on-going for more than a century. For example, Tylor (1891; p. 23) defined culture as "a complex whole that includes knowledge, belief, art, morals, law, custom and other capabilities and habits acquired by man as a member of society." Hofstede (1980, p. 45) defined culture as "the collective programming of the mind, which distinguishes the members of one human group from another." In general, culture is often used to explain the differences in attitude and behavior of individuals. According to Deresky (2008, p. 91), the culture of a society is typified by "shared values, understandings, assumptions, and goals that are learned from earlier generations, imposed by present members of a society , and passed on to succeeding generations.' The shared values form the basis for common attitude, codes of conduct, and expectations that subconsciously guide and control certain norms of behavior Hofstede (1980, p. 25).

In traditionally patriarchal societies for example, one can expect the role of women to be subservient to that of men. These cultural norms and values in a male-dominated society will tend to reinforce and breed attitudes that hinder the hiring and promotion of women to positions of authority within a corporation. The degrees to which women are 'held back' may be mitigated by the existence and enforcement of employment laws within these historically patriarchal societies.

Hofstede's model

Hofstede's (1980) model was developed to aid in understanding the relationship between cultural values and organizational behavior. The goal of the research was to provide an explanation for the way people behave in different cultures. The study used a sample of over one hundred thousand people in more than fifty countries. While Hofstede's framework has been used to explain the variations in the structuring of organizations and the differences in decision making styles across cultures, it can also be useful in explaining the plethora of attitudes toward women managers. In essence, the various dimensions that Hofstede found in his study may be useful in explaining why some nations have a higher representation of females in their managerial ranks than others. Hofstede proposed four value dimensions in his original research. They are power distance, uncertainty avoidance, individualism, and masculinity.

Power distance

Power distance is the degree to which unequal distribution of power in institutions is accepted by a society. In a business context, power distance is an indicator of the hierarchical degree of power and authority. It is expected for example in a high power distance culture that lower level employees will obey the directives from the upper levels of the organizations without question. Research by Peterson et al (1995) indicates that in high power distance societies, there will be a large pool of supervisory personnel where employees at the lower levels of the organization will have low job qualifications. The result is a tall structure that promotes inequality between employees at different levels. Perhaps more importantly, high power distance cultures in general tend to have more patriarchal traditions. Therefore, in high power distance cultures, one can expect a relatively low representation of women in managerial positions. In other words, there should be an inverse relationship between power distance and the attitude toward women managers within a society.

Proposition 1a: The higher the power distance, the more negative the attitude toward women managers

Proposition 1b: The lower the power distance, the more positive the attitude toward women managers

Uncertainty avoidance

Uncertainty avoidance "is the extent to which people in a society feel threatened by ambiguous situations, and have created beliefs and institutions that try to avoid this." (Hofstede, 1980). Societies with high uncertainty avoidance have a high need for security. High uncertainty avoidance societies also have a strong belief in experts and their knowledge. In essence, high uncertainty avoidance can be equated to low risk tolerance and ambiguity. In high uncertainty cultures, there is a preference for the 'tried and true' or 'known'. In a business context, high uncertainty avoidance will translate into organizations with more written rules, managerial preference for lower risk decisions, potentially lower employee turnover, and what may appear to be less ambitious employees. High uncertainty avoidance

may result in personnel that are less likely to use initiative and/or assume responsibility for their actions. Therefore, because of the preference for 'tradition' and low tolerance for risk and ambiguity, it is proposed that

Proposition 2a: In societies with high uncertainty avoidance, there will be more negative attitude toward women managers.

Conversely, it is proposed that

Proposition 2b: In societies with low uncertainty avoidance, there will be less negative attitude toward women managers.

Individualism

Individualism is the extent to which a member of a society is more likely to look after himself or herself. The individualist is also more likely to look after the interest of his/her immediate family while having little or no regard for societal needs. Therefore, the relationship of an individualist to his/her organization is of greater value when it is accompanied by the highest level of personal gain. Conversely, a collectivist culture typically has highly integrated social framework along with emotional dependence, high sense of belonging, and strong belief in 'the group'. Individualism-Collectivism dimension was the focus of an extensive literature review by Triandis (1995). Four defining attributes of the individualism-collectivism dimension were highlighted: conceptions of self, goal relationships, relative importance of attitudes and norms, and emphasis on relationships.

In individualistic cultures, the self is defined as independent of groups. The collectivist's connectedness to in-group members defines his/her self (Markus & Kitayama, 1991). Personal goals have primacy over collective ones in individualistic societies. Therefore, when there is a conflict between individual and collective interests, the individualist will give preference to his/her self interest (Parsons, 1951; Yamaguchi, 1994). The behaviors of individuals are driven by social norms, duties, and obligations in a collectivist culture. Conversely, in individualistic cultures, behavior is the product of personal beliefs, values, and attitudes. This dichotomy with regard to behavior affects decisions that are made in the workplace with regard to male and female employees. In collectivist societies, relationships supersede task performance (Redding, 1993). In individualistic societies, individuals are more focused on the task and oftentimes at the expense of relationships (Kim, Triandis, Kagitcibasi, Choi, & Yoon, 1994). The multiple attibutes of the individualism-collectivism dimension makes it perhaps the most challenging of the Hofstede's dimensions to use in understanding the global variation in attitude toward women managers. The strength of each attribute within the individualism-collectivism dimension may affect attitude toward women managers in cultures that may at face value appear similar.

Proposition 3a: In cultures where the conception of the self is high, there will be more positive attitude toward women managers

Proposition 3b: In cultures where personal goals supersede collective goals, there will be more positive attitude toward women managers

Proposition 3c: In cultures where behavior is driven by personal beliefs, values, and attitudes, there will be more positive attitude toward women managers

Proposition 3d: In cultures where task orientation is valued more than relationships, there will be more negative attitude toward women managers

Masculinity and Femininity

"Masculinity stands for a society in which emotional gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life" (Hofstede & Hofstede, 2005: 402), and "Femininity stands for a society in which emotional gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life" (Hofstede & Hofstede, 2005: 401). Using Hofstede's terminology,

Proposition 4a: The more 'feminine' a culture, the higher the positive attitude toward women managers

Proposition 4b: The more 'masculine' a culture, the higher the negative attitude toward women managers

Discussion and Conclusion

There are indications that women have more opportunities now to enter the upper echelons of managerial ranks in multinational corporations. Nevertheless, there is a significant variation in the attitude toward women managers. The attitude, whether positive or negative, is not the ultimate determinant of success or failure. It is critical that expatriates especially be aware of the degree of negative attitude especially that they may encounter when given an assignment in another country that may not be used to having women in positions of power and authority.

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COMPARISON OF STRATEGIC INTENT TO HOSHIN KANRI

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ABSTRACT

Traditional strategy development processes involve auditing current markets, competitors, and resources followed by strategy formulation and implementation. Hamel and Prahalad proposed a broader view of strategy formulation, called strategic intent, focusing instead on company capabilities, collaboration, and innovation to achieve revolutionary improvement. The thesis of this paper is—organizational decisions in companies employing strategic intent differ from traditional strategy planning methods by communicating a supportable goal, establishing criterion to measure progress, and creating active management processes. Toyota's hoshin kanri system is an example of successful incorporation of strategic intent principles. The author intends to, (a) provide a brief review of strategy and competitive advantage literature, (b) review the concepts of strategic intent, and (c) demonstrate how Toyota's system employs strategic intent effectively.

Keywords: Strategy, Lean, Toyota, Hoshin Kanri

Background

Turbulent markets force business leaders to identify and capture opportunities quickly to gain competitive advantage (Sull, 2010, p. 1). Executives must create a strategy to set corporate direction and destination, using physical, financial, and human resources effectively (Getz, Jones & Loewe, 2009, p. 23). Traditional strategy development processes involve auditing current markets, competitors, and resources followed by formulation and implementation (Jalham & Abdelkader, 2006, p. 589). Hamel and Prahalad (2005) proposed a broader view of strategy formulation, called strategic intent, focusing instead on company capabilities, collaboration, and innovation to achieve revolutionary improvement.

Thesis Statement

The thesis of this paper is—organizational decisions in companies employing strategic intent differ from

traditional strategy planning methods by communicating a supportable goal, establishing criterion to measure progress, and creating active management processes (Hamel & Prahalad, 2005). Toyota's hoshin kanri system is an example of successful incorporation of strategic intent principles (Liker & Hoseus, 2008, p. 427). The author intends to: (a) provide a brief review of strategy and competitive advantage literature, (b) review the concepts of strategic intent, and (c) demonstrate how Toyota's system employs strategic intent effectively.

Brief Review of Strategy and Competitive Advantage Literature

Peng and Zhou (2006) in their work on global strategy research grouped citations from 393 articles into the major categories of environment, leadership, and strategy. The three categories contained 16 subfields with relative frequency information (Peng & Zhou, 2006, p. 495). The primary subfields of strategy research included culture, internal coordination, strategy formulation, and implementation (Peng & Zhou, 2006, pp. 495-496). Hamel, the co-author of Strategic Intent, was the most frequently cited author on strategy and strategic alliances (Peng & Zhou, 2006, p. 493).

Four major categories arise from the strategy literature dealing with culture: (a) teamwork, (b) structure, (c) communication, and (d) leadership (Peng & Zhou, 2006). The teamwork research focuses on creating a learning culture using cross-functional groups (Hirst, Van Knippenberg & Zhou, 2009, p. 280; Levin & Gottlieb, 2009). Leaders should ensure those cross-functional teams contain capable individuals trained in both teamwork and problem solving (Cooper & Kleinschmidt, 2007: Hamel, 2006). Executives control traditional strategic planning, so researchers studied inclusion of lower level employees as a means to generate broader strategic options (Liedtka, 2008, p. 242; Wong & Chin, 2007). Citing Toyota's learning culture, Hamel (2006) believed real competitive advantage resulted from harnessing the intellectual capabilities of all employees.

Research on strategic coordination included internal coordination and business alliances (Peng & Zhou, 2006). Four out of five jobs currently involve coordinating goods, services, or information, so researchers focus on improving the effectiveness of internal collaboration (Beardsley, Johnson & Manyika, 2006, p. 54). These knowledge-based resources allow companies to respond in dynamic situations because the company's value resides in its people, not in physical resources alone (Gagnon, Jansen & Michael, 2008; Lopez, 2005, pp. 662-663; Sull, 2010). Recognizing the value of human capital, researchers searched for means to locate, train, and engage workers in both daily strategy formulation and implementation (Brinkshaw, Hamel & Mol, 2008; Hamel, 2006; Liedtka, 2008; Liker & Hoseus, 2008; Mantere & Sillince, 2007).

The most frequently cited research on external coordination involved forming strategic alliances (Brinkshaw et al., 2008; Peng & Zhou, 2006). Using a resource view of competitive advantage, researchers investigated the broader view of the organization to include the supply chain, financial institutions, and governmental entities (Bretherton & Chaston, 2005). Beginning in the 1970s researchers studied network models for strategy management incorporating organizational boundaries,

business effectiveness, and strategy processes to evaluate strategy management practices (Hakansson & Snehota, 2006).

The areas of process design and employee contribution formed the main topics in strategy formulation research (Peng & Zhou, 2006). Research on the process of strategy formulation began with either a resource-based approach, concentrating on physical and environmental factors, or a knowledge-based approach, focusing on employee capabilities (Bhimani & Langfield-Smith, 2007; Bretherton & Chaston, 2005; Hakansson & Snehota, 2006; Lopez, 2007; Lei & Slocum, 2005; Pun, 2005). Literature on the resource-based approach covered a range of topics from evaluating resources (Saunders, Mann & Smith, 2007; Sull, 2010) to making connections between strategy and practice (Brauer & Schmidt, 2008; Lei & Slocum, 2005; Pun, 2005) to how companies employ resources (Getz et al., 2009; Hamel, 2006; Hamel & Prahalad, 2005; Haugen & Davis, 2010; Kaplan & Norton, 2005; Lopez, 2005; Speculand, 2009; Tapinos, Dyson & Meadows, 2005).

The two primary categories of knowledge-based research are employee inclusion and employee engagement (Hamel, 2006). A small group of executives typically creates strategy, so several researchers investigated the effects of employee inclusion upon strategy formulation (Hakansson & Snehota, 2006; Hamel, 2006; Hamel & Prahalad, 2005; Liedtka, 2008; Levin & Gottlieb, 2009; Lopez, 2005). In order to develop the trust necessary for effective worker inclusion, researchers often studied the effects of employee engagement on strategy formulation (Auguste, Harmon & Pandit, 2006; Cleveland, 2006; Cooper & Kleinschmidt, 2007; Hirst et al., 2009; Hodgkinson, Whittington, Johnson & Schwarz, 2006; Naor, Goldstein, Linderman & Schroeder, 2008; Perdomo-Oritz, Gonzalez-Benito & Galende, 2009; Sull, 2010; Whitford & Moss, 2009; Worley & Doolen, 2006).

One of the largest strategy research sectors is the effectiveness of strategy implementation (Peng & Zhou, 2006) including the subfields of planning and engagement (Hamel & Prahalad, 2005). The nature of the company and competitive environment typically shaped the philosophical approach executives took toward strategic planning, with resource-based viewpoints focusing more on physical resources and knowledge-based views being more employee centered (Bhimani & Langfield-Smith, 2007; Lei & Slocum, 2005; Lopez, 2005). Typical strategy planning follows the resource-based approach with executives examining past performance, evaluating competitors and markets, setting the strategy, then having middle managers determine the specific performance targets (Kaplan & Norton, 2005, p. 74). Researchers found companies received value by including multiple levels of employees in the planning process to incorporate new ideas and perspectives (Brinkshaw et al., 2008; Hamel, 2006; Hamel & Prahalad, 2005; Hodgkinson et al., 2006; Jalham & Abdelkader, 2006; Kaplan & Norton, 2005; Saunders et al., 2007; Speculand, 2009; Sull, 2010).

Initial research on employee engagement concentrated on developing trust to achieve commitment (Thomas, Zolin & Hartman, 2009). Vital to building trust is communication of both the overall strategic intent, and the individual action linkages driving results (Brauer & Schmidt, 2008; Lei & Slocum, 2005; Pun, 2005). Sull (2010) emphasized the need to develop three to five critical objectives to avoid overwhelming the organization with too many priorities (p. 8). One technique proposed is the use of

strategy workshops involving people throughout the organization, offering opportunity for communication and direct interaction with executive leaders (Hamel & Prahalad, 2005; Hamel, 2006; Jalham & Abdelkader, 2006; Levin & Gottlieb, 2009). Studies also reported the critical nature of feedback on engagement, including clear goals, visible metrics, and frequent communication by executives (Bhimani & Langfield-Smith, 2007; Brauer & Schmidt; Levin & Gottlieb, 2009; Thomas et al., 2009).

Summary of Strategic Intent Concepts

Researchers presented a case for dramatic changes in strategic planning, striving for management innovation using stretch goals while involving more employees in strategy creation (Hamel & Prahalad, 2005). Companies relying on typical resource allocation strategic planning systems tend to focus reactionary responses to competitive pressures (Hamel & Prahalad, 2005, p. 148). Such incremental responses leave companies trying to catch industry leaders, wasting resources and falling further behind (Hamel & Prahalad, 2005, pp. 148-149).

Innovative leaders create a passion within their companies to be the best in the world, shifting culture from reactive to proactive (Collins, 2006). Hamel and Prahalad (2005) proposed three steps leaders can take to create strategic intent within their organizations; (a) envision the desired goal of industry leadership, (b) establish criterion to track progress toward the goal, and (c) develop an active management process to drive the effort (p. 149). The combination of metrics and active management will help employees see the connection between vision and action, improving motivation (Hamel & Prahalad, 2005, p. 150; Liedtka, 2008, p. 242).

Collins' (2006) research found a core purpose in successful companies based on an activity in which they could be the best in the world, feel passionate about, and earn money. By focusing on a goal outside current business realities, leaders eliminate the tendency for reactionary thinking, which limits innovative strategies (Hamel & Prahalad, 2005, p. 152). Typical strategic planning systems concentrate on current competitors, resources, and market forces, focusing manager's attentions more on problems than on opportunities (Hamel & Prahalad, 2005, p. 152). All stakeholders need to share a consistent and coherent vision of the desired future state, before they focus on implementation tactics (Getz et al., 2009).

Tracking progress toward a strategic goal requires frequently measured objective criterion to monitor progress and maintain employee motivation (Hamel & Prahalad, 2005). The criteria must fit the strategy, allowing leaders to monitor resource allocation, evaluate performance, and link actions to progress toward the strategic goal (Tapinos et al., 2005, p. 371). Research indicated 60% of companies fail to link management budgets to overall strategic priorities, resulting in frustrated employees who fail to see the purpose of their efforts (Kaplan & Norton, 2005, p. 74). Structured metrics connecting strategy priorities to tactical actions allow leaders to make early course corrections in dynamic business situations (Kolar, 2009).

With clear targets and effective metrics in place, managers must then create an active management process to (a) focus on the important elements of the strategic goal, (b) motivate employees by explaining the importance of the goal, (c) sustain enthusiasm during uncertain times, and (d) use the strategic intent to guide resource allocations (Hamel & Prahalad, 2005, p. 150). The challenge is for leaders to develop a management system that clearly differentiates between the strategic goals and the tactical methods, allowing employees to balance short-term results with long-term direction (Getz et al., 2009, p. 18). An implementation plan with multiple intermediate goals allows managers to tackle low risk projects while maintaining overall progress toward the strategic destination (Getz et al., 2009, p. 23).

When managers focus on the important elements of the strategic goal, they communicate the essential elements of the target to motivate employee commitment (Liedtka, 2008, p. 242). Research on employee trust and engagement indicated the quantity of communication was more important for executives while communication quality was critical for direct supervisors and peers (Thomas et al., 2009). A critical feature of strategic intent is a goal worthy of support beyond the traditional shareholder value statements offered by many publicly traded companies (Hamel, 2006; Hamel & Prahalad, 2005, p. 152). Researchers found spreading information about the purpose, selection, and intent of the strategy resulted in employee commitment and behaviors aligned with the overall goal (Gagnon et al., 2008, pp. 430-431).

Strategic intent goals set long-term direction while offering flexibility to achieve short-term targets (Gagnon et al., 2008). Frequent communication of incremental progress sustains employee enthusiasm by illustrating the relationship between their activities and the goal, even in uncertain times (Hamel & Prahalad, 2005). Under short-term pressure for results, managers may lose sight of strategic goals, so executives must create a culture supporting financial commitments and strategic direction (Tapinos et al., 2005; Hamel & Prahalad, 2005).

Once the organization understands the strategic intent, leaders must allocate resources in a manner consistent with the overall goal (Hamel & Prahalad, 2005). Involving financial leaders in the strategy formulation stage helps align the policies and measurements that drive resource allocation at the strategy implementation level (Bhimani & Langfield-Smith, 2007; Jalham & Abdelkader, 2006, p. 591). By frequent measurement and feedback of key indicators, leaders make incremental adjustments toward the goal and avoid abrupt changes that harm employee morale (Hamel & Prahalad, 2005; Tapinos et al., 2005).

Toyota's Hoshin Kanri Process Compared to Strategic Intent

In April 2002, Toyota adopted Global Vision 2010 with the phrase "Innovation into the Future- A Passion to Create a Better Society" (Toyota Motor Corporation, 2003, p. figure 3). This long-term goal embodies two principles of strategic intent by identifying the essence of winning and setting a target worthy of personal commitment (Hamel & Prahalad, 2005). Toyota's philosophy of long-term thinking provides a

stable base for processes, people, and problem solving, reducing the impact of short-term business fluctuations (Liker & Meier, 2006, p. 26). Throughout the next section, the author proposes to demonstrate how Toyota's strategy system embodies the principles of strategic intent.

Setting long-term targets begins the process called hoshin kanri, or strategy deployment (Jusko, 2007). The hoshin process incorporates the company's overall objectives and goals, spreading them throughout the organization so local leaders align action plans to the company's strategic direction (Jusko, 2007). Guided by the hoshi vision, leaders use the strategy process to translate the target condition into measurable goals, continually adjusting, using cross-functional teams (Jusko, 2007). Toyota uses long-term plans with short-term objectives to provide continuity of purpose, illustrating the strategic intent principle of clear ends with flexible means (Hamel & Prahalad, 2005; Liker & Meier, 2006).

Typical strategic planning targets flow from the executive team with little input by lower levels (Liedtka, 2008, pp. 241-242). Toyota avoids this limiting approach by a formal system for gaining consensus called nemawashi or catchball (Liker & Meier, 2006). At each stage of the process, concepts, ideas, and plans pass through the matrix of stakeholders, with the responsible leader ensuring consensus using multiple negotiation sessions before finalization (Liker & Hoseus, 2008). Typical goals from the executive level might include J.D. Power Number One customer satisfaction rating, number one market position, or 60% warranty reduction (Liker & Hoseus, 2008, p. 438).

With consensus on the overall strategic goal, Toyota follows the strategic intent principle of establishing criteria to track progress (Hamel & Prahalad, 2005). Each level within the company aligns local goals and activities with the overall strategic intent by cascading from corporate, to country, to plant (Liker & Hoseus, 2008). Within each plant, teams in each functional area develop key performance indicators based on previous performance and aligned with the overall hoshin (Liker & Hoseus, 2008). Numerical standards and measurements help leaders translate strategic intent into objective visual criterion posted for all employees to see (Liker & Meier, 2006).

The final principle of strategic intent is creation of an active management process, both to control the activities and provide feedback into the strategy process (Hamel & Prahalad, 2005). From the plant management level, the plan moves to the group leader level where teams create action plans to affect the key performance indicators (Liker & Hoseus, 2008). The workers join the group leaders in negotiation with managers, ensuring employee commitment because they were part of the process of creating the action plans and because they understood the company's strategic intent (Liedtka, 2008; Liker & Hoseus, 2008). Employee participation in the planning phase demonstrates the first two principles of Hamel and Prahalad's (2005) active management process; focus on the essence of winning and motivate through communicating the value of the goal.

The third stage of the active management process is sustaining enthusiasm during change (Hamel & Prahalad, 2005). Breaking the overall goal into smaller parts allows workers to experience short-term success, even when challenging business conditions divert the path to the overall goal (Hamel & Prahalad, 2008). Toyota uses the Deming cycle of plan-do-check-act to create a series of small improvements with linkage to the overall goal through layered exchanges, involving employees at all

levels (Liker & Hoseus, 2008). For example, the paint shop in Toyota's Kentucky plant experienced a rise in overtime costs and a reduction in units per hour due to excessive cleaning time and walking time (Liker & Meier, 2006). Solving the problem in the paint area allowed the plant staff to achieve production targets, which in turn supported the corporate goal of becoming the top automaker in the United States (Liker & Meier, 2006).

The final stage of Hamel and Prakald's (2005) active management process is using strategic intent to guide resource allocation. Toyota uses a layered management approach with visual metrics and collaboration meetings to apply resources for problem identification and resolution (Liker & Hoseus, 2008). Status areas throughout the workplace contain visual displays of plant-wide key performance indicators, local key performance indicators, and daily activities supporting the company's strategic intent (Liker & Hoseus, 2008). Various levels of employees meet in the status areas throughout the day to solve problems, report findings, and negotiate for resources (Liker & Hoseus, 2008).

Conclusion

Research indicates typical strategy planning methods frequently fail to produce the intended results (Liedtka, 2008, p. 241). Rejecting the paternalistic method of strategic planning only coming from executives, Hamel & Prahalad (2005) proposed the strategic intent model with multiple levels of employee involvement. Broad participation in strategy formulation helps employees to see the value of the corporate goals, enhancing engagement (Liedtka, 2008). Defining clear criteria for management and results makes it easier for managers to achieve short-term targets supporting the long-term goal (Liker & Hoseus, 2008). The author examined the literature on strategy, summarized the principles of strategic intent, and compared Toyota's hoshin kanri practices to the strategic intent model.

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HIGHER EDUCATION AND ECONOMIC GROWTH IN NORTH AMERICA: A COMPARISON OF QUEBEC WITH NEW YORK STATE

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During the last decades, North American countries have realized the evidence of the interdependence of their respective economies. This fact has led to the signature of the North American Free Trade Agreement (NAFTA). The neighboring states have approved this initiative since they are the first beneficiaries of NAFTA. In this regard, the case of Québec and the state of New York is an interesting example.

Many studies have analyzed the positive effect of NAFTA in terms of flow of goods between the United States of America (USA) and the Canadian provinces. The Conference of New England Governors and Eastern Canadian Premiers illustrated the importance of economic relations between the two countries. There are studies, conducted by the Statistical Institute of Québec (ISQ), which deal with the comparison of Québec and the United States as a country. In our knowledge, there is no study that has analyzed the impact of higher education on Québec and New York State economies.

There is a need to investigate the real effect of higher education on Québec and New York State economies. To achieve this objective, we will (1) compare the accessibility level to higher education in Québec and New York State; (2) compare the college pricing, educational attainment, literacy rate, education expenditures, higher education appropriations, enrollment rates and graduation rates during the last decades in Québec and New York State; and (3) analyze the impact of educational indicators on economic growth of Québec and New York State. Findings of this study will contribute to the academic literature on higher education and will have implications for state and provincial government policy makers responsible for investment in higher education.

LEADING GROUPS TO CREATE HEALTHY CULTURE THROUGH ACCOMPLISHING TASKS ALIGNED TO STRATEGY

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ABSTRACT

This study examined the link between the consistency of self-evaluation versus peer-evaluation of managers' skills and the level of relational stress in an organization and was based on two models: (a) the Competing Values Framework (CVF), which measures different management skills of individuals in an organization and (b) the Healthy versus Toxic Organization Model, which focuses on the stress level in partnerships. The researchers hypothesized that the lower the stress in the organization the more consistent the results will be between self-evaluation and peer-evaluation. In an empirical analysis, this relationship was most visible in the area of managers' facilitator skills. With strong facilitator skills managers can lead their organizations effectively and stay focused on maintaining strategic alignment. The study also examined how management skills could be most effective in developing a healthy work culture.

Keywords: culture, alignment, skills, evaluation, stress

Introduction and literature review

Successful companies exist when employees and other stakeholders interact in a healthy manner while focused on the accomplishment of critical tasks. How to develop a positive culture while maintaining strategic alignment among the stakeholders was the subject of this research. Company directors' behaviors were assessed by their peers in order to determine positive culture, level of stress, and strategic alignment. This study examined the link between the consistency of self-evaluation versus peer-evaluation of a manager's supervisory skills and the level of stress between individuals in the

organization. The researchers hypothesized that the lower the stress in the organization the more consistent one's self and peer management skill evaluation will be. This research also determined how management skills might be most effective in developing a healthy work culture.

A company spends a significant part of its budget on employee training. This training is aimed at developing new skills that will improve the effectiveness and efficiency in accomplishing tasks. Essential skills to possess in the company are social skills, which are needed to interact effectively with others (Cote & Miners, 2006). Cote and Miners reported that employees with high cognitive intelligence out-perform those with low cognitive intelligence. Employees with low cognitive intelligence perform at higher levels if they also have a high level of emotional intelligence. Emotional intelligence is the appraisal and expression of emotions in oneself, appraisal and recognition of emotions in others, regulation of emotions in oneself, and use of emotions to facilitate performance (Goleman, 1995). Cote and Miners' findings demonstrated that higher emotional intelligence tends to compensate for low cognitive intelligence in regards to job performance (Baron & Markman, 2003).

Witt & Ferris (2003) investigated the relationship between conscientiousness, the accomplishment of tasks, and social skills. Conscientiousness, one of the five major dimensions of personality, is defined by an individual who has competence, order, dutifulness, achievement, self-discipline and deliberation as part of his personality (Costa & McCrae, 1992). Individuals who are very conscientious showed higher task performance than those who are low in conscientiousness and high in social skills. Those who are high in conscientiousness (task) but low in social skills (culture) may come across as unreasonable, authoritarian, demanding, inflexible, and this may lead others in their teams to avoid working with them, creating negative work environments (Witt & Ferris). Employees who were low in social skills with high levels of conscientiousness actually reduced job performance. Witt and Ferris concluded that the importance of social skills on the job in completing tasks is essential.

Social scientists have studied the dynamics of groups and their impact on the individual and the organization. Forsyth (1999) refers to a group as a collection of two or more individuals who share a common goal, have a stable pattern of relationships and perceive themselves as being a group. Benne and Sheats (1948) noted that roles within the group tend to be differentiated between task-oriented roles and relations-oriented roles (socio-emotional). The categorization of task and relations roles in looking at group dynamics within the organization informed the current research study.

In the mid 1970s Hare (1976) examined the impact of cohesiveness and the lack of cohesiveness in groups. Groups, which lacked cohesiveness and where individuals did not like each other, often worked against each other. Current research shows that highly cohesive groups are ones where individuals accept the group's goals, help work towards meeting goals, have a sense of belonging to the group, and have higher performance (Beal et al., 2003). Data on group cohesiveness indicate that cohesiveness is a positive trait as individuals in cohesive groups enjoy belonging to the group, accept and accomplish the group's goals, are much less absent from their jobs and have less voluntary turnover (Aronson & Mills, 1959; Cartwright, 1968; George & Bettenhausen, 1990; Long, 1984).

Strategic alignment is the developing, evaluating, and implementing of actions that will enable a company to reach its long-term objectives. This is done through the development of a mission, vision, policies and plans, followed by an allocation of resources to implement these. Early researchers in the discipline of strategic management included Chandler (1962); Selznick (1957), with the SWOT analysis; Ansoff (1965), with gap analysis; and Drucker (1954), with managing by objectives (MBO). Pascale and Athos (1981) claimed the reason for Japanese corporate success in the 1970s resulted from their superior management techniques. They divided these techniques into seven aspects, known as the McKinsey 7S model. This model argued the need for alignment of strategy with structure, systems, staff, style (culture), skills, and shared values.

Peters and Waterman (1982) examined the keys to excellence in organizations. Collins and Porras (1994) conducted empirical research on what makes great companies and found that successful companies encouraged and preserved a core ideology that nurtures the company. Geus (1997), the former CEO of Shell Gasoline, identified four key traits of companies that had prospered for more than fifty years: (a) sensitivity to the business environment, (b) cohesion, (c) tolerance, and (d) decentralization. Each of these traits depends on the ability to build relationships internally or externally. Kaplan and Norton (2006) are known in the field of management for their research on alignment issues within the organization. Their approach has been to take the business strategy and develop a balanced scorecard and strategic map to align the different group and department efforts and performance. When one sees an organization that is dysfunctional and underperforming, the lack of alignment is readily apparent.

Conceptual Models

Two conceptual models were used as the basis for this research. The Competing Values Framework (CVF) was developed to measure the management skill of individuals in an organization (Quinn et al., 2007). Secondly, the Healthy versus Toxic Organization Model was utilized because it measures the stress in partnerships from a task as well as a culture dimension (Moore, 2006).

CVF has been used extensively in research on organizational and leadership effectiveness and has become a tool for teaching management and leadership in universities. The Competing Values Framework is divided into four quadrants representing the Human Relations, Internal Process, Rational Goal, and Open Systems management models (Figure 1). They are associated with the action words collaborate, control, compete, and create, respectively. Within each of these quadrants Quinn noted there are two management roles, bringing the total management roles of the CVF to eight (Quinn et al., 2007).

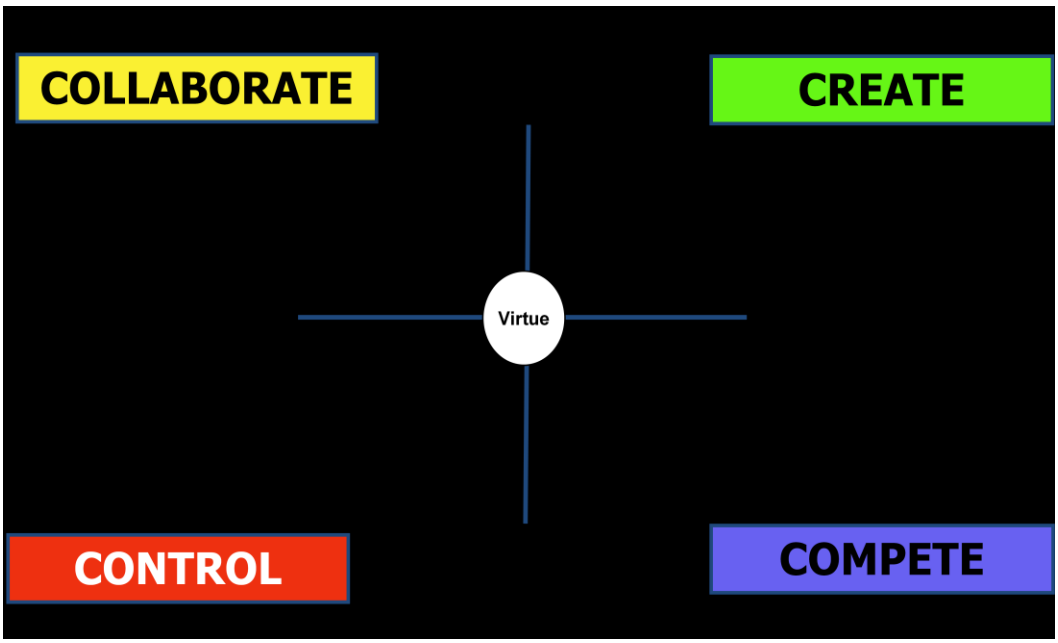

Figure 6. Adapted Competing Values Framework (Quinn et al., 2007).

Benne and Sheats (1948) noted that roles within the group tend to be differentiated between task-oriented roles and relations-oriented roles. Managers have two main responsibilities. The first is for their unit or department to be efficient and effective at accomplishing their goals. Secondly, managers must balance their departments' needs with the overall goals of the organization. This is accomplished through organizational alignment and adaptation of their unit or departmental goals.

The Healthy versus Toxic Organization Model stems from research on virtue and survival behaviors in an organization (Moore, 2006). Data show when virtue behaviors of truth, vision and service were present in organizational partnerships, growth was present. Inversely, when survivalist behaviors of deception, use of fear, pride or greed were present in organizational partnerships, toxicity was present. Stress in an organization, either internal or external, distorts a department's behavior to adapt and cope with the stress and interdepartmental dysfunction.

The Competing Values Framework, with the Strategic Alignment Model and the Healthy versus Toxic Organization Model, combine to clarify some of the organizational stress and dysfunction in the organization. Intuitively, the relationship between healthy partnership behaviors and strategic alignment on organizational goals and priorities can be seen. As relationships thrive in healthy partnerships, strategic alignment is improved and organizational goals are achieved. Inversely, as relationships become toxic and survivalist, relationships deteriorate and organizational goals are lost to more immediate personal or departmental goals. When there is a sustained unhealthy toxic culture developed, silos are created (refers to the imagery of isolated work units which do not communicate and are hostile one to another), and the organization loses its strategic focus and effectiveness. For

example, a sales department is in the open systems model and is essential to the company in securing new business and sales. However, the sales department must also be concerned about the success of the operations department, which is found in the rational goal model quadrant. If the sales department does not take into consideration the operation's departmental goals and constraints, it risks creating an unhealthy and toxic culture by selling products that meet its specific sales department goals but are the difficult to produce and thus damage the operations departmental goals. Stress and conflict would therefore arise and silos develop between the sales and operations department because they are competing one against another, each believing the other is a barrier to departmental goals. In an organization there will always be stress and competing demands for resources and accomplishment of goals. However, if this normal organizational stress is dealt with in a healthy fashion, the organization will work as a team and achieve its goals and objectives. The Competing Values Framework provides a method to look at specific feedback from peers and compare it to the self-assessment of each department. Based on a scientific way of approaching these differences, a road map for organizational effectiveness can be established.

Methodology

The data for this research were collected in a small manufacturing company in South Carolina with 200 employees. The chief executive officer (CEO) opened his company to the researchers in order to understand the relationship between healthy and toxic organizational behaviors and their impact on organizational effectiveness. The company is comprised of six departments (i.e., sales, operations, engineering, quality, human resources and finance). The directors of these departments are called the "executive leadership." Before administering the surveys, the researchers trained the executive leadership in the CVF and Healthy versus Toxic Organization models. This step was essential in order to develop a common language and a way consistently to evaluate themselves and each other. The training was completed through two quarterly off-site training sessions.

Survey instruments

Three survey instruments were used in data collection: (a) a Competing Values Framework self-assessment survey, (b) a Competing Values Framework peer assessment survey, and (c) an inter-department service evaluation survey to assess the partnership level of another department from a task and a culture dimension. The first survey administered was a self-assessment survey comprised of 36 questions that gives eight scores on a scale of one to seven for each of the eight management skills. A score of seven is high indicating mastery or proficiency in each management skill. The second survey was a peer assessment of another's management skill and comprises 32 questions that give eight scores on a scale of one to seven for each of the eight management skills (Figure 2). A score of seven is high indicating that the manager has achieved mastery or proficiency in each management skill. The third survey was a peer assessment about the partnership with each of the other departments in the organization. Using a scale ranging from one to eight, partnerships are evaluated and two scores are given. The first score is given for level of accomplishment of tasks in the partnership. The second score is given for the level of cohesiveness in culture in the partnership.

	Tasks		Culture:
8	We are surpassing our expectations	8	We experience unity, accountability, trust and contentment
7	We are achieving most of our shared goals	7	We experience acceptance, transparency & commitment
6	We are cooperating and beginning to meet shared goals	6	We engage in constructive conflict (no personal attacks nor passive aggressive behavior)
5	We have a shared plan & are working together	5	We are open to listen to each other but need to improve on team problem solving
4	We are disorganized & have no shared plan	4	We have a lack of harmony and lack of cooperation
3	We are not very committed to each other	3	We work only by the rules
2	I just want to get by	2	I do my job -- you do your job
1	One partner does not care about results	1	One partner says do it my way

Tasks: Quality of Service:

1. Effectiveness
2. Responsiveness
3. Correctness
   - 3.1. Completeness / incompleteness
   - 3.2. Consistency
   - 3.3. Traceability
   - 3.4. Provably correct

Culture: Quality of Service:

1. Shows respect
2. Truthful
3. Positive in resolving problems
   - 3.1. Healthy conflict around issues
   - 3.2. Supportive & helpful
   - 3.3. Consistent in feedback

Figure 7. Inter-departmental Customer Survey

The first and second surveys can be compared to see the accuracy of the department's self- perception versus its peers' perception. These results can also be used to evaluate its organizational alignment with respect to its organizational fit on the CVF wheel. Each department should be strong within the quadrant that it represents. Deviations from the norm can be observed.

In the organization, department directors should score high in the following roles/quadrants:

Human Relations Model (collaborate)	Human Resource department
Internal Process Model (control)	Finance & Quality departments
Rational Goal Model (compete)	Operations department
Open Systems Model (create)	Engineering and sales departments

In order to represent graphically the results of the third survey, a scale was developed to clarify the division between healthy and toxic organizational dynamics and is based on Lencioni's (2002) five dysfunctions of a team model (Figure 3). Based on the scores from the survey, departments can be placed on the pyramid, clarifying the realities of the departments in the company.

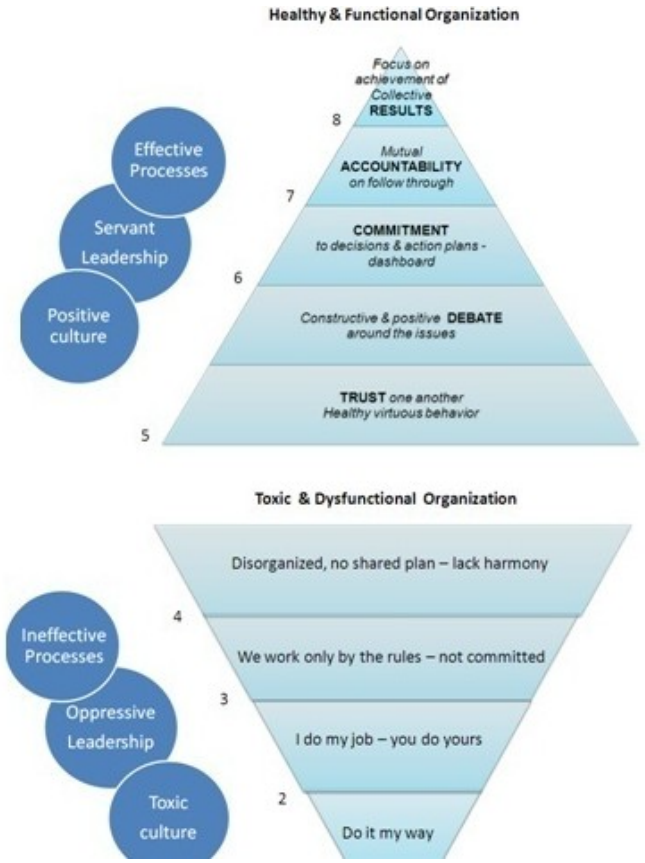

Figure 8. The Division between Healthy and Toxic Organizational Dynamics. Based on Lencioni's (2002) Five Dysfunctions of a Team Model

Findings

The data for this research are presented in three parts: (a) the differences and correlation between the department manager's self-evaluation and his peer evaluation of management skill; (b) the measurement of the stress level, evaluated by peers, in terms of task and culture; and (c) the correlation between the first and second sets of data.

	Human Relations Model				Open Systems Model				Rational Goal Model				Internal Process Model			
	Facilitator		Mentor		Innovator		Broker		Producer		Director		Coordinator		Monitor	
	Peer	Diff.	Peer	Diff.	Peer	Diff.	Peer	Diff.	Peer	Diff.	Peer	Diff.	Peer	Diff.	Peer	Diff.
Sales	4.3	-1.7	3.9	-2.1	5.5	-0.5	6.3	-0.4	5.2	-0.8	4.5	-0.9	4.5	-0.1	5.6	0.4
Operations	4.5	-1.1	4.2	-0.3	4.9	-0.6	5.4	0.4	4.7	-0.9	4.6	-0.2	4.4	-0.2	5.1	0.1
Engineering	4.8	-1.4	5.2	0.5	5.1	-0.9	4.6	0.1	4.5	-1.3	4.5	-0.7	4.7	0.7	5.5	1.8
Quality	5.5	0.7	5.9	1.9	4.9	0.9	5.5	0.5	5.0	0.2	5.2	0.8	5.2	0.8	5.6	1.1
Human Res.	4.9	-0.4	4.4	-1.8	4.6	-0.2	5.4	0.9	4.6	-0.6	5.0	0.8	5.1	0.5	4.2	-0.8
Finance	5.4	-1.0	6.2	-0.8	4.9	-0.6	5.5	-0.2	5.3	-0.9	5.4	-1.0	5.9	-0.5	6.0	-0.5
Purchasing	5.5	-0.5	6.3	-0.7	5.2	0.2	6.3	-0.2	5.4	-0.2	5.4	-1.1	5.8	0.8	5.6	-0.9

Table 9 . *Differences Between Self Perception and Peer Perception of Management Skill*

Table 1 shows the difference between the self-assessment and peer assessment of eight management roles for each department manager. A negative difference indicates that the peer assessment was lower than the self-assessment. While this table shows where the discrepancies exist between self and peer evaluations, a manager's strength or weakness cannot be measured by these differences.

The sales, engineering, and quality managers have two or more scores that are considerably different from their peers' perception. Furthermore, the quality manager underestimated her ability in all eight roles. Finally, the researchers observed that the sales and finance manager overestimated their abilities in almost all eight roles, and the sales manager was not perceived by his peers as being as effective in the human resource quadrant.

In order to determine the perceived strength of a manager's skill, scores of 5.8 to 7.0 were considered strengths. In the facilitator, innovator, producer, and director roles, none of the managers scored a 5.8 or above. In the mentor role, the purchasing, quality, and finance managers scored a 5.8 or above. In the coordinator role, the purchasing and finance managers scored a 5.8 or above. In the broker role, the purchasing and sales managers scored a 5.8 or above. Finally, in the monitor role, the finance manager scored a 5.8 or above.

Taking the difference of self-assessment versus peer assessment of management skills with a rating of 5.8 or above indicates the following information. Scores varying more than 1.5 will be noted as significant. Using the CVF model in the organization, department directors should score high in the following roles/quadrants:

Human Relations Model (mentor & facilitators)	Human Resource department
Internal Process Model (coordinator & monitor)	Finance & Quality departments
Rational Goal Model (producer & director)	Operations department
Open Systems Model (innovator & broker)	Engineering and sales departments

	Human Relations Model				Open Systems Model				Rational Goal Model				Internal Process Model			
	Facilitator		Mentor		Innovator		Broker		Producer		Director		Coordinator		Monitor	
	Peer	Strategic Alignment	Peer	Strategic Alignment	Peer	Strategic Alignment	Peer	Strategic Alignment	Peer	Strategic Alignment	Peer	Strategic Alignment	Peer	Strategic Alignment	Peer	Strategic Alignment
Sales	-		-			+	+	+								
Operations	-		-							+		+	-	+		
Engineering	-					+										
Quality	+	+	+													+
Human Res.				+											-	
Finance			+							+			+	+	+	+
Purchasing	+	+	+				+						+	+		

Table 2. *Strategic Alignment of Each Department with Peer Perception*

Table 2 illustrates the alignment or lack of strategic alignment of the departments in regard to their perceived management strengths. The strongest alignment exists in the company when the department's perceived management strength is in the appropriate strategic area. This table notes with a + each department's perceived management role strength and a – for a perceived management

weakness. In the secondary columns entitled strategic alignment, the strategic area of needed management strength is noted with a +. Overall, three of the seven managers scored 5.8 and above in peer evaluation on mentor skills, showing that this is a top management strength for these managers. A manager who is a good mentor is desirable for a company which endeavors to create a collaborative culture where team building and communicating effectively are valued. These collaborative skills are essential in the high pressure environment of manufacturing where the company faces constant changes because some of the pressure might be coming internally from managers of other departments who tend to show traits of a dictator rather than a facilitator.

It is rather unexpected to find that the quality manager scores high in the mentor skill but not high in the coordinator or monitor skill. The fact that quality managers perform as mentors instead of monitors points to some distortion of alignment in the organization. It may be natural that the sales manager turns out to a good broker, but there appears to be a clash between his perception and the perception of his peers as to the role of an effective facilitator and mentor. His peers seem to think that he is not a good team player, contrary to what he thinks.

It is also interesting to note that the operations, engineering and human resource managers are not seen to have strong management skills by their peers. The operations and engineering departments should be actively pointing the company toward their customers and the external stakeholders; however, if they are focused on developing the facilitator and mentor skills exclusively, they may become distracted and not focus on the market or their customers because of the dominant clan culture.

Table 3 represents the consistency between the department self-perception versus peer perception of management skills. There are two strong negative correlations and two strong positive correlations above the 80th percentile. The strong negative correlation exists in the sales manager assessing himself highly in the mentor and monitor skills, but his peers do not. A strong positive correlation exists where the executive leadership finds the sales director strong in the broker skill and the engineering director strong in the innovator skill.

	Human Relations Model		Open Systems Model		Rational Goal Model		Internal Process Model	
	Facilitator	Mentor	Innovator	Broker	Producer	Director	Coordinator	Monitor
Sales	-0.02	-0.89	0.58	0.81	-0.10	-0.11	-0.54	-0.87
Operations	-0.25	0.36	0.30	0.13	0.11	0.54	0.44	0.00
Engineering	0.31	0.20	0.80	0.44	0.27	0.03	0.51	0.62
Quality	0.37	0.12	-0.16	0.09	0.15	0.48	-0.04	0.08
Finance	0.35	0.59	-0.63	0.29	-0.76	-0.04	0.34	-0.70
Purchasing	0.77	0.33	0.39	0.60	0.21	0.37	-0.29	0.50

Table 3.

Correlation Coefficient Between Self and Peer Perception by Department and Management Skill

The sales director is recognized as very strong in the broker role, but his peers perceive him to be low in the internal management skills of coordinator, monitor, facilitator, and mentor. Two explanations can be drawn from the sales director's assessments showing him to be overconfident of his human relations and internal process abilities. First, he could be involved internally in the company with the development of quality, production, and engineering but is not effective in working with these departments in a healthy and cohesive way. Secondly, he could be not involved internally in the company and spending his time with external customers but scoring himself to be strong in the coordinator, monitor, facilitator, and mentor skills. The engineering director is recognized as an innovator but needs to develop these abilities. The finance director is perceived as being a strong manager, internally focused with human relations and internal processes skills. The purchasing director has the strongest leadership abilities among the directors. His peers perceive him to be a very strong facilitator, which is essential in the culture of this company as well as having management strengths in the three of the four management areas.

Another observation included the omission of the human resources department due to insufficient data available to determine a correlation. Not enough peer respondents were provided to give a valid correlation.

	Task	Culture
Sales	5.0	5.4
Operations	4.1	4.1
Engineering	5.3	6.1
Human Res.	5.3	6.3
Quality	5.3	5.9
Finance	5.9	7.1
Purchasing	5.3	6.1

Table 4. *Stress Level Evaluated by Peers*

Scores that are closer to eight indicate little or no stress in the partnership. Inversely, scores closer to one are the most stressful and dysfunctional. The middle score is 4.9. Scores 4.9 and lower are defined as having a high level of stress and dysfunctional, while scores above 5.0 are defined as being more functional and less stressful.

Scores in the Task and the Culture dimensions are not always the same. The data suggest that sometimes partnerships are strong or weak in Task or Culture. A score that is significantly higher in Task over Culture would indicate that the partnership is focused on goals and reaching specific objectives at the expense of developing shared commitment, an effort to solve conflict in a healthy way or develop mutual accountability and transparency. If the culture is significantly higher in Culture over Task, the data would suggest that the partnership is focused on creating a healthy culture at the expense of getting specific goals accomplished.

We can observe two interdepartmental relationships that are dysfunctional and stressful and one relationship that is very healthy. The dysfunctional relationships are in the operations and sales departments. In the operations department, relationships are characterized by no shared plan and a lack of harmony. This dysfunction will create a silo mentality between this department and the other departments. The sales relationship is better where some departments report to have a shared plan and open communication. Both of these departments do not benefit from a healthy working environment within the company. These dysfunctions will impact the accomplishment of company objectives and customer expectations. The healthy partnership involves the finance department which has the highest score and the least amount of stress and dysfunction measured by its peers in the company.

Finally, it is interesting to note that the purchasing director, the strongest manager, does not have the least amount of stress. The directors with scores above 5.9 are strong in the human relations model as mentors and facilitators, focused on collaborating. Their peers note that they engage in constructive conflict, not engaging in personal attacks or passive aggressive behaviors. It is important to note that their Task scores are higher than the dysfunctional group.

	Human Relations Model		Open Systems Model		Rational Goal Model		Internal Process Model	
	Facilitator	Mentor	Innovator	Broker	Producer	Director	Coordinator	Monitor
Corr. Coeff (Task)	0.90	0.17	-0.50	0.12	-0.57	-0.60	-0.03	-0.20
Corr. Coeff (Culture)	0.89	0.24	-0.50	0.09	-0.59	-0.60	0.06	-0.17

Table 5. *Correlation Coefficient Between Self and Peer Perception by Management Skill with Stress Level*

We can observe that there exists a significant correlation between the self and peer perception of management skill with the stress level. The strong positive correlation is between the Task and Culture aspects of the facilitator role. This is consistent for the Task and the Culture dimensions.

Conclusion

Successful companies are organizations that have leaders who work to create a healthy working culture as well as focus on accomplishing tasks which are aligned to the mission and strategy. Using a self-assessment and peer assessment of management behavior surveys, the leadership of the organization can determine the health of the culture, level of stress and alignment of its work units. As leaders develop the facilitator behaviors in their departments, stress decreases and tasks are accomplished, improving the health of the culture.

The results of this study show that developing a healthy culture is important to the organization, impacting its ability to accomplish tasks. Directors and employees developing facilitator behaviors will

promote a healthy workplace, decreasing stress in the organization and increasing the accomplishment of tasks.

This research points to the validity of using self-assessment and peer assessment of management behavior to locate organization areas of dysfunction and stress. Through the use of training in facilitator behaviors, directors can improve the effectiveness and alignments of their departments and organization.

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INTEGRATION OF MARKET AND ENTREPRENEURIAL ORIENTATIONS IN THE CONTEXT OF EXPORTING

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ABSTRACT

Globalization has promoted worldwide exporting levels to soar and to account for more than 32% of the global activity. Technological advances in information and communication technologies, production methods, transportation, and international logistics have led to the increase in the exporting activity. However, these advances have also resulted in highly competitive and turbulent markets, and sophisticated and demanding customers, which in return has required exporting firms to be both entrepreneurial- and market oriented. A review of the market orientation, entrepreneurial orientation and exporting literature indicated that the relationship between market orientation and entrepreneurship was not clear. This study attempts to fill the gap in the literature by investigating the componentwise relationships between these two orientations. The model and hypotheses were tested with data collected from 150 export managers. Based on the analysis of the data results indicated that the three components of market orientation had different impact on the components of entrepreneurial orientation. For example, whereas customer orientation had a negative impact of proactiveness and risk-taking of an organization, competitor orientation had a positive impact. Similarly, although customer and competitor orientations had a negative impact on innovativeness, interfunctional coordination had a positive impact.

Keywords: Market Orientation, Entrepreneurial Orientation, Exporting, Innovativeness, Customer Orientation, Entrepreneurship

Introduction

Globalization has promoted worldwide exporting levels to soar and to account for more than 32% of global activity (Mandel 2009). Technological advances in information and communication technologies, production methods, transportation, and international logistics have led to the increase in the exporting activity (Webster and Deshpandé 1990; Knight and Cavusgil 2004). However, these advances have also resulted in highly competitive and turbulent markets (Caruana, Morris and Vella 1998), and sophisticated and demanding customers (Knight and Cavusgil 2004), which in return has required exporting firms to be both entrepreneurial- (Knight 1997; Caruana *et al.* 1998) and market-oriented (Knight and Cavusgil 2004).

Market orientation with its roots in the marketing concept has been central in thinking in the marketing discipline since the 1950s (Deshpandé, Farley and Webster 1993; Gray and Hooley 2002). The seminal works of Kohli and Jaworski (1990) and Narver and Slater (1990) instigated a renewed interest in market orientation (Slater and Narver 1994; Kohli, Jaworski and Kumar 1993; Cadogan and Diamantopoulos 1995). Various scales for market orientation have been developed and tested both in the U.S. and overseas based on two main approaches: the behavioral approach (e.g., Kohli and Jaworski 1990; Deshpandé and Farley 1998a, b; Matsuno, Mentzer and Rentz 2000) and the cultural approach (e.g., Narver and Slater 1990; Deshpandé, Farley and Webster 1993). The behavioral approach depicts market orientation in terms of behaviors related to organization-wide generation and dissemination of market intelligence on current and future customers and responsiveness to this intelligence (Kohli and Jaworski 1990; Siguaw, Simpson and Baker 1998; Langerak 2003; Kirca, Jayachandran, and Bearden 2005). On the other hand, the cultural approach describes market orientation as an organizational culture that is committed to deliver continuous superior value to its customers (Narver and Slater 1990; Han, Kim and Srivastava 1998; Langerak 2003; Kirca *et al.* 2005). Although both approaches offer valuable insights, the cultural perspective has gained more acceptance. In a study that examined the creation of market orientation in organizations, Gebhardt, Carpenter and Sherry (2006, p. 38) found that "market orientation rests fundamentally on cultural values."

Exporting companies need to be market-oriented, as customers are more knowledgeable and sophisticated in their choices, and require higher degrees of responsiveness (Webster and Deshpandé 1990; Knight and Cavusgil 2004). Besides, exporting firms are faced with increased competition as more and more countries are integrating to the world economy (Caruana *et al.* 1998). Furthermore, there is increased need for following the changes in macroeconomic environment, and legal and regulatory environment of various country markets that may influence customers and competitors (Rose and Shoham 2002). Thus, exporting firms that are market-oriented will have higher performance (Cadogan, Diamantopoulos and Siguaw 2002; Rose and Shoham 2002; Akyol and Akehurst 2003).

Besides market orientation, exporting firms need entrepreneurial orientation to deal with problems and opportunities that arise from competitive and turbulent global markets (Knight 1997; Caruana, Morris and Vella 1998). Entrepreneurial orientation is defined as the propensity to take calculated risks, to be innovative and to demonstrate proactiveness (Morris and Paul 1987). The construct of entrepreneurial orientation encompasses three underlying dimensions: innovativeness, risk taking and proactiveness of companies (Miller 1983; Morris and Paul 1987; Covin and Slevin, 1988; Naman and Slevin 1993; Caruana, Morris and Vella 1998; Matsuno, Mentzer and Özsomer 2002; Liu, Luo and Shi 2002, 2003). Creativity, ingenuity, and calculated risk-taking are crucial for companies operating in the international markets as domestic strengths might not be sufficient (Zahra and Garvis 2000, p. 470). Exporting firms need to develop and employ different skills that are not required by domestic firms, and developing and exploiting these skills require experimentation and risk taking (Zahra and Garvis 2000). Therefore, an entrepreneurial orientation in the exporting context is associated with higher performance (Balabanis and Katsikea 2003; Zahra and Garvis 2000). In summary, exporting firms depend on market orientation

and entrepreneurial orientation for their long-term survival (Caruana, Morris and Vella 1998; Luo, Zhou and Liu 2005).

Although being market and entrepreneurial-oriented are seen as necessary requirements for long-term survival of the exporting firms, to this day these two constructs, market and entrepreneurial orientations, their interactions and their performance implications have mostly been explored in domestic settings. Knight and Cavusgil (2004) has explored the roles of international entrepreneurial orientation and international marketing orientation on development of organizational capabilities of born-global firms, and found that both orientations impacted the performance positively through these capabilities.

A review of the literature indicates that the relationships between the components of market and entrepreneurial orientations have not been examined. The relationship between market orientation and entrepreneurship is not clear. Some scholars have argued that both orientations are correlated (e.g., Morris and Paul 1987; Miles and Arnold 1991; Barrett and Weinstein 1998) or simply complement each other (e.g., Slater and Narver 1995; Jaworski and Kohli 1996; Atuahene-Gima and Ko 2001; Liu *et al.* 2002, Knight and Cavusgil 2004).Others have proposed other relationships, both on the component and aggregate level. In order to clarify the nature of the relationship between these two orientations it is necessary to examine them at the component level. Therefore, the goal of this study is to clarify the componentwise relationship between market orientation and entrepreneurship by developing and testing a model. Establishing the relationship between the orientations and their components will enhance our understanding of these two orientations and how their components are related in the context of exporting.

Literature Review

Market Orientation

In Narver and Slater's (1990, p. 21) conceptualization customer orientation refers to the firm's sufficient understanding of its target buyers to be able to create superior value for them continuously. In another similar concept by Deshpandé, Farley and Webster's (1993, p. 27) customer orientation was defined as "the set of beliefs that puts the customer's interest first." A customer-oriented culture fosters collection of intelligence about customers to create customer value. A customer-oriented firm closely monitors customers' needs (Im and Workman 2004). Competitor orientation is defined as "understanding the short-term strategies of both the key current and the key potential competitors" (Narver and Slater 1990, p. 22). A competitor-oriented firm has a propensity to keep a constant eye on its rivals to identify, analyze, and respond to competitors' weaknesses and strengths (Narver and Slater 1990; Im and Workman 2004). The third component - interfunctional coordination - refers to coordination among different departments to create superior value for target customers (Narver and Slater 1990). Interfunctional coordination fosters greater communication, collaboration, and cohesiveness (Auh and Menguc 2005). It also coordinates the resources of the organization to combat competitors and to serve

customers effectively (Narver and Slater 1990; Noble, Sinha, and Kumar 2002). That is, interfunctional coordination has strong associations with the other components of market orientation – customer and competitor orientations.

Entrepreneurial Orientation

Innovativeness refers to a firm's tendency and willingness to place strong emphasis on research and development, new products/services, and technological improvements, and to engage in and support new ideas, products or processes (Zaltman, Duncan, and Holbek 1973; Slevin and Covin 1990; Lumpkin and Dess 1996). It is an essential component of entrepreneurial orientation as it indicates how firms pursue new opportunities (Lumpkin and Dess 1996). It is important to distinguish innovativeness, which is an organization's cultural orientation from innovative capacity, which is the ability of the organization to successfully develop or adopt new products and processes (Hult, Snow and Kandemir 2003). In other words, innovativeness is "a cultural readiness and appreciation for innovation," while innovative capacity is "the degree of innovations actually produced or adopted by the organization" (Hurley, Hult and Knight 2005).

The second component of entrepreneurial orientation is risk-taking. In the context of entrepreneurship, risk-taking refers to resource allocation decisions and the choice of products and markets (Venkatraman 1989b). Miller and Friesen (1978, p. 923) defined risk-taking as "the degree to which managers are willing to make large and risky resource commitments – i.e., those which have a reasonable change of costly failures." These risks are not uncalculated, extreme risks that involve reckless decision-making, but are calculated risks that are identified by management (Davis, Morris and Allen 1991). Management explores the outcomes of various prospects and generates scenarios of likely outcome (Dess and Lumpkin 2005). That is, management identifies key risk factors and their underlying sources, and then endeavors to manage or alleviate these factors (Caruana *et al.* 1998; Dess and Lumpkin 2005, Morris, Schindehutte, LaForge 2002). Furthermore, risk-taking proclivity might lessen strategic stagnation and could lead to superior performance (Miller and Toulouse 1986). Risk-taking propensity is an important component of entrepreneurial orientation as it is often used to illustrate entrepreneurship (Lumpkin and Dess 1996; Morgan and Strong 1998).

The third dimension of entrepreneurial orientation is proactiveness. "Proactiveness refers to a firm's inclination to seize new opportunities" (Dess and Lumpkin 2005, p. 150). Proactiveness is the willingness to initiate actions to which competitors respond (Slevin and Covin 1990, p. 43). While some researchers (e.g., Davis, Morris and Allen 1991) contended that proactiveness was the opposite of reactiveness - where the company only responds to threats by the competitors or environmental forces, others (e.g., Lumpkin and Dess 1996) claimed that the opposite of proactiveness was passiveness – where the firm is indifferent to or unable to seize opportunities or to lead. Proactive firms do not only have a forward-looking perspective but they are also willing to change the nature of competition in their industry (Dess and Lumpkin 2005, p. 150).

To the extent an organization exhibits all three of these dimensions it can be considered an entrepreneurial firm (Miller 1983). He argued that for a firm to be labeled as entrepreneurial it needs to have innovativeness, risk-taking, and proactiveness. If a company solely changed its technology or production line by imitating its competitors without taking any risks and being proactive it wouldn't be considered an entrepreneurial firm. The same holds true for firms that are proactive risk-takers, but fail to innovate. Firms may exhibit different levels of entrepreneurship rather than either having it or not having it (Morris and Lewis 1995).

Proposed Model

In this study, it is contended that market orientation and entrepreneurial orientation are two distinct but intertwined cultures of an exporting company. Both of these two orientations are required to attain sustainable competitive advantage and therefore, it is important to determine the relationship between them. Each orientation has three components. Customer orientation, competitor orientation and interfunctional coordination are the three components of the market orientation construct, and proactiveness, risk-taking and innovativeness are the three components of entrepreneurial orientation. As discussed earlier some of the previous studies have reported a correlation (e.g., Morris and Paul 1987; Miles and Arnold 1991; Smart and Conant 1994; Becherer and Maurer 1997), others have found a one-way directional relationship between the orientations (e.g., Matsuno, Mentzer and Özsomer 2002; Liu, Luo and Shi 2003). Although these studies were valuable in establishing a relationship between market orientation and entrepreneurship, none of these studies focused on studying how these two important constructs were related at the component level. As stated previously, one of the goals of this study is to provide better understanding between market and entrepreneurial orientation by conducting a componentwise examination. Figure 1 illustrates a visual presentation of hypothesized relationships among various components of the two orientations.

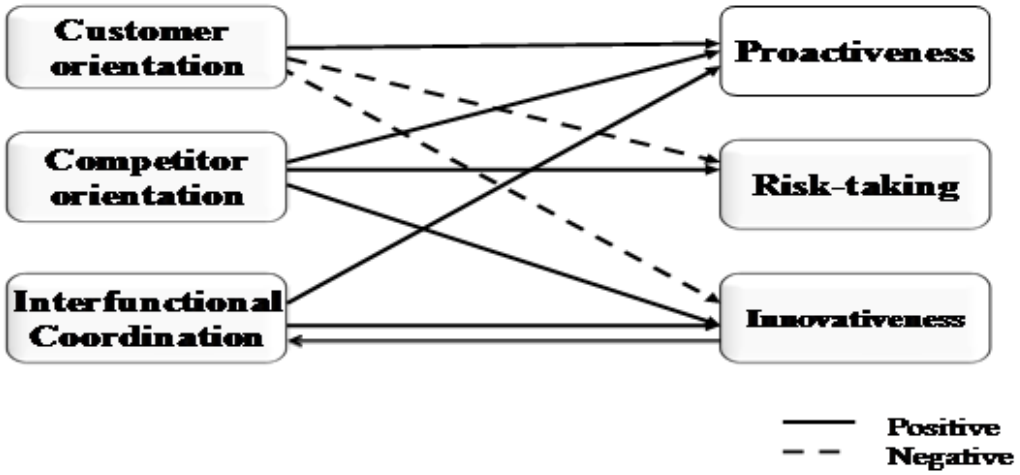

Figure 9- The relationships among the components of MO and EO

First, it is hypothesized that customer orientation has a negative impact on innovativeness and risk-taking components of entrepreneurial orientation, while competitor orientation has a positive influence of these two components. Second, proactiveness influences customer and competitor orientation dimensions of market orientation positively, while it is influenced by interfunctional coordination positively. Finally, it is hypothesized that interfunctional coordination is influenced by and influences innovativeness component of entrepreneurial orientation positively for export ventures.

As stated earlier the goal of this study is to offer a better understanding between market orientation and entrepreneurship by conducting a component-wise analysis. Based on the review of the literature a model is developed which is shown in Figure 1. According to this model the relationships among the three components of the market orientation construct (customer orientation, competitor orientation and interfunctional coordination) and the three components of entrepreneurial orientation (proactiveness, risk-taking and innovativeness) are intricate. For example, while proactiveness is proposed to influence customer and competitor orientation positively, interfunctional coordination is argued to have a positive impact on proactiveness.

Hypotheses

A customer orientation will discourage willingness to take risks. An exporting firm with a priority on meeting the demands of its customers might not step outside the immediate voice of its customers (Jaworski, Kohli and Sahay 2000). However, customers' needs are limited to what they are accustomed

to, and what they can relate to (Lukas and Ferrell 2000). When an export firm is customer-driven, its focus and resources will be centered solely on the satisfying its customers' needs. In a study conducted by Christensen and Bower (1996), it was found that when companies were customer-oriented they were less likely to be risk-takers. Companies allocate resources based on rational assessments of returns and risks (Christensen and Bower 1996). A customer-oriented firm will be prone to take less risky investments, as well-understood needs of known customers will constitute a rather risk-averse choice. Therefore, a customer-oriented export firm will have proclivity for being risk-averse. Hence,

H1a: Customer orientation will have a negative impact on risk-taking dimension of entrepreneurial orientation of exporting companies.

Competitor orientation, with its focus on the competitive rivals, will have a positive influence on the exporting companies' risk-taking propensity. A competitor-oriented exporting company will be willing to take calculated risks to distance themselves form their competitors (Matsuno, Mentzer and Özsomer 2002). A focus on competitors and outperforming them requires taking risks on untested approaches in new technologies and/or new systems. Therefore, a logical outcome of competitor orientation is a culture that is prone to risk-taking.

H1b: Competitor orientation will have a positive impact on risk-taking dimension of entrepreneurial orientation of exporting companies.

Getting close to the customer will hinder innovativeness in the exporting firm (MacDonald 1995, Christensen and Bower 1996; Christensen 1997; Berthron *et al.* 1999). Customer-oriented exporting companies will be too occupied with satisfying the immediate demands of its customers rather than concentrating its resources on the needed fundamental change (MacDonald 1995; Christensen and Bower 1996, Christensen 1997).

Gatignon and Xuereb (1997) found that a strong customer orientation resulted in less radical innovation. Im and Workman (2004) studied the role of customer orientation on new product and marketing program novelty. The results showed that customer orientation had a negative impact on new product novelty, and did not have any significant effect on marketing program novelty. The scholars concluded that consistent with the previous claims, they found that customer orientation could be detrimental to the generation of novel perspectives for new products (p. 127). Therefore,

H2a: Customer orientation will have a negative impact on innovativeness dimension of the entrepreneurial orientation of exporting companies.

> "A competitor-oriented firm tends to monitor progress against rival firms continuously, which can lead to opportunities to create products or programs that are differentiated from those of competitors" (Im and Workman 2004, p. 118).

Thus competitor orientation tends to facilitate innovativeness (Im and Workman 2004; Low, Chapman and Sloan 2007; Tajeddini, Truman, and Larsen 2006). One of the studies that found empirical support was conducted by Lukas and Ferrell (2000), in which the scholars found that competitor orientation was significantly related to two different types of innovation studied – "me-too products" and "new-to-the world products." Another study, conducted by Im and Workman (2004), concluded that competitor orientation had a significant impact on new product and marketing program novelty. Competitor orientation with its focus on identifying, analyzing and responding to competitors' weaknesses and strengths will encourage innovativeness (Narver and Slater 1990; Im and Workman 2004). Accordingly, it is argued that:

H2b: Competitor orientation will have a positive impact on innovativeness dimension of the entrepreneurial orientation of exporting companies.

Interfunctional coordination is characterized by enhanced communication and exchange between all organizational departments (Narver and Slater 1990; Im and Workman 2004). Greater interfunctional coordination will foster trust and dependence among different departments and decreases the departmentalization in the organization that might inhibit innovativeness (Zahra, Nash and Bickford 1995; Lukas and Ferrell 2000; Auh and Menguc 2005). As well, interfunctional coordination promotes innovativeness in the organization as it "involves open generation and sharing of new ideas, resolution of problems and disagreements by means of non-routine methods and different frames of reference" (Im and Workman 2004, p. 118). "[I]nterfunctional coordination may serve as an impetus to innovativeness because increases in communication and team work are likely to generate new ideas and technology explorations" (Woodside 2005). When functional units work autonomously, they are more likely to follow their own routine mode of problem solving and are less likely to be creative; however, when they are integrated, the information sharing and interaction will give rise to willingness to accept new ideas and engagement in innovative activities (Han *et al.* 1998). Furthermore, interfunctional coordination is likely to eradicate impediments to transfer of tacit knowledge, which is necessary for breakthrough innovation (Lukas and Ferrell 2000). Tacit knowledge is knowledge that is "difficult to articulate fully even by an expert and is best transferred from one person to another through a long process of apprenticeship" (Lukas and Ferrell 2000, p. 241). In consequence, interfunctional coordination, which is characterized by high level of information sharing, coordination, interaction and communication, will have a positive impact on organizational innovativeness (Damanpour 1991; Woodside 2005).

However, the relationship between innovativeness and interfunctional coordination is not one directional, but "a positive feedback loop" (Woodside 2005). Woodside (2005) argued that

interfunctional coordination will not only have a positive impact on innovativeness, but it will also be influenced by innovativeness. In order to attain interfunctional coordination, firms may establish cross-functional teams; and innovative projects may stimulate such team creation (Woodside 2005). The importance of interfunctional coordination is emphasized in exporting due to different and complex export markets. Accordingly, it is hypothesized that interfunctional coordination is influenced by and influences innovativeness component of entrepreneurial orientation positively for exporting companies. As a result, it is hypothesized that:

H2c: Interfunctional coordination will have a positive influence on innovativeness of exporting firms.

H2d: Innovativeness will have a positive influence on interfunctional coordination of exporting firms.

Customer orientation is described by Narver and Slater (1990, p. 21) as "the sufficient understanding" of customers in order to create value for them. Consumers' habits, incomes and expectations may change overtime. A company's offerings that "meet customers' needs today may not meet their need tomorrow" (Zhou *et al.* 2005, p. 1051). Thus, a firm must be proactive and continuously searching for promising opportunities (Slater and Narver 1993; Morgan and Strong 1998). This view is supported by Han *et al.* (1998, p. 33) who contended that because of customer orientation's focus on continuously finding ways to provide superior customer value, there would be "increased boundary-spanning activity beyond the status quo." They explained that, in other words, customer orientation advocated proactive disposition in order to meet customers' demands (Han *et al.* 1998, p. 33).

Therefore, in this study it is argued that a customer-oriented culture, with a great demand and willingness to obtaining intelligence about the current and latent export customer needs and requirements, will promote a culture that emphasizes an incessant pursuit of up-and-coming prospects. That is, customer orientation will have a positive influence on proactive stance.

H3a: Customer orientation will have a positive impact on proactiveness of exporting companies.

A competitor-oriented culture with a focus on identifying the competitors, and their weaknesses and strengths (Narver and Slater 1990) will promote a proactive culture that is ready to deal with the treats (Slater and Narver 1993). That is, a culture that stresses gathering and thorough analysis of competitors' capabilities and strategies (Lafferty and Hult 2001) will encourage a proactive stance. The impetus behind a positive relationship between competitive orientation and proactiveness is due to the competitor-oriented exporting firms' using the target rivals as a frame of reference, and constantly seeking to identify their own strengths and weaknesses (Han et al. 1998; Wu, Maharajan, and Balasubramanian 2003). It is argued that such attention to competitive factors would grant an exporting

firm with a proactive disposition toward shaping the competitive environment and its own strategy (Wu *et al.* 2003, p. 431). Consequently, competitor orientation will drive proactiveness in the exporting firm. Therefore, it is contended that:

H3b: Competitor orientation will have a positive impact on proactiveness of exporting companies.

Interfunctional coordination is described as "the process that assimilates the results of being customer and competitor oriented and allows coherent action" (Wooldridge and Minsky 2002, p. 31). Knowledge about customers, competitors and other market factors are generated through customer and competitor orientation (Narver and Slater 1990). Many organizations collect customer- and competitor-oriented data, but only when the data are circulated and "become a shared organization-wide platform from which the decisions are made" (Kennedy, Goolsby and Arnold 2003, p. 78) the benefits of these orientation can be observed. Therefore, interfunctional coordination is essential in identifying and acting on opportunities in the marketplace (Im and Workman 2004). The intelligence generated by customer and competitor orientation, and distributed and shared throughout the organization by interfunctional coordination enables identifying the emerging opportunities, and thus promote the proactiveness of the organization. Furthermore, by enabling the distribution of this information throughout the organization interfunctional coordination will promote a sense of control in the organization, which in return would foster a proactive culture (Kennedy, Goolsby and Arnold 2003). Based on the above arguments, it is hypothesized that interfunctional coordination will have a positive impact on the proactiveness dimension of the entrepreneurial orientation.

H3c: Interfunctional coordination will have a positive impact on proactiveness of exporting companies.

Measures

Multiple-item measures were used for the constructs under investigation and most of the items were displayed in the form of seven-point Likert scales to ensure "maximal respondent specificity" (Knight 2001, p. 163). The scales for consumer orientation, competitor orientation and interfunctional coordination were used to operationalize taken from Narver and Slater's (1990) study, and modified to the exporting context based on in-depth interviews with export managers. The scales for innovativeness, risk-taking and proactiveness were adapted from Matsuno, Mentzer and Özsomer (2002) based on the results of in-depth interviews.

Methodology

The sample for the survey is withdrawn from the *Export Yellow Pages*. This directory was used in previous studies (e.g., Samiee and Walters 1990; Bello and Gilliland 1997). Only manufacturing firms are

included in the sample. Prior research on exporting (i.e. Zou and Cavusgil 2002; Morgan, Kaleka and Katsikeas 2004) had excluded the service firms and firms engaged in primary industries because of their peculiar international expansion patterns, regulatory requirements, and performance characteristics. Moreover, industry differences (i.e., manufacturing vs. service industry) affect the strength of the relationships involving market orientation (Kirca *et al*. 2005). Each manufacturing firm was contacted by telephone to identify an appropriate key informant for the study, and to prenotify the firm of the research project (Bello, Chelariu, and Zhang 2003; Morgan, Kaleka and Katsikeas 2004). Approximately 600 firms were identified. Out of these 600 firms, only 314 export firm managers agreed to participate and only 168 managers returned the survey and 18 of the responses were eliminated due to excessive missing data, low level of knowledge, and following the directions. The final sample consists of 150 manufacturing firms and the response rate is 29%, which is regarded as acceptable.

A two-stage approach is used to analyze the data and test the hypotheses. According to the two-stage approach, the measurement model first is developed and evaluated, and then the full structural equation model is evaluated. As two different models were proposed the analyses would be conducted separately for the two models. Therefore, this section is organized as follows: (1) Analysis of measurement model: reliability and construct validity, (2) Fitting of the proposed models. The reliability of the scales was appraised by using Cronbach's coefficient alpha. Most of the coefficient alphas were greater than 0.70, which is the suggested threshold by Bagozzi and Yi (1988). However, proactiveness was 0.45 which is lower than the suggested value of 0.60. The values for the other dimensions of entrepreneurial orientation were 0.73 for innovativeness and 0.75 for risk-taking. The low reliability of the proactiveness dimension and the overall entrepreneurial orientation scale supports the assessment of previous studies which suggest that the proactiveness dimension is ambiguous (Lumpkin and Dess 1996; Brown, Davidson and Wiklund 2001). Therefore, proactiveness was dropped from the analysis.

Table 1
Reliability of Estimates of Model Constructs

Construct	Cronbach Alpha
Customer Orientation	.84
Competitor Orientation	.78
Interfunctional Coordination	.81
Innovativeness	.73
Risk-taking	.75
Proactiveness	.45

Validity refers to the degree to which a scale really measures the concept that it purports to measure (Bryman and Cramer 2005, Pallant 2007). The construct validity is explored by convergent and discriminant validity. To assess convergent validity of the five latent variables (i.e., customer orientation, competitor orientation, interfunctional coordination, innovativeness, and risk-taking confirmatory factor analysis (CFA) was conducted using AMOS. The model fit was found to be acceptable [χ^2 (171) = 248.83 *P* < .00, χ^2/df = 1.46, TLI = .92, RMSEA = .05]. All the paths between the observed variables and their

assigned latent variables were significant, and the standardized loadings were equal to or greater than .40. Therefore, all items met the convergent validity criterion of .40. That is, all the items were correlated at least .40 with their own scale (Nunnally and Bernstein 1994). Discriminant validity for two estimated constructs was assessed by constraining the estimated correlation parameter between them to 1.0 and comparing the χ^2 to the χ^2 of the unconstrained model (Anderson and Gerbing 1988, p. 416). As suggested by Anderson and Gerbing this test was performed for one pair of factors at a time. If the unconstrained model has a χ^2 value lower than the constrained model this is an indication that the traits are not perfectly correlated and that discriminant validity is achieved (Bagozzi and Phillips 1982, p. 476). The results of χ^2 difference tests between the constrained and unconstrained models indicated that the dimensions differed.

After obtaining satisfactory measurement models for the model, the analyses proceeded with testing the structural model. In this section, issues dealing with structural models are analyzed. The conceptual model (Figure 1) calls for a reciprocal relationship between interfunctional coordination and innovativeness. The proposed Model 1 is a nonrecursive model with a feedback loop between two of its constructs. These two constructs are seen as both a predictor and an outcome of each other (Hair *et al.* 2006). The model was run using AMOS 16.0 with a reciprocal relationship. AMOS provides stability index for the non-recursive subset in the model. If the stability index is less than 1.0, than there is positive evidence of that the system of linear equations associated with the model is 'stable' If the stability index is one or greater, the model is 'unstable' meaning it is not in equilibrium (Kline 2006). The results of the structural equation modeling with feedback-loop indicated that stability index for both variables were 1.784. The high values might indicate either that the model is wrong or that the sample size is too small (Arbuckle 2007). Non-recursive models, especially when there is a reciprocal relationship, require larger sample sizes (Wong and Law 1999). Further analysis by comparison of fit statistics revealed that the model with a path from interfunctional coordination to innovativeness (Model 1-A) offered better model fit.

Table 2
Comparison of Fit

	Model 1 - A (IC → I)	Model 1 - B (I → IC)
χ^2	271.92	314.57
df	175	177
P	.000	.000
χ^2/df	1.55	1.78
GFI	.86	.82
TLI	.91	.87
RMSEA	.06	.07

The structural model's validity was assessed by assessing overall structural model fit. As Table 4 indicates the fit is acceptable. There is evidence for structural theory validity as the structural model fit is only marginally worse than the CFA model fit (Hair *et al*. 2006, p. 857). [R^2 for Innovativeness = .72, R^2 for Risk-Taking = .26, R^2 for Proactiveness = .51]. The parameter estimates of the suggested links and parameter estimates for Model 1-A are stated below and also summarized in Table 5.

H1a argues that customer orientation of an exporting firm is negatively related with its risk-taking propensity. This hypotheses is supported as the path coefficient between customer orientation and risk-taking is found to be negative and significant (β =-3.701, *t* = -1.647, *p* = .050).

H1b suggests that an export firm's competitor orientation is positively associated with its risk-taking. This hypothesis is supported as the path coefficient is positive and significant (β = 3.657, *t* = 1.580, *p* = .057).

H2a states that an export firm's customer orientation is negatively associated with its innovativeness. This hypothesis is supported by the data as the path coefficient is positive and marginally significant (β =.-5.350, *t* = -1.459, *p* = .072).

H2b proposes that an export firm's competitor orientation is positively associated with its innovativeness. This hypothesis is marginally supported as the path coefficient is positive and significant (β = 5.465 = 1.477, *p* = .070).

H2c argues that an export firm's interfunctional coordination is positively associated with its innovativeness. This hypothesis is supported by the survey data. The path coefficient is positive and significant (β =.537, *t* = 2.001, *p* = .022).

H3d could not be tested because of the issue with the stability of the model.

Table 3 Parameter Estimates for Hypothesized Relationships of Proposed Model 1-A

Sign/Hypothesized Relationship	Hypothesis		Parameter Estimate	t-value
(-) Customer Orientation – Risk-taking	(H1a)	√	-3.071	-1.647**
(+) Competitor Orientation – Risk-taking	(H1b)	√	3.657	1.580*
(-) Customer Orientation – Innovativeness	(H2a)	√	-5.350	-1.459*
(+) Competitor Orientation – Innovativeness	(H2b)	√	5.465	1.477
(+) Interfunctional Coordination – Innovativeness	(H2c)	√	.537	2.003**

* $t \geq 1.282$, $p < .10$ (one-tailed test)
** $t \geq 1.645$, $p < .05$ (one-tailed test)
√ Hypothesis is supported
Note: Values shown are standardized path coefficients

Discussion

Although the conceptual model calls for a reciprocal relationship between interfunctional coordination and innovativeness, such a model with a feedback loop is not possible to examine as the model is instable. Therefore, two models with one directional path, one with a path from interfunctional coordination to innovativeness, the other with a path from innovativeness are compared based on their fit indices. The model (Model 1-A) which has a path from interfunctional coordination to innovativeness has better model fit, therefore, is chosen for the analyses of H1a-H2c.

This study demonstrates that customer orientation has a negative impact on risk-taking and innovativeness of exporting firms, as expected. The presence of strong negative relationship between customer orientation and risk-taking supports the view that the more market-oriented an export firm is the more risk-averse it will be. Similarly, exporting firms that are customer-oriented will be less innovative (Gatignon and Xuereb 1997; Voss and Voss 2000). This finding is consisted with the arguments of the scholars who warned about the negative impact of focusing too much on the customers (MacDonald 1995; Christensen and Bower 1996; Christensen 1997; and Berthron *et al.* 1999). Moreover, the more competitor-oriented an export firm is the more innovative it will be. These findings are consisted with the view suggested by previous studies (Han et al. 1998; Wu, Maharajan, and Balasubramanian 2003). Also, competitor orientation is positively related to risk-taking proclivity of exporting firms. Highly competitor-oriented exporting firms are more likely to take risks (Matsuno, Mentzer and Özsomer 2002) As expected when different functions in the organizations are highly connected with each other the higher the innovativeness in the organization (Narver and Slater 1990; Im and Workman 2004). As this study focuses on the exporting operations it can be said that

innovativeness on exporting operations depends upon the interfunctional coordination of the whole organization.

Managerial Implications and Limitations

Export managers should assess the trade-offs between adopting different dimensions of market orientation. For example, when an exporting firm focuses on satisfying its customers it tends to be risk-averse, while when it focuses on tracking its competitors it is more likely to take risks. Also, when an exporting firm listens to its customers and monitors its competitors it tends to have problems with providing innovative products/services/processes. On the other hand, an exporting firm that shares information throughout its organization tends to be more innovative. Adopting a customer and competitor oriented posture might be successful in industries where the need for innovation is less pronounced. One of the limitations of the study deals with the key informant approach was used to collect data. Data collected from a single manager in each exporting firm might suffer from validity problems (Van Bruggen, Lilien and Kacker 2002). Future research could focus on collecting information from multiple informants who are both knowledgeable about the exporting operations. Another limitation is that the results of this study are applicable only to US exporters. Caution should be exercised when generalizing the findings of the current study to exporters from other countries. Future studies can be conducted to test whether the findings apply to exporters from different countries and emerging markets.

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THE INFLUENCE OF TIME PRESSURE ON VALUE PERCEPTION OF ONLINE CONSUMERS

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ABSTRACT

The objective of this paper is to analyze the relationships between an online consumer's feeling of time pressure, their perception of value and intention to buy. The subjects for this study were 195 members of a professional organization. A web-based questionnaire was used to gather the data which was analyzed using regression analysis. Results indicate that perception of value influences a consumer's intention to buy online. Time pressure was shown to influence perceived value and a relationship between time pressure and intention to buy was not found to be statistically significant. This study indicates that online vendors should design convenience into their web sites to increase the perceived value for online consumers.

Keywords: time pressure, value perception, e-commerce, consumer behavior, time availability

Introduction

With the considerable growth of business-to-consumer e-commerce, businesses strive to understand what motivates online consumers to purchase from various websites. Gaining and applying this information could give an online organization a significant competitive advantage. This paper is based on Keystone's doctoral dissertation (2008) and focuses on analyzing the influence of time pressure on the perception of value and intention to buy for an online consumer.

The number of people accessing the Internet continues to grow at a rapid rate. Shop.org and Forrester Research predict that "e-commerce sales will top $259 billion in 2007, an 18 percent increase over 2006" (Greenberg, 2007, p. 1). Greenberg also quotes Sucharita Mulpuru, a Forrester Research senior analyst:

> As consumers flood the Web to purchase merchandise and research products, online retail is moving full speed ahead. This strong growth is an indicator that online retail is years away from reaching a point of saturation (Greenberg, 2007, p. 2).

These statements from Forrester Research show the expanding potential market that exists for businesses on the Internet. The statements also indicate the online market will continue to grow for years.

Since the Internet provides an environment that is very easy for consumers to "shop around" with a few clicks, e-businesses that offer incentives may have a competitive advantage. E-businesses that are prepared to meet consumer's needs and wants have a great opportunity for success.

With the myriad of offers and incentives available on the Internet, what combination or strategy works best to attract and retain customers? There are numerous stories about Internet companies' successes and failures. What enables some companies to succeed and causes others to fail? Is it related to the number of consumers willing to buy from these companies? It is a given that businesses need customers. An important question for practitioners in this area is, what causes customers to buy from one Internet business and not another? This paper focuses on the following research question.

Does time pressure influence an online consumer's perception of value or intention to buy online?

To research the question given above, components shown in previous research to influence online consumers' intention to buy will be measured. The following paragraphs describe the components of: time pressure and perceived value to consumer.

Perceived Value to Consumer

The measured indicators of Perceived Value and Perceived Sacrifice are used to calculate the mediating variable Perceived Value to Consumer. The definition of Perceived Value used in this study is: "the consumer's overall assessment of the utility of a product based on perceptions of what is received" (Zeithaml, 1988, p.14). Perceived Sacrifice for this study is defined as the amount of money, time, and effort required purchasing an item (Ulaga & Eggert, 2002).

Time Pressure

Time Pressure (a.k.a. Time Availability) is defined as a person's perception of the amount of time they have versus the number of activities they need to accomplish (Srinivasan & Ratchford, 1991). This study looks at the relationship between perceptions of time pressure and perceptions of value and intention to buy online.

Potential Benefits of Proposed Model

Understanding how time pressure can influence online consumers' perception of value and intention to buy could give online vendors insight to better design their websites and customer service policies; thereby, increases their sales.

The proposed research model strives to integrate significant factors and theories about online consumer behavior from previous research. Previous research has shown that Perception of Value (Parasuraman, Zeithaml & Malhotra, 2005; Zeithaml, Parasuraman & Malhotra, 2002), influence an online consumer's intention to buy. Research has also established a relationship between Time Pressure and online

consumer behavior (Amichai-Hambuger, Fine & Goldstein, 2004; Teng, Huang, & Yeh, 2007). This study looks at the possible relationships between these variables and the influence on an online consumer's Intention to Buy.

This paper uses data gathered in an online survey. A questionnaire was developed with items from previously tested instruments. The wording of the items was modified as necessary to fit the context of this study. The questionnaire was tested with a pre-test to verify uni-dimensionality of the factors measured.

Literature Review

Much of the research, theories, and models for online consumer behavior have their roots in pre-Internet growth days. There is abundant research about consumer behavior and the antecedents of intention to buy through conventional market channels prior to the explosion in commercial use of the Internet. This paper will focus consumer behavior after the commercial growth of the Internet.

The following theories and models have been developed and researched about online consumer behavior. These models include the factors of perceived value and time pressure as antecedents to intention to purchase online. Table 1 outlines factors or antecedents and representative literature of a consumer's intention to buy.

Table 1

Factors and Representative Literature of *Influence* of Time Pressure on Value Perception of Online Consumers

Factor/Antecedent	**Representative Literature**
Perceived Value	Zeithaml (1988), Zeithaml et al. (1990)
Time Pressure	Lavin (1993), Mattson & Dubinsky (1987), Srinivasan & Ratchford (1991), Dabholkar & Bagozzi (2002)

Time Pressure

Jacoby, Szybillo, and Berning (1976) quoted Benjamin Franklin's adage, "Remember that time is money" (p. 320), to summarize the energy around, interest in, and importance of time in the business environment. These authors discussed the relationship between time and consumer behavior and presented three basic assumptions. The first assumption is that for every consumer time has value because it is limited and finite. The second assumption is that time is a resource that is constantly being used and individuals are free to use this resource as they choose. This assumption is also based on the reasoning that the resource of time "can be acquired through trading another resource, such as money

or effort" (p. 333). Finally, the third assumption states that time can be a cause and/or an effect of consumer behavior. Time can be an antecedent in a consumer's decision to buy. Time could also be a consequence in the form of post-purchase satisfaction based on the amount of time spent researching and thinking about the purchase (Jacoby et al., 1976).

Given that the online shopping environment is different from a "brick and mortar" setting, antecedents of a consumer's intention to buy may be different. Following are descriptions of two factors that are the focus of this paper: Time Pressure and Perceived Value.

Perceived Value

In Zeithaml et al. (2002) and Parasuraman et al., (2005) research conducted after the Internet explosion. Positive relationships between an online consumer's perception of value and quality of service and the consumer's intention to return and purchase again were shown.

Time Pressure

Alreck and Settle (2002) conducted a study on time-saving perceptions of consumers using the Internet and catalogue shopping. The results of this study indicated that consumers perceive Internet and catalogue shopping to be time savers. This study also found that buying over the Internet was significantly related to the number of hours worked outside the home. Teng et al. (2007) found that perceived time pressure increases the tendency to differ choice. In the same study time pressure was also found to influence the amount purchased.

Interplay Between Online Consumer Benefits and Concerns

Koiso-Kanttila (2005) synthesized existing literature about consumer benefits of the Web. Figure 1 shows the interplay between online consumer benefits and concerns.

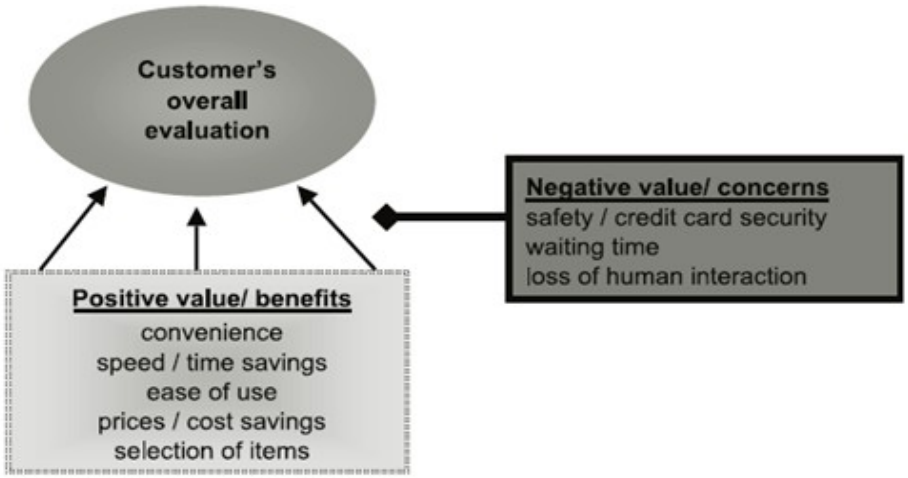

Figure 1. The interplay between consumer benefits and concerns (Koiso-Kanttila, 2005)

Figure 1 shows many of the attributes found to be significant in other literature about online consumer behavior and relates to the research model proposed in this paper. The attributes of convenience and speed/time savings could be related to time pressure (Dabholkar & Bagozzi, 2002). Cost savings and selection of items can be related to perceived value (Zeithaml, 1988). This is also an example of combining attributes found significant in previous research to model online consumer behavior.

Research Model

Online consumer behavior is influenced by several variables. Figure 2 shows a proposed research model of significant factors from previous research that influence a consumer's Intention to buy online. This model builds on the theories of Perceived Value (Zeithaml, 1988) and Time Pressure (Dabholkar & Bagozzi (2002). This model postulates that the factor of Time Pressure influences an online consumer's Perception of Value and Intention to Buy.

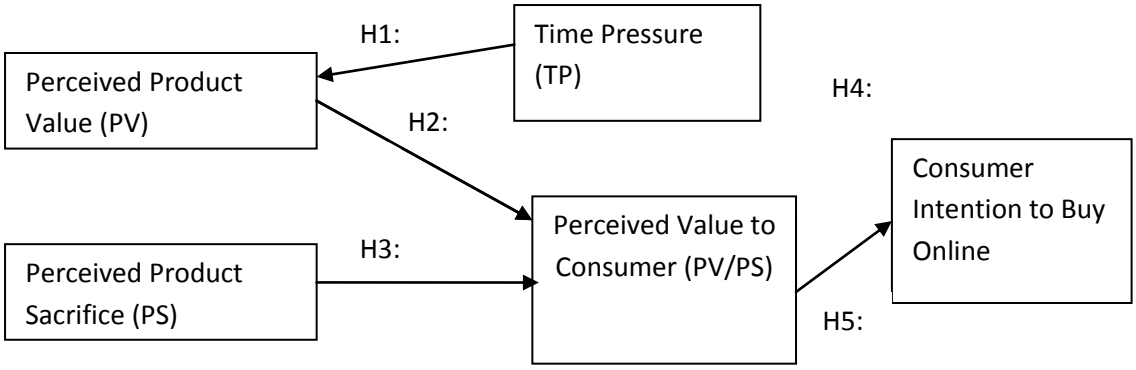

Figure 2. Research model: Influence of Time Pressure on Perceived Value and Online

Consumers' Intention to Buy and Hypotheses

$H1_0$: Perceived time pressure has no or a negative influence on perceived product value.

$H1_a$: Perceived time pressure positively influences perceived product value.

$H2_0$: Perceived product value has no or a negative influence on a consumer's perception of value.

$H2_{a:}$ Perceived product value positively influences a consumer's perception of value.

$H3_0$: Perceived product sacrifice has no or a negative influence a consumer's perception of value.

$H3_a$: Perceived product sacrifice positively influences a consumer's perception of value.

$H4_0$: Perceived time pressure has no or a negative influence on consumer intention to buy online.

$H4_a$: Perceived time pressure positively influences consumer intention to buy online.

$H5_0$: The perception of value to consumer has no or a negative influence on a consumer's intention to buy online.

$H5_a$: The perception of value to consumer positively influences a consumer's intention to buy online.

Methodology

In the present study data collected from a Likert-scaled survey questionnaire instrument gathered data about factors that influence whether or not a consumer will buy online and whether time pressure influences an online consumer's perception of value or intention to buy online. Findings from the literature review were used to create the items included on the survey questionnaire instrument. Questionnaire items were pilot tested and verified by peers.

Addressing the research question: Does time pressure influence an online consumer's perception of value or intention to buy online? Previous research has shown time pressure to have an influence on an online consumer's shopping behavior (Amichai-Hamburger et al., 2004; Teng et al., 2007). In this study the relationship of Time Pressure with consumers' Perception of Value and Intention to Buy Online was observed.

Constructs and Measures

Survey is the research methodology used in this study. A questionnaire was developed with items from previously tested instruments. The items were modified as necessary to fit the context of this study. The items were written as statements to which the respondents answer using a 5-point Likert scale of (1) poor to (5) excellent for the measured indicator Perceived Value and a 5-point Likert scale of (1) strongly disagree to (5) strongly agree for the indicators Perceived Sacrifice and Time Pressure.

A focus of this study is to determine which constructs affect the dependent variable: Consumer's Intention to Buy Online. This variable is defined as how likely it is that the consumer plans to buy online in the near future. Many previous studies have shown a significant link between behavioral intention and targeted behavior (Sheppard, Harwick, & Warshaw, 1988; Venkatesh & Morris, 2000). This variable is measured with three questions using a 5-point Likert scale of (1) very unlikely to (5) very likely. This study posits that Consumer's Intention to Buy Online is influenced by: perception of value and time pressure.

Table 2

Independent Variables and Instrument Source

Variable	**Instrument Source**
Time Pressure (cost of search)	Adapted from Srinivasan and Ratchford (1991)
Perceived Product Value	Adapted from Parasuraman et al. (2005)
Perceived Product Sacrifice	Adapted from Ulaga and Eggert (2002)

The indicator Time Pressure (a.k.a. Time Availability) is defined as individuals' perception of the amount of time they have versus the number of activities they need to accomplish (Srinivasan & Ratchford, 1991**).** The definition of Perceived Value in this work is: "perceived value is the consumer's overall assessment of the utility of a product based on perceptions of what is received" (Zeithaml, 1988, p.14). Perceived Value to Consumer is calculated as a ratio of Perceived Product Value divided by Perceived Product Sacrifice.

Measurement of Variables

The items used to measure the variables are written as statements to which the respondents answer using a 5-point Likert type scale of (1) poor to (5) excellent for the measured indicator Perceived Value. A 5-point Likert type scale with anchors on (1) strongly disagree to (5) strongly agree for the indicator Time Pressure is used.

The scales used to measure the items in the research model were developed based on previous research and modification of existing scales. Table 3 shows items used in the questionnaire.

Table 3 Items Used in Questionnaire

Factor	Number of Items in Measure	Questions	Scored
Time Pressure	3	1. I am busier than most people I know. 2. Usually there is so much to do that I wish I had more time. 3. I usually find myself pressed for time.	
Perceived Value	4	1. The prices of the products and services available at this site (how economical the site is). 2. The overall convenience of using this site is... 3. The extent to which the site gives you a feeling of being in control. 4. The overall value you get from this site for your money and effort.	
Perceived Sacrifice	3	1. I get items for a good price at this site. 2. This site costs me a lot of time to make a purchase. 3. This site takes a lot of effort to make a purchase.	Reverse
Intention to Buy	3	1. How likely is it that you would return to this store's web site? 2. How likely is it that you will purchase from this store in the next three months? 3. How likely is it that you will purchase from this store in the next year?	

Analysis and Presentation of Findings

From Keystone's (2008) study, the data related to Time Pressure and Intention to Buy is analyzed and presented in the following pages. Regression was used to test the hypotheses shown in Figure 2. Mean score was used for time pressure. The data analysis tool was SPSS Version 12. The purpose of this study is to analyze the influence of time pressure on perceived value and intention to buy for online consumers. The results of this study are presented below.

Study Overview

Data for this study were gathered via an online survey. The link to this survey, along with a request for participation, was posted on a discussion board of the professional organization American Society for Quality (ASQ). The survey was posted September 10, 2007. By November 30, 2007 there were 209 responses. Six of the respondents indicated that they did not shop online and were removed from the sample data. Eight of the responses were missing data and removed from the sample, leaving 195 useable responses.

The research measures were checked for dimensionality with factor analysis; results are shown in Table 4. The scales are considered unidimensional with the percent variance in first factor being greater than 0.60 (Hair, 1998, p. 117). The Cronbach's alpha scores were all greater than 0.70 and are considered reliable (Hair et al., 1998, p. 118). Also shown in Table 4 are examples of an item from each scale to show content validity. The complete survey questionnaire is shown in Appendix B and the factor analysis results are in Appendix C.

Table 4
Reliabilities and Factor Structure of Scales

Scale	# Items	Sample of Item	Cronbach **Alpha**	% Variance in **First Factor**
TP	**3**	**I am busier than most** people I know.	**0.80**	**77.3**
PV	**4**	**The prices of the products and** services available at this site (rated from (1) poor to (5) excellent).	**0.85**	**63.5**
PS	**2**	**This site costs me a lot of time to** make a purchase.	**0.80**	**83.6**
ITB	**3**	**How likely is it that you will purchase** from this site in the next three months?	**0.84**	**79.0**

Hypothesis Testing

Based on the research model (Figure 2), simple regression was performed using Perceived Product Value (PV) as the dependent variable and Time Pressure (TP) as the independent variable. Regression was performed using Intention to Buy as the dependent variable and TP as an independent variable; then

with Intention to Buy as the dependent variable and Perceived Value to Consumer as the mediating variable. The result for each hypothesis is described below.

Time Pressure and Perceived Value

Hypothesis one, which states that perceived time pressure, has no or a negative influence on perceived product value is rejected. As shown in Table 5, the significance value is less than 0.05; therefore, there is a significant relationship between time pressure and perceived product value.

Table 5
Regression Analysis on Dependent Variable PV

Independent Variable	**Hypothesis**	**Standardized Coefficient for Independent Variable**	**Sig. Value**	**Hypothesis Test**
Perceived Value (PV)	$H1_0$: Perceived time pressure has no or a negative influence on perceived product value. H1a: Perceived time pressure positively influences perceived product value.	.225	.002	Reject null. ($p < .05$)

This finding is consistent with the study conducted by Alreck and Settle (2002) on timesaving perceptions of consumers using the Internet and catalogue shopping. The results of this study indicated that consumers perceive Internet and catalogue shopping to be time savers.

In 1976, Jacoby et al. presented three assumptions about the relationship between time and consumer behavior: (a) for every consumer time has value because it is limited and finite, (b) time is a resource that is constantly being used and individuals are free to use this resource as they choose, and (c) time can be a cause and/or an effect of consumer behavior. Time can be an antecedent in a consumer's decision to buy. Time could also be a consequence in the form of post-purchase satisfaction based on the amount of time spent researching and thinking about the purchase (Jacoby et al., 1976). Thus, in this study, consumers demonstrate that the time saving qualities of the Internet are valuable, their perceive shopping on the Internet as a time saver, and are prompted to make purchases.

Time Pressure and Intention to Buy

Hypothesis four, which states perceived time pressure has no or a negative influence on consumer intention to buy online, fails to be rejected. As presented in Table 6, the significance value is greater

than 0.05; therefore, the null hypothesis stating that there is no relationship or a negative relationship between perceived time pressure and intention to buy is not rejected.

This finding is consistent with the study by Teng et al. (2007), which found that perceived time pressure increases the tendency to differ choice. In the same study time pressure was also found to influence the amount purchased. These findings also elaborate on some of the mixed results that were found in research conducted on time pressure and shopping behavior prior to the growth of the Internet. For example, in Lavin's (1993) study of working wives and their husbands and whether employment outside the home contributes to the feelings of time pressure and whether or not feelings of greater time pressure are associated with mail/phone order preferences for both spouses, no relationship between consumers feeling greater time pressure and their preference in shopping alternatives was found.

In contrast, Mattson & Dubinsky (1987) and Srinivasan and Ratchford (1991) found that time pressure did influence consumer behavior. Mattson & Dubinsky (1987) found that situational factors (gift/self shopping and time pressure) influence pre-store shopping but not store visit patterns. Srinivasan and Ratchford (1991) found in their examination of search behavior for new automobiles that previous experience with car shopping reduces the amount of time spent shopping and thus time pressure is not a factor.

Table 6
Regression Analysis on Dependent Variable ITB

Independent Variable	Hypothesis	Standardized Coefficients for Independent Variable	Sig. Value	Hypothesis Test
Time Pressure (TP)	$H4_0$: Perceived time pressure has no or a negative influence on consumer intention to buy online. H4a: Perceived time pressure positively influences consumer intention to buy online.	-.087	.164	Fail to reject the null. ($p > .05$)
Customer Perceived Value (PV/PS)	$H5_0$: The perception of value has no or a negative influence on a consumer's intention to buy online. H5a: The perception of value positively influences a consumer's intention to buy online.	-.229	.001	Reject null. ($p < .05$)

Conclusion

The answer to the research question, does time pressure influence an online consumer's perception of value or intention to buy online is, the analysis indicates that there is a relationship between the variables of perceived value and time pressure. There is no significant relationship between perceived value and the dependent variable intention to buy; however, perceived value to consumer does have a relationship to intention to buy; therefore, time pressure may indirectly be an influence on intention to buy online.

Limitations of Study

A limitation of this was that the findings, while important, will not necessarily generalize to all individuals who buy online because the data collected from this study was descriptive of only 195 individuals who are members of the professional American Society for Quality (ASQ). However, the members of these organizations are diverse in age, education, ethnicity, gender, household income, and

marital status. In addition, a number of the findings in this study were consistent with studies in the literature, which suggests that there should be some generalizability.

The use of the Likert scale posed a limitation. As Gill and Johnson (2002) noted, participants may or may not give an accurate assessment of their beliefs, feelings, attitudes or behaviors. Rather, they may answer according to what they feel the correct response should be not how they really feel, or may respond by always marking the most neutral possible answer. Thus, the data is legitimate only to the extent that participants are completely honest

Opportunities for Future Research

Based on the findings and conclusions of this study, recommendations are presented in this section. These recommendations suggest further areas for qualitative, rather than quantitative, research because of the greater insight that qualitative research can provide on factors that influence consumers to buy online and to add to the body of knowledge using a different research method.

An assumption of this study that was noted early in the paper was that that the study participants, who were members of a professional organization, were diverse enough in age, education, ethnicity, gender, household income, and marital status to render the survey results generalizable to the U.S. population. However, it is recommended that this study be conducted with larger sample sizes and a broader diversity of the sample groups included in the population to expand and support the findings of the present study. Another aspect that could be part of such a study is comparisons among professional organizations in different sectors (e.g., healthcare sector and private sector, public and private sector, etc.). Broadening the population would yield greater insight into the online buying behavior of professionals and perhaps lend greater support to the findings of the present research.

In this study it was found that there is a relationship between time pressure, shopping online and perceived value, yet time pressure was not found to have a relationship with intention to buy. This suggests that perhaps the placement of the questions in the survey may have had an influence on the study's results. Therefore, it is recommended that further study focus on the relationship between time pressure and online consumer behavior by utilizing a survey questionnaire in which the TP questions are placed closer to the ITB questions at the end of the survey. This is in contrast to the survey used in this study where the TP questions were at the beginning with other questions in the middle then the ITB questions at the end.

Business Implications

The growth and strength of the Internet offers new benefits for both consumers and businesses, which is changing the way business is conducted. For businesses, the Internet provides the opportunity to reach a broader range of consumers and to complement traditional brick-and-mortar business. For

consumers, the Internet allows them to get instant feedback about information or availability and delivery status of products without time or geographical constraints.

Summary

This paper examined the influence of time pressure on an online consumers' perception of value and intention to buy using factors that had been found significant in previous research. Time pressure was shown to influence perceived product value and a relationship between time pressure and intention to buy was not found to be statistically significant. This analysis indicates that further study about perceived time pressure and an online consumer's intention to buy is needed.

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LOGIC MODELS, DRIP, FINAGLE'S LAWS, SABERMETRICS, AND THE AUTOPTIC PROFERENCE: EXPLORING WHAT REALLY MATTERS FOR NATIONAL ACCREDITATION OF AN EDUCATIONAL LEADERSHIP PROGRAM

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ABSTRACT

We use a program logic model to launch a critical exploration of the national accreditation process for an educational leadership program in the Graduate School of Education at Regent University, one of the two initial stand-alone accreditations awarded by the Teacher Education Accreditation Council (TEAC) for such administrator programs. Although awash in data and information, these programs often miss the essential pieces of evidence that should really matter. We utilize Wigmore's idea of the autoptic preference from the field of law to prompt a deeper understanding of how the school administrator should be prepared to radically improve preK-12 education. This requires re-thinking some deeply held assumptions and devising better methods to capture necessary feedback.

ESTIMATION AND ANALYSIS OF NET MARGINAL COSTS OF SCHOLARSHIP PROGRAMS

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ABSTRACT

Almost all US colleges offer various scholarship opportunities to its prospective and current students. West Liberty University (WLU) is one of them. WLU is a four-year state college located in West Liberty, West Virginia. Athletic and academic tuition and housing waivers, athletic grants and academic scholarships have been the types of awards historically granted to WLU students. Many research studies have focused on the total cost of scholarship programs in higher education. However, there is a gap in the scholarly literature. None of the past studies focused on the cost at micro level by including implicit values in their estimations. Even though an optimization model wasn't developed and used to estimate net marginal costs, a simple mathematical model laid the foundation of the estimations. Implicit values of each program type were added to gross marginal costs to obtain net marginal costs. This paper addresses the following key question: which scholarship program type is the most cost effective based on estimated net marginal cost per student? The findings of this study are expected to help the university administrators and state officials make financially beneficial yet academically sound decisions. The results show that incorporating implicit values decreases the cost of each scholarship program significantly. The annual net cost of administering all scholarship programs is estimated to be only $195,510 while the actual cost was approximately $1.8 million in 2008. Academic and athletic tuition waivers are found to be the costliest scholarship programs to administer. While athletic grants and academic scholarships impose less but positive costs to the college, academic and athletic housing waivers are found to create revenue for the college. Based on the findings of the study, housing waivers should be awarded to more students while reducing the number of tuition waiver recipients to increase cost-effectiveness of overall scholarship policy.

Keywords: Economics of Higher Education, Scholarship Programs, Marginal Costs, Implicit values.

TRANSFORMING THE ACADEMY: STRATEGIC THINKING AND/OR STRATEGIC PLANNING?

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I sometimes feel like I'm behind the wheel of a race car ... One of the biggest challenges is that there are no road signs to help navigate. And, in fact, no one has yet determined which side of the road we're supposed to be on.

—Stephen M. Case, Chairman, AOL Time Warner

ABSTRACT

Higher education is experiencing environmental disruptions that challenge today's leaders and the academy itself to become more agile. This paper shares the application of the strategic thinking protocol (STP) which illustrates a new way of planning called strategic thinking to deal with external pressures for change. To organize our argument we borrow the strategic thinking protocol developed by the lead author. The STP is grounded in a social cognition model of change but recognizes components of the political and cultural models. The STP framework uses core capabilities of strategic thinking skills, strategic sensitivity, value specification, strategic conversations, minimum specifications, chunking change and strategic fitness to develop the actionable plan referred to as a statement of strategic intent in a department of educational leadership and a college of education and compares the results to a traditional strategic planning effort used at the university level.

Key words: change, strategic planning, strategic thinking, agility, anticipating, articulating, statement of intent. 2 tables, 1 figure, 25 references

Introduction

The object of planning is change. Planning is a process in which long term goals are transformed into short term tasks and objectives. The planning process seeks to answer four familiar questions: What do we do? Where do we stand? Where do we want to go? How do we get there?

In traditional strategic planning, answering these questions is heavily dependent on data, data analysis and operations research techniques such as SWOT analysis and scenario planning. It's a process that inventories, sorts, analyzes and assesses substantial amounts of data. It relies on long-term planning, linearity and rationality. The process results in a strategic plan which many times displays hierarchies of goals that cascade throughout the organization all tied to the central plan.

There is clear agreement that the idea of strategic planning is good. After all who doesn't want to see the future, find new possibilities and recognize threats that facilitate or hinder our search for success, and then establish and seek to position the organization in terms of its environment through a series of cascading goals and objectives? Unfortunately, it has been estimated that between 70-90% of all change efforts fail (Axelrod, Axelrod, Jacobs, Beedon, 2006; Covey, 2004; Kaplan & Norton, 2004; Sirkin, Keenan, Jackson, Kotter, Beer, Nohria, & Duck, 2005). Although change is unavoidable, planned change does not appear to be so.

Strategic planning worked well in the pre-digital world where formal structures held organizations together. There is also agreement that it works less well in today's more dynamic environments where values, culture, commitment to the common good of the organization are the glue that holds organizations together (Baldridge, 1983; Birnbaum, 2000; Boon, 2001; Chussil, 2005; Mintzberg, 1994; Robbins & Coulter, 2002; Stacey 2007; Shipengrover, 1996).

When strategic planning techniques are implemented in a mechanistic organization with high levels of certainty and agreement they work well. So why doesn't it work in times of uncertainty and ambiguity? More specifically why doesn't work well in higher education?

Birnbaum (1991) and Kezar (2001) point to distinctive organizational features found in universities - goals which are difficult to quantify - relative independence from environmental influences - anarchical decision-making - voluntary collaboration - multiple power and authority structures - image as opposed to bottom line performance measures - which make them difficult to change. In addition to organizational features, Pisapia (2006) suggests that failure in part is due to leader inadequacies such as: (a) they are trained in and rely upon a linear thinking mindset, which does not work in situations characterized by ambiguity and complexity; (b) they are unable to identify critical societal and institutional forces impacting their environment and thus do not connect their organizations to the major themes associated with success; (c) their concept of change is also linear and therefore they overuse quantifiable parameters in the change process and seek to rationally plan their way to success; and (d) they do not see their organizations as dependent upon the actions and views of other organizations and individuals, therefore, they do not connect with significant forces on their critical paths of success (p. 2). Kezar (n.d., p.6) adds that failure as seen from the research of Eckel and Kezar (2003), Gioia and Thomas (1996), Schön (1983), and Weick (1995) is also in part due to the fact that

"people fundamentally do not understand the proposed change and need to undergo a learning process in order to successfully enact the change."

While organizational, leader, and learning features are important facilitators or barriers, essentially, the reason strategic planning works less well today is due to its most important feature of a heavy reliance on rational and linear assumptions of cause and effect about events. This leads to difficulty of predicting in complex environments, results in narrowing vision, creating a rigidity of the process, destruction of commitment, increase of politics, shortened tenure of lead administrators, and the process itself becoming more important than the results. Most scholars suggest that the process by which strategy is created must be reconceived to meet the needs of a rapidly changing environment.

Problem and Purpose

Higher education institutions are not mechanistic organizations. Today, higher education institutions are challenged by changes in fiscal pressures, technology explosions, internationalism, student and community demographics, faculty roles to meet the needs of communities and the people who live in them and serve public purposes. When the gap between the interests of the Academy and the interest of society widens their legitimacy is questioned (Boyer, 1994; Ghosal, Bartlett, & Morgan, 1999; Magrath, 1996). As this gap has expanded, state appropriations have declined and are projected to continue to decline in the long term. In response the Academy has tightened enrollments, raised tuition, and negotiated new relationships with their states to become quasi-private institutions (Mortenson, 2004; Selingo, 2003). The argument advanced for funding declines is that colleges and universities are not meeting the public's needs. Scholars suggest that serving society is a compelling obligation, yet the gap is growing between what society needs and what higher education currently provides (Cherwitz, 2005; Newman, Couturier, & Scurry, 2004).

Universities that are more dependent on state funding must change to reconcile this perceived gap. Even those who wish to remain independent must change to garner more resources. So change is inevitable, but success is not. The problem confronting the Academy is how to transition from an organization of inward-looking silos to an organization of collaborative outward-looking departments and colleges that shrink the gap. Clearly the challenge concerns organizational change that alters the attitudes, values, beliefs, and behaviors of the institution, its employees, and the public. In response to these important issues, scholars and institutional leaders are calling for new models and "new thinking" to expand institutional boundaries and restore the social compact between higher education and colleges and universities (Walshok, 1995).

This paper provides a model of change that meets the unique organizational features of higher education institutions. The paper first describes the difference between strategic planning and strategic thinking, and then describes an intervention - the strategic thinking protocol - to guide higher education change. Finally it presents the expected findings from two case studies [Department of Educational Leadership, College of Education], of applications of the protocol at Florida Atlantic University. The

results of these cases will then be compared to the results of a traditional strategic planning process utilized at the University level.

Theoretical Framework

Just as there is clarity on the challenges facing higher education institutions there is also clarity on the critical nature of strategic thinking rather than strategic planning to an organization's success (Bonn, 2001). Strategic thinking, which is often intertwined with strategic management and strategic planning in the literature, has been offered as the new planning organizer for dynamic organizations including universities.

Bonn, (2001), Graetz (2002), Liedtka (1998), and Mintzberg (1994), are among many who draw a clear distinction between the systematic nature of pre-identified strategies called strategic planning and the more integrated perspective of strategic thinking. Mintzberg (1994) for example, noted that thinking strategically is distinct from conventional conceptions of planning. Analysis which is the hallmark of planning involves a need for logic, reasoning, linear and rational thinking. It involves being able to manipulate words and numbers. Strategic thinking, on the other hand, places a premium on synthesis and integration and requires the ability to examine new possibilities dealing with large chunks of information, and the ability to pull pieces together into a big picture. It involves being able to recognize patterns and visual images. In strategic thinking not only are the data sources different but the analysis of the data is different than strategic planning.

What exactly is strategic thinking? How does it differ from strategic planning and/or strategic management? Strategic thinking is the ability to analyze influencing factors inside and outside the organization, to discover strategic direction that should guide the organization's decision-making and resource allocation for a period of 3-5 years. Leidtka's (1998) taxonomy offers an overview on the differing dimensions of strategic thinking versus strategic planning. These dimensions include: vision of the future, strategic formulation and implementation, managerial role in strategy making, control managerial role in implementation, strategy making and process and outcomes. Table 1 provides an overview of these differentiations.

Table 1
The Difference between Strategic Thinking and Strategic Planning

	Strategic Thinking	Strategic Planning
Vision of the Future	Only the shape of the future can be predicted.	A future that is predictable and specifiable in detail.
Strategic Formulation and Implementation	Formulation and implementation are interactive rather than sequential and discrete.	The roles of formulation and implementation can be neatly divided.
Managerial Role in Strategy Making	Lower-level managers have a voice in strategy-making, as well as greater latitude to respond opportunistically to developing conditions.	Senior executives obtain the needed information from lower-level managers, and then use it to create a plan which is, in turn, disseminated to managers for implementation
Control	Relies on self-reference – a sense of strategic intent and purpose embedded in the minds of managers throughout the organization that guides their choices on a daily basis in a process that is often difficult to measure and monitor from above.	Asserts control through measurement systems, assuming that organizations can measure and monitor important variables both accurately and quickly.
Managerial Role in Implementation	All managers understand the larger system, the connection between their roles and the functioning of that system, as well as the interdependence between the various roles that comprise the system.	Lower-level managers need only know his or her own role well and can be expected to defend only his or her own turf.
Strategy Making	Sees strategy and change as inescapably linked and assumes that finding new strategic options and implementing them successfully is harder and more important than evaluating them	The challenge of setting strategic direction is primarily analytic.
Process and Outcome	Sees the planning process itself as a critical value-adding element.	Focus is on the creation of the plan as the ultimate objective

Source: (Liedtka, 1998).

There is growing agreement that strategic thinking and strategic planning are interrelated and both are necessary for effective change to occur (Heracleos, 1998; Hussey, 2001; Liedtka, 1998). The fault line is drawn by seeing the purpose of strategic thinking as envisioning potential futures, discovering innovative strategies to move to the future state, and internally creating horizontal alignment. The purpose of strategic planning in this union is to operationalize the strategies and initiatives developed through strategic thinking. Thus organizations first engage strategic thinking which creates a common direction and a broad set of initiatives to move to a future state, and then strategic planning is put into

place to develop the details. “Thus what is being proposed in large measure . . . is a dialectical framework within which strategic planning and strategic thinking work in tandem, rather than one in which strategic planning impedes the flourishing of strategic thinking.” (Lawrence, 1999, p.13)
There is little clear agreement on the core elements related to strategic thinking. Several proposals have been put forth. All agree that the activity results in a plan commonly referred to by strategic thinkers as a statement of intent (see Hamel & Prahalad (1994). Liedtka’s elements include system perspective, focused intent, thinking in time, hypothesis-driven, and intelligent opportunism. She says, "A strategic thinker has a mental model of the complete end-to-end system of value creation, his or her role within it, and an understanding of the competencies it contains." O'Shannassy (2003) proposed a model for what he called the 'Modern Strategic Management Process' in which strategic thinking is the starting point. He said: "...strategic thinking combines creativity and analysis which facilitates a problem solving or hypothesis oriented approach” (p.57).

Bonn (2005) suggests the key elements of strategic thinking are systems thinking, creativity and vision. She said "research on strategic thinking should address the following levels: (a) the characteristics of an individual strategic thinker; (b) the dynamics that take place within a group of individuals; and (c) the organization context." (p. 340) Pisapia, Reyes-Guerra and Coukos-Semmel, (2005) break the term down into teachable concepts. They suggest that strategic thinking involves being able to utilize systems thinking, reflection, and reframing skills. They conceived these skills as interrelated and complementary thought processes that sustain and support one another. They theorized that when they are used in tandem, leaders are better able to maneuver through complex environments. In later work, Pisapia (2009) identified individual strategic thinking skills, strategic sensitivity, strategic conversations, minimum specifications, chunking change, and strategic fitness as the core elements of the strategic thinking protocol which he teased out of the six habits he associates with strategic leadership.

The intervention

In dynamic environments, leaders and managers at every key intersection of the organization must be able to work in a strategic way! Pisapia’s point of view is that working in a strategic way means developing and executing an actionable strategy (Pisapia & Pang, 2009). He suggests that what works in dynamic times is the leader’s ability to accomplish four tasks: (a) anticipating changes, challenges and opportunities in internal and external environments, (b) creating and articulating common values and direction in a generative/minimum specifications manner, (c) establishing the social capital necessary to mobilize actions, and (d) building the capacity of their organizations by anchoring the learning in engaged, self managed followers/teams. He offers the strategic thinking protocol to develop an actionable strategy and the strategic execution protocol to create the social capital and build organizational capacity. This paper utilizes the portion of his model that deals with strategic thinking.

The protocol, as constructed, results from the interplay of three strategic habits: agility of the mind, anticipating the future, and articulating a direction. It joins agility with anticipating and articulating to pursue two tasks: (a) anticipating changes, challenges and opportunities in internal and external

environments, and (b) creating and articulating common values and direction in a generative/minimum specifications manner to foster perspective transformation and organizational fitness. The successful strategy is one that meets the characteristics of the organization's environment and its internal resources.

As seen in Figure 1 agility is the core competency that drives the protocol features of anticipating and articulating. Agility refers to the ability of participants to use three strategic thinking skills: systems thinking, reframing and reflection in ways that combines rational knowledge with intuition, and promotes individual and organizational self-discovery, and open mindedness. The result of using these skills is a mindset that guides thinking and is successful in interpreting environmental forces and identifying strategic initiatives.

Figure 1. The Elements of the Strategic Thinking Protocol

Anticipating involves the development of strategic sensitivity to signals from the organizations internal and external environment by continually reading both objective and subjective data provided by the environments. The key tools of anticipating are looking, listening, and learning - analysis and intuition - asking the right questions. Articulating involves dialoguing, integrating, distancing to gain perspective, seeing things from different perspectives which allow time and information for reframing - gaining new perspectives and identifying new alternatives - unifying as leadership and members understand and trust each other. The key tools are surfacing and sharing assumptions, understandings and passions through strategic conversations which break the pattern of debate, strength of one input perspective.

The strategic thinking protocol is grounded in a social cognition model of change that seeks to alter mental models by using a generative strategy - multiple interpretations - strategic conversations -

consensus shaping - navigating. This model reflects the most recent paradigm shift in leadership thinking which considers how ideas, thoughts and mental representations develop and are used by leaders to make a mental connection between the leader and follower (Gardner, 1995; Senge, 1990). This cognitive approach focuses on affecting change in an organization's beliefs, values and direction by engaging members in sensemaking processes. The mental connections it seeks form the foundation for enhanced performance and continuous organizational learning.

The protocol also recognizes components of the political model of change - persuasion, informal negotiation, mediation, and coalition-building. Remnants of the cultural model of change - symbolism - tradition - rituals - are also evident as the process moves along (see Eckel & Kezar, 2003 & Kezar, 2001 for full descriptions of these change models). As the protocol proceeds through its paces a collective understanding of the issues and future possibilities emerge and are codified in a statement of strategic intent. As Doz & Kosonen (2009) suggest, what matters is that a collective commitment and bonding to the outcome of the decision process emerges from the protocol.

The protocol

The strategic thinking protocol outlines a process to follow to develop a statement of strategic intent. The Statement of Strategic Intent establishes the mission and aspiration for the organization to work toward. When properly crafted, the one page statement of strategic intent [front and back] serves as an orienting device that articulates the Intent and provides a sustaining direction around which organizational members [hereafter, members] can cohere. It does not focus on today's problems but on tomorrow's opportunities. The statement of intent contains an aspiration, or hope, for what the organization wants to become. It also contains the blueprint for organizational behavior, and the initiatives that will move the organization toward their aspiration.

The strategic thinking protocol is guided by a committee [each committee adopts its unique name: the New Directions Task Force, the steering committee - the navigating team - the guiding coalition]. This nucleus of senior faculty and administrators with credibility guide the process, sort the input, search for clues that it's time to adapt and what that adaptation should look like. It's important to place key opinion leaders on the committee. As Burton Clark (1972) suggested, in higher education these opinion leaders are senior faculty whose support and participation is necessary if change is to occur. He says, "A single leader . . . can initiate the change, but the organizational idea will not be expanded over the years and expressed in performance unless ranking and powerful members of the faculty become committed to it and remain committed even after the initiator is gone" (p. 177). The charge to this committee is to reviews data, participate and observe conversations and interviews, develop interview summaries, and draft statements for the full community to review and provide input on. The committee receives the input and notes items that need adjustment (if any), discusses the changes and redrafts reports to the

full membership. The product of the committee's work is the statement of strategic intent. Essentially, they dialogue, listen, learn, and craft in an iterative process until agreement is reached.

A key understanding is that all members receive the same information as the committee. The purpose here is to be transparent so all members understand the problems faced and can participate in crafting the direction that will be taken. The information is processed in the following way.

Step 1 – Quantitative and qualitative data are gathered from the internal and external environment. The quantitative data comes from the official University Database upon which decisions are being made. The qualitative data is gathered through interviews of individuals outside the College; summaries are prepared and shared with all members. [The following skill is needed - ability to use analytical techniques to evaluate and synthesize data from multiple sources].

Step 2 – A series of 5 strategic conversations – following a listen – dialogue – learn - sequence are held with all members participating.

- ***Strategic Conversation #1*** **-** What do others expect us to do?
- ***Strategic Conversation #2*** – What do we expect of ourselves?
- ***Strategic Conversation #3*** – What are we in business to accomplish?
- ***Strategic Conversation #4*** **-** What do we aspire to become?
- ***Strategic Conversation #5*** **-** What do we need to do to move toward our aspiration?

Step 3 **–** At the end of each conversation, the committee makes strategic choices as to where the investment of time and money will return the best payoff on a college wide basis then presents draft statements for full member review – until consensus on each item – mission – aspiration – core values – initiatives has been achieved. [Aspiration should be compelling – and measurable.]

Step 4 – When the Statement of Strategic Intent is adopted by the organization as policy, it must then be implemented so that it is a living document that guides the organization toward its aspiration. At this time, the committee is disbanded and the protocol enters into the strategic planning phase – implementing teams are structured around each priority – it is this team's responsibility to flesh out the priority and create a concrete response, and then execute it.

Step 5 - The planning phase is guided by a quality committee [composed of different members than the strategic thinking committee]. The quality committee is charged with developing a report card to continuously review the implementation of the approved Statement of Intent. The quality committee uses this report card as a management tool to ensure that the Intent is implemented in a timely fashion.

The protocol results in a shared statement of strategic intent [an actionable plan] which is central to developing a high performing organization. It sets the direction. It describes the clear concrete target. It describes the values that the organization will gauge itself up against. It identifies the initiatives that will move the organization along its path to high performance. And, it does all this on one page front and

back. It is not meant to rest on top of a book self. It forms a psychological contract with followers and guides the organization's actions. It is meant to be a living guiding statement for the organization/team that creates a new reality for a while. In time all strategy decays and must be recreated. It is suggested that the initiatives found in a statement of intent should be viable for a 3-5 year period.

Method

The study employed a qualitative multiple case study design to conduct this exploratory research. Creswell (2003) said about the qualitative approach "is one in which the inquirer often makes knowledge claims based primarily on constructivist perspectives, or advocacy/participatory perspectives, or both. . . The researcher collects open-ended, emerging data with the primary intent of developing themes from the data" (p. 18).

The rationale for the qualitative approach to this research is that the elements of strategic thinking (from an empirical perspective) have not been studied before. We have chosen a Type 3 design, that Yin (2003) calls "holistic multiple-case." A holistic multiple-case study refers to a research with more than one case study but, with only one unit of analysis. Multiple cases were examined because they provide more evidence than a single case and add confidence to the findings (Hakim, 1987; Miles & Huberman, 1994; Yin, 2003). These data provided for the convergence of multiple sources of evidence in a process of triangulation (Eisenhardt, 1989; Yin, 2003).

The unit of analysis was the department, college and university's use of strategic thinking and/or strategic planning. Three cases studies were drawn from one higher education institution. The strategic thinking protocol was applied to a university department and college. The third case is the use of the strategic planning process employed at the University level. Interviews, observations, open-ended questions, and document review were used to collect the data. However, in depth interviews were the main method used. The interviews were transcribed. Observations were written in the form of summaries. Documents used in the thinking and planning processes were examined. The three in-depth cases were used to deduce theory from practice by exploring the use of strategic thinking elements: strategic sensitivity, value specification, strategic conversations, strategic fitness, minimum specifications, chunking change were used during the application of the protocol and how those elements would facilitate the development of a strategically fit statement of intent.

Expected Results

The University case which used the traditional strategic planning method was completed in 2008. The strategic planning process resulted in a plan that was detailed, with goals, objectives and sub objectives. Measures for each were established and the expectation was that each college, department and unit would use the plan to create unit plans. The process was led by external consultants and followed the traditional, political model and cultural models of change. Little attempt was made to change mental

models or utilize multiple perspectives of those affected by the plan. Values specification was not a core activity. The resulting plan relied on maximum specification with large initiatives. A total of 12 goal areas and 35 objectives were created. Transparency was afforded through sharing final drafts and requesting comment. A dashboard of indicators was established to measure the implementation of the plan. The administrative staff and board of trustees were satisfied with the outcome of planning.

The Department case which used the strategic thinking protocol was completed in December 2009. The College case which also used the strategic thinking protocol was begun in January 2010 so data from that analysis are not available. Analysis is ongoing, therefore only preliminary expected findings from the two cases available at this time. These findings are recorded on Table 2.

The strategic thinking protocol resulted in a two page plan that was strong on identifying core values to portray the expectations of the unit which was used to set internal behavioral standards and evaluate the expectations external stakeholders had of the unit. Transparency and participation was achieved by all members getting the same information through focus group type interviews and data days, and conversations focused on feedback and adjustment of ideas by the coordinating committee. The resulting plan produced 5 initiatives to focus unit work to achieve its aspiration. Planning teams convened around each of the 5 initiatives to pursue them. A project management score card was employed to review implementation and record results. The faculty and administrators were satisfied with the outcome of planning and the process that was used to incorporate their views into the document.

Table 2

Expected Findings from the Study

Element	Strategic Thinking	Strategic Planning
Change Model	Social Cognitive; elements of Political and Cultural	
Strategic Thinking Skills	Not identified	Not identified
Strategic Sensitivity	Data and Narrative driven	Data Driven
Alignment	Horizontal - to gain sync among team	Vertical to insure team compliance
Value specification	Strong component - creates self reference point in minds of participants Uses values to control and coordinate activity	Not a strong component Uses measurement to control and coordinate activity
Strategic Conversations	Strongly Evident - participants understand larger system and how they connect to it	Not used - need information is obtained - plan is crafted and disseminated for implementation
Minimum Specifications	Minimum Specifications	Maximum Specifications
Strategic Fitness	Fit to external and internal environment - process adds value to plan	Fit to external environment plan is ultimate objective
Chunking Change	Small initiatives building on each other	Large stand alone initiatives

Importance

The study is important for several reasons. Foremost, any attempt to embed strategic thinking within an organization processes is stymied by the lack of a working model of strategic thinking (Amitabh & Sahay, 2008, p.7; Masifern, & Vila, 2002 p. 4). This paper outlines a potentially strong model that addresses the unique organizational and participant features of higher education institutions as opposed to downloading a model created to operate in a for profit corporation.

From a research point of view, the strategic thinking elements involved in creating a strategic direction has not been addressed thoroughly in the literature. Though there is a multitude of literature on the necessity of strategic thinking within the business world and in large multi-national corporations, little if any literature focuses on whether or not these all-important skills are being incorporated into our higher education leadership practice.

From an organizational point of view, this protocol, when properly applied, should help higher education leaders create a collective mindset that makes sense of complexities facing the organization. It also enables the organizational unit to identify, predict, respond and adapt to non-linear change opportunities and challenges stemming from its environment.

Finally, this study is considered foundational because it specifies the elements of a new planning technology and describes its use in a higher education setting. Additional studies need to be carried out in other nonprofit and for profit settings to determine if strategic thinking or strategic planning has the greatest impact on individual and organizational performance. From these studies, it is hoped that professional development modules can be developed and databases created in order to further the effective use of the elements of the strategic thinking protocol.

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ENTREPRENEURIAL CULTURE AT TWO-YEAR COLLEGES: A COMMITMENT OR AN OPTION

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ABSTRACT

This paper seeks to address the question of how do two-year colleges create an organizational culture of entrepreneurship. Through examination of relevant literature on the issue of entrepreneurship within college and university environments and through analysis of a survey of members of the National Association for Community College Entrepreneurship (NACCE), this paper identifies some general elements that could contribute to answering this question. Key findings of the study indicate high correlation coefficients for the following: (a) level of satisfaction with the entrepreneurship culture in the community college and progress in the entrepreneurship programs; (b) faculty receive some incentives to promote entrepreneurial culture and overall satisfaction with the entrepreneurship culture in the community college; (c) in spite of the fact that the colleges offer entrepreneurial programs, the major obstacle faculty face in promoting an entrepreneurial culture is insufficient college interest; (d) faculty receive some incentives in order to promote entrepreneurial culture and the level of satisfaction with the progress of the entrepreneurship program in the community college in the last five years. Key findings of this survey indicate that creating an entrepreneurial culture requires the commitment of all the constituents of the community college, and a review of the literature on entrepreneurship suggests that it is no longer an option for two-year colleges to provide entrepreneurial education; it is mandate if they are to prepare students for the realities of the twenty-first century.

Key words: Organizational culture, strategic entrepreneurial process, and entrepreneurial education

Introduction

Traditionally, the academic community has focused more of its efforts on investigating entrepreneurship education at four-year colleges, rather than at two-year colleges. The aim of this research paper is to investigate specific strategies that two-year colleges can implement to create an institution-wide culture of entrepreneurship. The research question addressed in this paper is: how do two-year colleges create an organizational culture of entrepreneurship? The next part of this research paper addresses theoretical concepts such as organizational culture, strategic entrepreneurial processes, entrepreneurial education, and entrepreneurial opportunities for minorities.

Background and Literature

To develop entrepreneurial education in higher education, a multidisciplinary effort is necessary; this effort should be accompanied by an organizational culture change and a strategic entrepreneurial process. In order to infuse an institution with an entrepreneurial culture, it is necessary to have the participation of students, faculty, and staff and to have the commitment and leadership of the top management of the college.

Organizational Culture

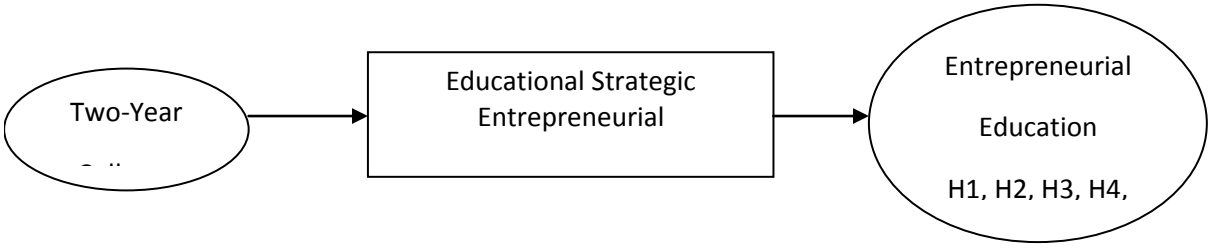
Organizational culture is defined as a system of values and beliefs that is shared by the members of an organization. To create an entrepreneurial culture, colleges and universities need to be consistent in communicating the message of entrepreneurship in their vision and mission statements, which will help to ensure that all members of the institution follow the entrepreneurial educational strategy as a part of the culture and not as a part of a new fashion idea (Stone, 2007). It is also vital to establishing an entrepreneurial culture that all organizational areas are involved in the process.

It is generally believed that as a society, we live and act as a tribe. One novel concept regards the notion of tribal entrepreneurship. It is defined as a system where entrepreneurs understand themselves and the people who cooperate with them. The consequence of this behavior is that entrepreneurs know exactly what strategies are necessary to reach their organizational goals. In addition, tribal entrepreneurship is related to transforming ordinary relationships into extraordinary relationships that care about network actions (Logan, King & Fischer-Wright, 2008). Educational leaders seeking to create entrepreneurial cultures within their colleges and universities need to expand their reach into diverse networks such as industrial, professional, and educational associations to identify entrepreneurial opportunities that can help them with new ideas (De Carolis & Saparito, 2006).

Strategic Entrepreneurial Process

To compete in an aggressive educational market, two-year colleges need to utilize the strategic entrepreneurial process to identify opportunities for innovation using cross-entrepreneurial processes and technology to benefit the educational enterprise (Hamm, 2006; McGregor, 2006). The main goal of the process is identification and satisfaction of external and internal customer needs. The customers are the students, faculty, staff, and stakeholders. Entrepreneurship is a process of creation and recognition of opportunities where innovation, decision making, and implementation play an important role in the educational strategic entrepreneurial process (see Figure 1) (Shane & Venkataraman, 2000).

Figure 1. Framework to understand the educational strategic entrepreneurial process



Hypothesis 1: Two-year colleges where students, faculty, and staff participate on the strategic entrepreneurial team will be able to create an entrepreneurial culture better than two-year colleges that do not have the participation of these constituencies on the strategic entrepreneurial team.

Hypothesis 2: Two-year colleges which have the support of top management in creating an entrepreneurial culture will be able to create an entrepreneurial culture better than two-year colleges that do not have the support of top management.

Entrepreneurial Education

The demand for entrepreneurial education has increased over the last 30 years (Lena & Wong, 2003). Today, there exists a trend to study the importance of entrepreneurship in college and university education. It is largely concerned with curricular issues such as the opportunities that colleges and universities offer their students to develop their entrepreneurial skills, and it is also concerned with the outcome of alumni who practice these entrepreneurial skills in the business environment (Binks, Starkey & Mahon, 2006). Universities have to be more active in offering entrepreneurial courses to develop students' entrepreneurial skills, but it is first necessary first to identify the skills needed by entrepreneurs (Laukkanen, 2000; Lichtenstein & Lyons, 2001).

Entrepreneurial education and entrepreneurial success are related (Chusimir, 1988). By offering entrepreneurship education, colleges and universities can contribute to increasing the viability of entrepreneurship as a profession (Donckels, 1991). Improvisation is a primary reason for the failure of some businesses in their first stage (Hmieleski & Corbett, 2006). Thirty-four percent of new businesses disappear in the first two years and fifty-six percent in the first four years (Knaup, 2005). Entrepreneurial education is the solution to avoiding this sad situation.

Entrepreneurial learning is based on creation, recognition, and development of opportunities (Rae, 2006). Entrepreneurial development is achieved through learning oriented education rather than teaching oriented education, and entrepreneurial skills are developed through the learning process (Gorman, Hanlon & King, 1997; Kourilsky, 1980; Kourilsky & Walstad, 1998; Krueger & Brazeal, 1994).

Hypothesis 3: Two-year colleges offering entrepreneurial courses will be able to contribute to development of entrepreneurial initiatives better than two-year colleges that are not offering those courses.

Entrepreneurial Opportunities for Minorities

Latinos and African-American teenagers are more interested in entrepreneurship than White adolescents. Their motivation is to improve their personal financial status and their communities. For minorities, it is important that educational entrepreneurial programs identify two main goals: how future entrepreneurs can give back to society, and how future entrepreneurs can attain their goals of financial independence (Wilson, Marlino & Kickul, 2004).

There is an absence of entrepreneur role models for Latinos and African-American students. It is necessary to prepare faculty to become role models in undergraduate entrepreneurial education because this is the vital stage where students are preparing themselves to enter the market and make a difference in society (Sieh, 2007; Wilson, Marlino & Kickul, 2004).

Hypothesis 4: Two-year colleges with high percentages of minority students will be able to develop entrepreneurial education better than two-year colleges that do not have a high percentage of minority students in their population.

How to Develop Entrepreneurial Education

The following actions for creating an entrepreneurial educational program have been identified from the literature. First, identify successful entrepreneurial alumni, who can mentor groups of students in their areas of expertise. Second, create a faculty advisory committee, composed of members from all departments, to identify commonalities in developing an entrepreneurial culture. Third, develop an entrepreneur seminar to address hard technology topics such as technology and entrepreneurship. Fourth, create opportunities where students can learn about entrepreneurship focusing on the areas of soft technology (Binks, Starkey & Mahon, 2006).

Hypothesis 5: Two-year colleges with multidisciplinary teams, which integrate students, faculty, and staff, will be able to develop entrepreneurial education initiatives better than two-year colleges that do not have multidisciplinary teams.

How to Develop Entrepreneurial Faculty and Staff

In entrepreneurial education the emphasis has been placed on the curricular aspects, but something that is missing is entrepreneurial faculty and staff. For this reason, it is important to apply the theoretical entrepreneurial concepts and entrepreneurial practices to the faculty and staff. Entrepreneurial opportunities are identified as the possibilities to transform (academic) input into output, products, or services (Dorado, 2006). Entrepreneurs (faculty and staff) who are able to understand technology and

convert that knowledge into (academic) services or products will be able to satisfy (students') customers' needs (Grebel, Pyka & Hanusch, 2003).

Hypothesis 6: Two-year colleges that encourage faculty and staff to address real world situations will be able to create an entrepreneurial culture better than two-year colleges that are not encouraging faculty and staff to address real world situations.

Target Population

The target population for this research was the 313 members of the National Association for Community College Entrepreneurship (NACCE). The members of NACCE were selected because the founder and executives of NACCE demonstrated a willingness to cooperate with this research. I had the opportunity to visit the NACCE headquarters on August 18, 2008, and met with Mr. Thomas A. Goodrow, the founder, and Mrs. Heather Vansickle, Executive Director, who offered me their support in pursuing my research. The electronic survey was conducted from March to May of 2009.

Survey Development and Administration, and Variables

After I reviewed the literature, I developed the questions for the survey (Kerlinger, 1986). From the literature review, the full sets of variables that I identified are as follows:

1. Community college has the support of the top management executive in creating an entrepreneurial culture.
2. Students understand entrepreneurship issues as they relate to different community college degrees.
3. Entrepreneurship faculty today is stronger than it was five years ago.
4. Overall level of satisfaction with the progress of the entrepreneurship program in your community college over the last five years.
5. Overall satisfaction with the entrepreneurship culture in your community college.
6. Faculty receive some incentives to promote entrepreneurial culture.
7. Major obstacles the faculty face in promoting an entrepreneurial culture (insufficient college interest).
8. College offers an entrepreneurial program.
9. Student demographic profile.

Table 1 presents the information of the survey responses from the electronic questionnaires received. The total sampling was 313 members of the National Association for Community College Entrepreneurship (NACCE). Of the total 68 questionnaires which were received, 64 questionnaires were usable, and 4 questionnaires were unusable. From the 64 usable questionnaires, 30 of them were answered qualitatively and 34 were answered quantitatively. For this paper, I have examined the questionnaires with quantitative responses. The response rate of quantitative questionnaires was 10.86%, the response rate for qualitative questionnaires was 9.58%, and the total response rate was 20.44%.

Table 1. *Information of the Survey Response*

	Frequency	Percent
Total sampling	313	100.00
Non-respondents	245	78.27
Returned usable questionnaires quantitative	34	10.86
Returned usable questionnaires qualitative	30	9.60
Returned non usable questionnaires	4	1.27
Response Rate – Questionnaire quantitative	34/313 = 10.86	
Response Rate – Questionnaire qualitative	30/313 = 9.58	
Response Rate – General quantitative and qualitative	64/313 = 20.44	

Descriptive Statistics and Correlation Coefficients

Table 2 presents the descriptive statistics for the nine variables. Table 3 presents the correlation coefficients.

Table 2. *Descriptive Statistics*

	Mean	Standard Deviation	Number
1. Support of the top management	0.85	0.36	34
2. Students understand entrepreneurship	1.71	0.87	34
3. Entrepreneur faculty stronger than five years	3.18	1.40	34
4. Level of satisfaction with the progress of entrepreneurship program	2.97	1.22	34
5. Satisfaction with the entrepreneurship culture	2.56	1.21	34
6. Faculty receive incentives to promote entrepreneurial culture	2.24	1.58	34
7. Obstacle: Insufficient college interest	2.47	1.24	34
8. College offers an entrepreneurial program	1.58	0.79	12
9. Demographic profile	60.09	33.24	26

Table 3. *Correlation Coefficients*

1	1	2	3	4	5	6	7	8	9
1	1								
2	.457**	1							
3	.113	.407*	1						
4	.405*	.289	.393*	1					
5	.334	.197	.404*	.772**	1				
6	.330	.192	.474**	.650**	.659**	1			
7	-.112	.021	.021	-.292	-.262	-.385*	1		
8	.232	.036	-.089	.285	-.248	.469	-.659*	1	
9	-.190	.315	.282	.206	-.056	-.062	.343	.207	1

1. Support of the top management

** Correlation is significant at the 0.01 level (2-tailed).

2. Students understand entrepreneurship

* Correlation is significant at the 0.05 level (2-tailed).

3. Entrepreneur faculty stronger than five years

4. Level of satisfaction with the progress of entrepreneurship program

5. Satisfaction with the entrepreneurship culture

6. Faculty receive incentives to promote entrepreneurial culture

7. Obstacle: Insufficient college interest

8. College offers an entrepreneurial program

9. Demographic profile

Discussion

The rule of thumb is used in order to interpret the size of the correlation coefficients as follows: very high positive (negative) correlation from .90 to 1.00 (-.90 to -1.00), high positive (negative) correlation from .70 to .90 (-.70 to -.90), moderate positive (negative) correlation from .50 to .70 (-.50 to -.70), and low positive (negative) correlation from .30 to .50 (-.30 to -.50). (Hinkle, Wiersma & Jurs, 1998).

The interpretation of the size of the correlation coefficient is presented from the highest to the lowest. First, satisfaction with the entrepreneurship culture in the community college and the level of satisfaction with the progress of the entrepreneurship program in the community college over the last five years is significant (.772 high positive correlation at the 0.01 level). Second, the faculty receive some incentives in order to promote entrepreneurial culture and overall satisfaction with the

entrepreneurship culture in the community college is significant (.659 moderate positive correlation at the 0.01 level). Third, the college offers an entrepreneurial program and the major obstacles the faculty face in promoting an entrepreneurial culture indicates insufficient college interest is significant (-.659 moderate negative correlation at the 0.05 level). Fourth, the faculty receive some incentives in order to promote entrepreneurial culture and overall level of satisfaction with the progress of the entrepreneurship program in the community college over the last five years is significant (.650 moderate positive correlation at the 0.01 level). Fifth, the students understand entrepreneurship issues as they relate to different community college degrees and community college has the support of the top management executive in creating an entrepreneurial culture is significant (.457 low positive correlation at the 0.01 level). Sixth, the faculty receive some incentives in order to promote entrepreneurial culture and the entrepreneurship faculty today is stronger than it was five years ago is significant (.474 low positive correlation at the 0.01 level). Seventh, the entrepreneurship faculty today is stronger than it was five years ago and overall satisfaction with the progress of the entrepreneurship program in the community college over the last five years is significant (.407 low positive correlation at the 0.05 level). Eight, overall satisfaction with the entrepreneurship culture in the community college and the entrepreneurship faculty today is stronger than it was five years ago is significant (.404 low positive correlation at the 0.05 level). Ninth, overall level of satisfaction with the progress of the entrepreneurship program in the community college over the last five years and the entrepreneurship faculty today is stronger than it was five years ago is significant (.393 low positive correlation at the 0.05 level). Finally, the major obstacles the faculty face in promoting an entrepreneurial culture (insufficient college interest) and the faculty receive some incentives in order to promote entrepreneurial culture is significant (-.385 low negative correlation at 0.05 level).

According to the coefficient correlation none of the hypotheses were supported. It is important to make a conclusion based on the highest and moderate coefficient correlation, which will be presented in the conclusion.

Conclusion

According to the correlation coefficient, some general elements are identified which are needed for the creation of an entrepreneurial culture in a community college. For example, the level of satisfaction with the entrepreneurship culture in the community college and the progress in the programs is 77.2%. The second element is that faculty receive some incentives to promote entrepreneurial culture and overall satisfaction with the entrepreneurship culture in the community college is 65.9%. The third element is that in spite of the fact that colleges offer an entrepreneurial program, the major obstacle the faculty face in promoting the entrepreneurial culture is insufficient college interest (-65.9%). Fourth, the faculty receive some incentives in order to promote entrepreneurial culture and the level of satisfaction with the progress of the entrepreneurship program in the community college in the last five years is 65%.

Finally, to create an entrepreneurial college requires the commitment of all the constituents of the community college. It is no longer an option for two year colleges; it is a mandate if they are to prepare students to compete with the realities of the twenty-first century.

Limitations

The main limitation of this research was the low number of respondents. Perhaps, it is necessary to encourage greater participation in research among administrators and faculty of community colleges. A further limitation of this study was the use of only one organization from which survey participants were drawn.

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PREDICTORS AND INFLUENCES OF HIGH SCHOOL GRADUATION RATES IN MISSISSIPPI PUBLIC SCHOOLS

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ABSTRACT

The purpose of this study was to examine if predictors of graduation rates could be identified in Mississippi public schools. The study included 10 independent variables: average daily attendance, Algebra I scores, teacher salary, socioeconomic status, eighth grade math MCT scores, eighth grade language arts MCT scores, percentage of teachers with advanced degrees, Adequate Yearly Progress, school size, and principal leadership style. The dependent variable was graduation rate. One hundred public high schools were included in the analysis of the first nine independent variables. Eighteen schools were included in the analysis of principal leadership style. Linear regression was used to test the hypothesis of this study using an alpha level of .05. Two independent variables were found to be significant predictors of high school graduation: average daily attendance and percentage of teachers with advanced degrees.

Keywords: secondary education; graduation rates; dropout prevention

Introduction

Failure to finish high school has been characterized as a growing problem in the United States (U.S. Department of Education, 1990) with only an estimated 70% of students successfully graduating from high school (Civic Enterprises, 2007) within four years. These graduation rates are "well below the graduation rates in Greece, Germany, Finland, Japan, Korea, Norway, and Ireland" (Organisation for Economic Co-Operation and Development, 2007). The problem is startling considered that in 2006 the United States was ranked 17th in the World in the percentage of students who graduated high school (Hall, 2007). Unfortunately, the problem is even more prominent among certain ethnic groups; only half of African American and Hispanic students actually graduate from high school. Unfortunately, according

to the former U.S. Secretary of Education, Margaret Spellings (2008), pointed out that some parents will face the reality that the likelihood of their child graduating from high school is about the same as a coin toss. At current levels, some predict the dropout rate may soon create a national crisis (Hall, 2007).

Obtaining a high school diploma has long been regarded as a minimal requirement for an individual to enter and successfully participate in the labor force in the United States (Hall, 2007). Advances in technology and the economic climate of the 21st century have made it even more difficult for students without a high school diploma to be competitive in the job market. Consequently, students who do not graduate are much more likely to be unemployed, receive welfare, live in poverty, and perhaps end up in jail (Spelling, 2008).

When students do not complete high school, there are also financial implications for the nation. For example, it is estimated that dropouts from the class of 2008 alone will cost the U.S. Government $319 billion over the course of the dropouts' lifetime. Some the cost is from lost revenue in the form of income tax that could have come from higher paying jobs (Alliance for Excellent Education, 2008). Additionally, there may be as much as $7.9 to $10.8 billion spent on financial assistance provided to high school dropouts in the form of welfare, food stamps and governmental housing (*Education Week*, 2006).

Purpose of the study

Due to the negative impacts of high school dropout, discovering factors or characteristics that can explain or predict why some schools have a high rate of graduating students while others do not is important. Such discoveries could lead to improved graduation rates. To that end the purpose of this study was to investigate public high schools in the state of Mississippi and identify characteristics that could help explain or predict their graduation rates. This study included a comparison of graduation rates among select schools using several variables: average daily attendance, socioeconomic status as expressed by percentage of students eligible for free or reduced lunch, adequate yearly progress, the percentage of teachers with advanced degrees, Algebra I standardized scores, teacher salary, eighth grade Mississippi Curriculum Test scores, size of school, and principal leadership style.

Research question

This study was guided by the following research question: Is there a relationship between a school's reported average daily attendance, Algebra 1 scores, teacher salary, socioeconomic status, eighth grade MCT scores in math and language arts, percentage of teachers with advanced degrees, Adequate Yearly Progress, school size, principal leadership style, and graduation rate?

Review of literature

Consequences of not graduating high school

Before the era of technology, a student could quit school before graduating, secure employment, and adequately provide for his or her family. However, in the ever-changing job market and economy of the

21st century, this may no longer true. In order to succeed in the modern workforce, a student must be proficient in academic skills such as math and English and must possess adequate technology and social skills. Since the goal of public education is to adequately prepare students, those who do not complete their education have limited opportunities to adequately provide for themselves and their family (Bill and Melinda Gates Foundation, 2006). Limited employment opportunities lead to significantly less earnings for high school dropouts compared to the earnings of individuals with a high school diploma. Subsequently, forty percent of students who do not graduate from high school receive some sort of government relief (Spellings, 2008).

National dropout statistics

A report generated by America's Promise Alliance found that as many as 1.2 million students dropout of school in the United States each year. Although the overall graduation rate is approximately 70%, the situation is much worse for minority students with estimates that as many as 50% will not graduate. Some have termed this a silent epidemic (Civic Enterprises, 2007).

Predictors of graduation and/or dropout rates

Numerous researchers have attempted to identify indicators to predict which students would drop out of school. A Philadelphia study, which began in 1996, followed middle school students for several years to determine if characteristics, or "signals," existed that could predict a student's potential for becoming a high school dropout. The study determined that as early as the sixth grade there were four indicators that could produce a 75% likelihood that a student would dropout of high school. The earlier a student demonstrates one of the characteristics, the greater the probability of dropping out of high school. The four signals are: a failing grade in math, a failing grade in English, excessive absenteeism, or exhibiting unsatisfactory behavior. All of the above-mentioned signals are actually symptoms of more deeply rooted causes. Realizing these characteristics are symptoms of other problems, the researchers acknowledged the root cause of these characteristics could stem from a lack of motivation, low level of support for school at home, and/or social and emotional problems (Nelid, 2007).

In the same study, a group of eighth graders was monitored over a course of several years to determine whether similar predictors existed. The results were the same; students who failed either math or English or were excessively absent from school displayed a 50% greater chance of dropping out in high school (Nelid, 2007). Although the signals were the same, middle school students who displayed the signals had a higher chance of dropping out than high school students. It was determined that 80% of high school dropouts exhibited their first signal before the end of their ninth grade year. These findings supported Gewertz's (2006b) assertions that middle schools should adopt an "early-warning system" that could alert administrators of students who were at risk of dropping out.

Other studies have also found that attendance was a significant predictor of graduation rates. Students who missed up to 5 days per year graduated at rates between 65% and 69%. Students who missed up to 10 days graduated at a rate of 40%. When students missed up to 20 days, the graduation rate

dramatically dropped to 24%. In a study conducted by the Consortium on Chicago School Research, both grades and attendance were found to be significant predictors of high school graduation. The report also argued that a student's freshman year was the determining factor for success, even for struggling learners in middle school. The study found that freshmen students who finished their first year of high school with a B average or better had an 80% chance of graduating. Although grades were found to be significant predictors of completion of high school, attendance was eight times more predictive than grades, regardless of what grades the student had ("Freshman Grades, Attendance Striking Predictors of Later Graduating in Chicago High School Students," 2007).

Interestingly, studies have found that both grades and attendance were higher in schools where students felt their teachers cared about them. Schools that held high expectations and produced a connection between school and life after school also reported higher attendance and higher grades ("Freshman Grades, Attendance Striking Predictors of Later Graduating in Chicago High School Students," 2007). These findings are consistent with studies that indicate the relationship between a student and his/her teachers can positively or negatively influence whether or not the student stays in school (Silver et al., 2008). Students who believe their teachers care about them are more likely to complete high school. Since such supportive relationships may be easier to develop in smaller schools it is not surprising that a study conducted by the Bill and Melinda Gates Foundation (Evan et al., 2006) concluded that smaller schools had more positive teacher/students relationships and an increased graduation rate.

In the area of academic courses, research suggests that, Algebra I can be the highest predictor of graduation rates (Orihuela, 2006). In Mississippi, Algebra I is a required credit for graduation. Students who pass Algebra I in the ninth grade are two times more likely to graduate after 4 years of high school. Orihuela used a logistical regression to compare passing rates in Algebra I of high school graduates and high school dropouts. The results support that passing Algebra can be used as a prediction of graduation. In this study, students who were not successful in Algebra I were four times more likely to drop out than other students (Orihuela, 2006).

Failing one or more grade levels has been studied as a predictor of failure to complete high school. Also, the age of the student when he or she failed a grade has been studied as a factor. For instance, students who failed their ninth grade year had a 50/50 chance of completing the next grade. Students who failed the sixth or seventh grade seemed less affected and were more likely to complete the next grade. Also, students who were considered "over age" had a graduation rate of only 29%, possibly because the older a student becomes, the more responsibilities he or she may incur outside of school (Silver et al., 2008).

Socioeconomic status has been associated with graduation and dropout rates. The Alliance for Excellent Education indicated that students coming from families in the top 25% of family income had a better chance of graduating than students who come from families of lesser income. A finding of this study was that students from wealthy families were seven times more likely to graduate high school than students in poverty.

Teachers' salaries were discovered to influence graduation rates. In a study conducted at Teachers College, researchers estimated that increasing the teacher salary by 10% would yield 10 more graduates for every 100 students. One reason may be that higher teacher salaries can attract more applicants. When adminstrators have more applicants, they are more likely to find candidates who are best qualified to meet the needs of their students and who best fit within the culture of the school (Teachers College Report, 2006).

Further studies indicate that students who had access to qualified teachers graduated at 12 percentage points higher than students who attended class taught by teachers who were not highly qualified. A group of not highly qualified teachers causes a problem within the school. The problem leads to a high turnover rate and weakening of professional development (Shields et al., 1999, as cited in Silver et al., 2008).

Other predictors of graduation have included: Gender; Males graduate at 12 percentage points lower than girls, across all races, socioeconomic status, and achievement levels (Silver et al., 2008). Standardized test scores; only half of the students who score below the 50th percentile will make it to graduation (Silver et al., 2008).

Leadership Styles

According to Bell, Bolam, and Cabillo (2002), school leaders can impact students' achievement. Whether a principal wants to or not, he or she is going to have an influence on the students in the school building. In a report by the Department of Education and Employment in 1998 (as cited in Rutherford, 2005), it was determined that an effective leader constructs an environment of purpose for the students, sets high expectations for students and teachers, gives teachers the tools necessary to improve instruction and learning, and observes the performance of the students.

A study conducted by Rutherford (2005) revealed that the leadership of a school made a difference in student achievement. The study consisted of several under-performing schools. Each of these schools had a change of leadership and, subsequently experienced improvements. For example, students in one school were demonstrating poor academic performance; school discipline was a problem; and standards were set very low. Once the new leader implemented new discipline policies and rewarded positive behavior instead of dealing with negative behavior the school began to make changes. The students began to increase their level of academic achievement and behavior improved. In another school it was noted that the standard of learning was set very low. Although there was rarely a discipline problem, students were not engaged in the learning process. A new leader stepped in and raised the bar of expectations. New standards were set for learning and student engagement in the classroom. After a few short years, this school went from being under-performing to being known as one of the best schools in the city regarding student achievement. Rutherford (2005) concluded that effective school leadership was the determining factor for the improvements and that leadership made a much greater difference than previous research has suggested.

In a study conducted by Education Trust, three schools with high performance indicators were analyzed to explore characteristics that made the schools successful. Each school served minority students and students living in poverty and had higher than normal achievement scores, small achievement gaps, and high graduation rates (The Power to Change, 2005). The first school was characterized as a large school serving over 2,000 students, most of whom were minorities and from poor families. Surprisingly, the school had a 100% graduation rate. The principals credited this accomplishment to exceptional teaching and a focus on instruction. The teachers credited the supervision and classroom observations they were subjected to seven times a year until tenured. Once tenured, teachers took on supervision roles, observing and evaluating their colleagues. Instruction was systematically supervised, evaluated and improved. Another component attributed to the school's success was that administrators scheduled time for teachers to plan together. Administrator's also expressed a belief that individuals rise to expectations (The Power to Change, 2005, p. 9).

Another school in the study was small, serving 208 students and employing only 12 teachers and a principal. A large percentage of its students enter the school far below an appropriate reading level, and 70% of the students qualified for free lunch. The administrator credited the success of the school to the passion of the teachers. The faculty credited the success of the school to the relationships that have been built. With such a small number of students at the school, teachers and students all knew each other. The success of the school also had a clear focus on the basics, reading, English, math, science, and a history, which students were required to take each year. Very few electives were offered. The school-wide focus on reading was also evident with everyone spends time each day reading, even the teachers (The Power to Change, 2005).

The last school in the study was located in a community made up mostly of migrant workers who work in the agricultural field. Most of the students live in very primitive conditions and most of the students (86%) qualified for free lunch. The principal is a former resident of the area who came back to the community to ensure that the students succeed. The success of the school was attributed to high expectations, pairing each child to a specific teacher, creating a focus on reading, and providing students who have failed additional opportunities (The Power to Change, 2005). In each school, the leader influenced the schools' culture, schedule, focus on instruction and/or made other decisions that were attributed to the school's success.

Description of the sample

A total of 100 public schools in Mississippi were included in the analysis of the first set of variables. Because district level data were used, high schools in districts with more than one high school were excluded. The sample of schools included a variety of graduation rates. Schools were located throughout the state, representing different regions across Mississippi. The schools included in the study had a mean graduation rate of 73.4%, which is comparable to the overall mean graduation rate for the state (74%). The sample included about 35% of all high schools in Mississippi (N = 282).

A smaller sample was used to study principal leadership style. A total of 18 schools participated in the analysis of leadership as measured by the Multifactor Leadership Questionnaire Rater Form (5X Short).

Variables

Study variables were defined and collected in the following ways. Data were obtained online from the Mississippi Department of Education in 2008 through the Mississippi Assessment and Accountability Reporting System. This included attendance, Algebra I scores, teacher salary, socio economic status, MCT scores, teachers with advanced degrees, Adequate Yearly Progress (AYP), and school size. Attendance was reported as the average percentage of students who attend school each day. Algebra I scores were measured using the average score for the Algebra I Subject Area Test. Teacher salary was reported as the mean salary of teachers for each school district. Socioeconomic status was measured by the percentage of students who qualified for free and reduced lunch. MCT scores were reported for 8th Math and 8th grade Language Arts mean scores from the Mississippi Curriculum Tests. Percentage of teachers with advanced degrees was measured as the percentage of teachers with a professional degree beyond a bachelor's degree. Adequate Yearly Progress (AYP) was reported as: a) did not meet Adequate Yearly Progress, b) met Adequate Yearly Progress, or c) exceeded Adequate Yearly Progress. School size was reported as 1A-5A, which represented the classification assigned to schools through the Mississippi High School Athletic Association. The graduation rate for each school was reported as the district's reported graduation rate for the 2007-2008 school year.

Data for principal leadership style was determined from teacher responses to the Multifactor Leadership Questionnaire (MLQ) 5x Short Form.

Instrument

The 45 item Multifactor Leadership Questionnaire (MLQ) 5x Short form (Avolio & Bass, 1985-2004) was used in this study. Consisting of 45 items the instrument is designed to measure three leadership factors which include *transformational, transactional*, and *laissez-faire* styles, each of which was used for this research project. Teachers were asked to indicate their principal's leadership style by rating statements on a scale of 0-4.

Bernard Bass originally tested the results of the Multifactor Leadership Questionnaire on 198 Army officers. Factor analysis revealed six factors which included Charismatic/Inspirational, Intellectual Stimulation, Individualized Consideration, Contingent Reward, Management by Exception and non-leadership. Bass later suggested that Management by Exception should be spilt into two factors: Active and Passive (Avolio, Bass, & Jung, 1999). The short form Multifactor Leadership Questionnaire (form 5X), which was revised in 2004 (Avolio & Bass, 1985-2004) has higher reliability and validity than the original Multifactor Leadership Questionnaire (Avolio et al., 1999).

Procedures

Data for all variables were collected by the researcher from August 2008 to April 2009. The researcher gathered archival data from the Mississippi State Department of Education Office of Research and Statistics in order to test Hypotheses 1 through 6.

Districts with a single high school were identified from the Mississippi State Department of Education website. An email was sent to each principal asking permission to conduct the study and permission to ask the high school librarian to distribute questionnaires. High school librarians of participating schools served as liaisons for the researcher and were sent a packet including a letter explaining the purpose of the study, directions for distribution and return of questionnaires and five MLQs. Librarians were asked to distribute questionnaires and stamped, self-addressed return envelops to five teachers in their school. The contact information of the researcher was provided should participants have questions.

Due to a low response rate, the researcher made follow-up phone calls to principals in an effort to solicit a greater response. Email addresses and phone numbers were available from the Mississippi State Department of Education website.

Confidentiality and anonymity of the respondents were maintained. Although teachers were asked to not add any identifying information to the questionnaire, each questionnaire was coded in numerical, alphabetic order by school district for the purpose of matching the questionnaire to the corresponding school districts.

The researcher scored the Multifactor Leadership Questionnaire (5X Short) using a scoring guide ordered from the authors of the survey. However, data were described using descriptive statistics. After analysis was conducted, the questionnaires were destroyed. The scores of all returned surveys for each school were averaged to obtain one leadership style for each school's principal. (The variable was treated as a categorical variable.) The resulting scores provided one of the following leadership styles:

1. Transformational - consists of the following three components: a) Charisma/Inspirational, b) Intellectual Stimulation, and c) Individualized Consideration.

2. Transactional - consists of the following three components: a) Contingent Rewards, b) Active Management by Exception, and c) Passive Management by Exception.

3. Laissez-Faire – defined as a non-leadership component

All other data used in this study were collected from the Mississippi Department of Education.

Data analysis

All data were entered and analyzed in SPSS version 16. Multiple regression was used to test hypotheses 1-6. Analysis utilized simultaneous regression. Assumptions and diagnostics were tested in order to determine if the data were normal. Missing data were left as missing. Outliers were examined on a case-by-case basis by sorting each variable in ascending and descending order. Analysis of variance could not be used for data collected from the MLQ due to a low response rate and small group size. Descriptive and frequency analyses were run.

Results

The coefficients table determined that two variables were significant: average daily attendance and the percentage of teachers with advanced degrees. Predictor variable average daily attendance was found to be significant at $p = .01$. Predictor variable percentage of teachers with advanced degrees was found to be significant at $p = .02$ (Table 4).

Hypotheses

Hypothesis 1 was supported; average daily attendance has a significant positive relationship with high school graduation rate in the state of Mississippi. The higher a school's average daily attendance, the higher a high school's graduation rate.

Hypothesis 6 was supported; the percentage of teachers with advanced degrees had a significant positive relationship with high school graduation to be in the state of Mississippi. The more teachers with advanced degrees, the higher the high school's graduation rate. Average daily attendance had the greatest impact of the two variables. Algebra I scores and math MCT scores were approaching significance.

Hypotheses 2 through 5 and 7 and 8 were rejected. For Hypothesis 2, algebra I scores had no relationship with high school graduation rate in the state of Mississippi. For Hypothesis 3, teacher salary had no positive relationship with high school graduation rate in the state of Mississippi. For Hypothesis 4, socioeconomic status had no significant negative relationship with high school graduation rate in the

state of Mississippi. For Hypothesis 5, eighth grade standardized test scores had no significant positive relationship with high school graduation rate in the state of Mississippi. For Hypothesis 7, Adequate Yearly Progress had no significant relationship with high school graduation rate in the state of Mississippi. For Hypothesis 8, school size did not have a significant negative relationship with high school graduation rate in the state of Mississippi.

Table I. Significance Levels for Variables

	Mean	Std Deviation	Significance
Graduation Rate	72.99%	9.24	
Algebra I Scores	651.40	5.28	.18
Percent of Teachers with Advanced Degrees	36.09%	8.84	.02
Percentage of Students Eligible for Free/Reduced Lunch	74.97%	17.62	.31
Average Daily Attendance	95.03%	3.05	.01
Math MCT Scores[1]	147.57	4.93	
Language MCT Scores	145.86	3.90	.96
Average Annual Salary	$40,450.00	$2,470.00	.53
School size 1A			.11
School size 2A			.58
School size 3A			.12
School size 4A			.20

[1]MCT Math Scores were removed from the Model

Principal leadership styles

Of the 100 schools included in the sample, there were 18 schools that returned the Multifactor Leadership Questionnaire Rater Form (5X Short). The scores on the Multifactor Leadership Questionnaire Rater Form (5X Short) were averaged in order to obtain one score for each school. Results indicated that 13 of the 18 schools had a principal who was scored as a Transformational Leader. Sub-scores for the Transformational Leaders were calculated for further investigation.

Sub-scores indicated that all Transformational Leaders were an Inspirational Leader. Those 13 schools had an average graduation rate of 76.25%. There were two schools that reported having a Transactional Leader. Sub-scores indicated that one school had a Contingent Reward Leader and one school had a Passive Management by Exception Leader. The average graduation rate of schools that had a Transactional Leader was 74%. Three schools were reported as having a Laissez-Faire Leader. The average graduation rate of schools that had a Laissez-Faire Leader was 82.8%.

Assumptions

The assumption of homoscedasticity was met. After graphing unstandardized predicted values and unstandardized residuals, variance was evenly distributed across the graph. Normality of residuals was analyzed by calculating a pseudo *z* with unstandardized residuals. The calculation for skewness was -1.3. The calculation for kurtosis was .1. The assumption of skewness and kurtosis was met.

Tolerance levels suggested collinearity was present for math scores. Because math scores showed a negative relationship, which was not consistent with the literature, math scores were removed from the model. Removal of this variable eliminated any negative coefficients.

Conclusions

A significant positive relationship existed between a high school's average daily attendance and high school graduation rate in the state of Mississippi. This significance suggests that graduate rates can be positively impacted when school attendance is high. An implication of this finding is that school leaders should focus efforts on understanding the cause of student absenteeism and identifying strategies to increase attendance. Because a significant relationship also existed between the school's percentage of teachers with advanced degrees and high school graduation rate in the state of Mississippi, there is a strong implication for school leaders to consider hiring, recruitment and retention policies and practices that increase the number of teachers with advanced degrees within their schools.

Algebra I scores, teacher salary, socioeconomic status, eighth grade standardized test scores, Adequate Yearly Progress, and school size had no significant relationship with high school graduation rate in the state of Mississippi.

Discussion

This study sought to find relationships that existed between graduation rates and other predictors. To that end, the study found average daily attendance and the percent of teachers with advanced degrees to be significant predictors of high school graduation rates. Finding that average daily attendance results in a higher chance for a student to graduate high school is not surprising considering that students who attend likely benefit more from being in the classroom learning and studying rather than away from school. Also, attending on a regular basis may be strengthening a sense of belonging and reinforcing positive attitudes and behaviors such as perseverance and good work habits that in turn contribute to school success. Although these residual effects were not tested in this study, they are certainly worthy of speculation and further study. The implication is that school leaders should focus efforts on understanding the cause of student absenteeism and identifying strategies to increase attendance.

The percentage of teachers with advanced degrees was also significant and suggests that schools with a higher percentage of teachers with a master's degree or above will have higher graduation rates. It can be assumed that teachers with advanced degrees have advanced levels of education and knowledge about teaching and learning and, therefore, the quality of instruction may be greater. However, it may also be that schools with higher percentages of teachers with advanced degrees have a different school culture and that this culture is the factor that produces higher graduation rates. Either way, there is a strong implication that schools that hire, encourage, retain or otherwise acquire high percentages of teachers with advanced degrees can realize higher graduation rates. Therefore, school leaders should consider hiring, recruitment and retention policies and practices that increase the number of teachers with advanced degrees within their schools.

Because of the positive link between attendance and high school graduation rates, the researchers recommend that school leaders focus efforts on increasing the average daily attendance in their high school. School leaders should encourage attendance through incentive programs that would persuade students to attend school and through identifying and remedying causes of student absenteeism. Information should also be provided to students, parents and teachers on the benefits of good attendance including the increased likelihood of graduating.

School leaders are also encouraged to develop appropriate attendance polices. Teachers should reinforce these policies and should be encouraged to promote strategies to increase attendance in their classrooms including incentive programs and providing meaningful learning opportunities that encourage students to come to class. Students with attendance problems should be identified early and possibly referred for support and intervention services.

Since the results of this study indicated that school districts employing higher percentages of teachers with advanced degrees have higher graduation rates, school leaders should identify hiring and retention practices accordingly. Teachers with advanced degrees should be given consideration in hiring. Also, teachers in the school should be encouraged and supported to pursue educational opportunities. For instance, incentives could be provided for teachers through supplements to offset tuition costs or offering competitive salary schedules that substantially reward teachers for advanced degrees. Also, school leaders can provide release time or otherwise accommodate a teacher's work schedule to allow time to attend classes. School leaders may also consider partnering with a university to accommodate groups of teachers. University personnel can assist in identifying grants/scholarships and may be willing to offer classes that accommodate teachers' work schedules. Although more research is needed, the findings of this study do provide evidence that graduation rates can be predicted, and therefore, affected by at least two factors: attendance and percent of teachers with advanced degrees. This should be encouraging for school leaders seeking to improve their schools graduation rates since both factors can be influenced by the policies and practices within a school.

Limitations

This study had the following limitations:

1. Data collection of the Multifactor Leadership Questionnaire was limited to the teacher's perception of the principal's leadership style, not the observed or self-reported leadership style of the principal.

2. The sample size of the principal leadership style was small due to the low response rate of the Multifactor Leadership Questionnaire (5X Short).

3. The sample was limited to school districts that included only one high school due to the limitations of the reporting system of the Mississippi Department of Education, which reported graduation rates by district.

Recommendations for future research

Based on results from this study, several recommendations for future research arise:

1. Replicate the study gaining responses from all principals in the state of Mississippi. In this study, the response rate of the Multifactor Leadership Questionnaire (5X Short) was 18%. It is recommended that leadership styles of principals be identified for all high schools in the state of Mississippi and the study be replicated.

2. Socioeconomic status was found not to be a factor in graduation rates. Because of the homogenity of schools in this study, further studies need to be conducted comparing schools with different socioeconomic profiles.

3. This research did not find any significant differences in graduation rates and Algebra I scores, eighth grade standardized test scores, and school size. Since previous studies suggested that all of these variables positively affected graduation rates, further studies should continue to investigate these connections.

4. It is recommended that graduation rates be identified for all high schools in the state of Mississippi in order for analysis to be conducted on each high school, not just those in single-high school districts.

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QUESTIONS THAT PROVIDE ANSWERS: SCHOOL IMPROVEMENT SIMPLIFIED

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ABSTRACT

This document provides school principals a streamlined approach to improving their schools. Research supports the notion that the principalship is a key leverage point for school improvement. Through the use of the important, research-based questions presented in this document, school principals can develop a strategy leading to higher performing schools and improved student achievement. These key questions can serve as the basis for ongoing, authentic conversations about the school, and the answers that emerge can launch the strategies for school-wide change. Research has produced seven broad domains that are important to school-improvement efforts: (a) culture of common beliefs and values, (b) curriculum management, (c) instructional practices, (d) school effectiveness, (e) student and parent support, (f) systemic, continuous improvement, and (g) 21st-century teaching and learning. Each domain has various dimensions from which key points can be drawn. These dimensions form the important questions that can lead to serious self-reflection and, if constructively acted upon, to self-improvement in the school setting. This document contains the specific questions related to each domain in the realm of school improvement. After each set of questions, there is a brief synopsis of the opinions of the researchers from whose work the questions were drawn. Taken as a whole, the questions and the process of using them in a school setting can be a powerful force for constructive change.

Introduction

School improvement could be a matter of simply asking good questions. This document presents the key questions on which school principals should focus in order to increase student achievement and create better working conditions for faculty and staff. Careful reflection on the questions by everyone involved with the school, along with thoughtful, constructive answers and a willingness to take action accordingly can lead to higher school and student performance. A lack of focus on the important questions can lead to stagnation and increased numbers of struggling students, frustrated educators, and impaired schools.

Fullan (2003) writes that it has become clear over the past decade the country needs large-scale, sustainable reform and improvement in education. Yet others claim that the institution in which we place our greatest hopes for children's futures is often stuck in tradition and industrial-era thinking (Daggett, 2005). Senge (2000) explains that children are immersed in a media environment of things that were unheard of 150 years ago, and yet the schools they attend now versus those of 150 years ago are more similar than dissimilar.

There are calls for improvement on all fronts, and the principal has become the main educational facilitator of the learning community (Wilmore, 2002). Although the path is not clear, there can be little doubt that the leadership abilities of the school principal can be used as a powerful force for improving schools (Fullan, 2003). There are virtually no documented instances of troubled schools being turned around in the absence of intervention by talented leaders (Leithwood, Seashore Louis, Anderson, & Wahlstrom, 2004).

Successful transformation of the education system rests heavily on the shoulders of the school leader. What the school principal knows and does become critical to school improvement and student success (Waters, Marzano, & McNulty, 2003). The job of the principal, however, is not an easy one. There is no hotter seat in all of education than the principal's, nor one more closely examined by professional researchers (Troen & Boles, 2003). Principals need strategies for transforming the system. The set of questions provided here is intended for use by principals as a guide for navigating through the murky waters of 21st-century demands.

Focus Areas Related to School Improvement

Research on high-performing school systems and successful practice supports the idea of seven focus areas that serve as anchors for successful school improvement efforts. These domains are: (a) culture of common beliefs and values, (b) curriculum management, (c) instructional practices, (d) school effectiveness, (e) student and parent support, (f) systemic, continuous improvement, and (g) 21st-century teaching and learning (West Virginia Department of Education, 2004).

Each domain has various dimensions from which key points can be drawn. These dimensions form the important questions that can lead to serious self-reflection and, thus, to self-improvement in the school setting. The important questions, along with the research-based foundation for each domain, follow.

Domain 1: Culture of Common Beliefs and Values Dedicated to Learning for All
Important questions:

1. Do you believe that all children can achieve mastery of the essential curriculum, given appropriate time and conditions?
2. Do you believe that everyone involved with your school has an important role in creating the conditions necessary for all students to achieve?
3. Do you believe that everyone at your school sets high standards in all aspects that are essential for all students to achieve?
4. Do you believe that it is essential that the school principal provides strong instructional leadership in order to achieve mastery for all students?

5. Do you believe that highly qualified personnel are necessary to develop the culture to achieve mastery for all students?
6. Do you believe it is essential to treat parents as valued partners in order for all students to achieve mastery?
7. Do you believe the primary measure of school success is the number of students who achieve mastery of the essential curriculum?
8. Do you believe there must be a school-wide, continuous-improvement process in place in order for all students to achieve?

Supporting opinions. "The way we do things around here" is how Barth (2002, p. 6) defines a school's culture, and he writes that the nature of the culture "wields astonishing power in shaping what people think and how they act." The school culture can be the defining element in reaching the goal of bringing all students to mastery or beyond in core subjects (Barth).

Every school has a culture, and the culture can be either hospitable or toxic, working either for or against improvement and reform. Changing a toxic school culture into a healthy school culture that inspires lifelong learning among students and adults is what Barth calls the greatest, but most important, challenge of instructional leadership (Barth, 2000).

A strong school leader can influence others' beliefs, and one's beliefs often control one's behavior. A school culture is built around a set of beliefs. It is made up of basic, unspoken assumptions about how the world is and ought to be that is shared by a set of people. It determines their perceptions, thoughts, feelings, and, to some degree, their behavior.

Leadership and culture are intertwined. It is nearly impossible to sufficiently address one without the other. These dynamic processes of culture creation and management are the essence of leadership (Schein, 1992). One, alone, cannot change the culture of a school, but one can provide forms of leadership that invite others to join in as observers of the old and architects and designers of the new (Barth, 2000). Changing a school's culture, however, is not always easy.

Cultural change may be especially difficult in organizations in which stakeholders use the word "culture" to block initiatives, stifle innovation, and maintain the status quo (Reeves, 2007). It is only after an organization's deep, basic assumptions are learned, shared, reinforced, tested, and successfully repeated over time and tried under crisis conditions that a paradigm forms. An organization's paradigm, like a pair of strong prescription glasses, impacts the way members perceive and interact with the world around it. Finally it is then that paradigm and cultural components become predictable, patterned, and strategically manageable (Schein, 1992). Once a strong, supportive, and constructive culture exists in the learning community of a school, the strengthening of the curriculum may proceed.

Domain 2: Curriculum Management

Important questions:

1. Has the principal provided the means for the teachers to develop a rigorous curriculum aligned with the standard learning objectives?
2. Has the principal provided the means for the teachers to prioritize and map curriculum objectives?
3. Do all the teachers in the school use performance benchmarks to measure student achievement?
4. Do all the teachers in the school use formative assessments that align with school, district, and state performance benchmarks?
5. Is my school using a standards-based program to assure that students are proficient in reading?
6. Is my school using a standards-based program to assure that students are proficient in mathematics?
7. Has the principal implemented a teacher-support system for enhancing curriculum quality, such as peer-unit development, technology support, and content-specific professional development?
8. Is there a process in place in the school to monitor the curriculum in order to gather information for improvement?

Supporting opinions. The costs—social, environmental, and moral—of not restructuring today's school curriculum are "unacceptably great." School leaders must look outside the textbooks and walls to determine the curriculum students need. Life in the 21st century is complex and nebulous, and not easy to define. It is an "inconvenient" curriculum that must address real-world issues (Ford & Friederici, 2007).

For decades researchers have debated what it is students should know. Dewey (1937) wrote that education must be a continuing reconstruction of experience. It should be built along the same constructive lines as those that brought civilization into being. It should be determined by life itself. Life today, however, is shaped by many complex issues, such as energy needs and costs, the role of religion in world affairs, the needs of changing populations for food and water, and the interaction between economic development and the natural environment. It is critical that tomorrow's decision makers understand that no single discipline has the tools to provide all the answers to such problems (Ford & Friederici, 2007).

Rather than holding students accountable to minimum acceptable levels of competency, the national standards-based reform movement that emerged in the 1990s called for high standards for all students oriented around challenging subject matter, acquisition of higher-order thinking skills, and the application of abstract knowledge to solving real-world problems (McLaughlin, 1995). Perhaps more important, however, is that standards-based reform has a process-driven conception of educational change that clearly links schooling and policy to what students should know in given subject areas (O'Day & Smith, 1993).

National education leaders have strongly advocated the standards-based curriculum, and states have rapidly adapted the standards-based approach. Four policy drivers emerged as a result of this initiative:

(a) Content standards—detailed statements of the high-quality academic material students should learn; (b) Performance standards—established levels of mastery students should be able to demonstrate; (c) Aligned assessments—the statewide testing of students to measure their levels of performance on the specified content; and (d) Professional standards—training and certification requirements to ensure that teachers are sufficiently skilled as both pedagogists and subject-matter specialists (Swanson & Stevenson, 2002).

Having a coherent, standards-based curriculum means having every goal in an accountability system clearly specified and measured without added irrelevance and that there are essential standards that are the basis for the curriculum. Standards-based reform has become the driving force behind most federal, state, and local education policies in the United States today. At the heart of a standards-based curriculum lie academic content standards, specifying what students should know at each grade level and, by extension, what should be taught. From these content standards emerges a framework, or blueprint, for schools to use to implement the state-adopted content standards. These standards and this framework should guide all classroom instruction (Cash, 2007).

Schools that implement a coherent, standards-based curriculum have five key behaviors in common. They do the following: (a) Align the written, taught, and tested curriculum; (b) Get student academic data to teachers in a format they understand and give them frequent opportunities to talk about it; (c) Provide high-quality professional development to build the capacity of teachers and leaders; (d) Intervene on behalf of students who don't get it; and (e) Have rock-solid leadership (Cash, 2007). This kind of leadership calls for a clear notion of high-quality, 21st-century, instructional practices.

Domain 3: Instructional Practices

Important questions:

1. Do the teachers in my school show respect for all students regardless of individual differences?
2. Is the climate of the classrooms focused, productive, and well organized?
3. Are the students in my school being developed into self-directed learners who are responsible for improving their own work?
4. Do the teachers in my school use differentiated instruction to meet the needs of varied learners?
5. Do the teachers in my school use research-based, high-yield instructional strategies in all classrooms?
6. Do the teachers in my school use performance assessments to determine the level of student mastery?
7. Do the teachers in my school adjust instructional time by grade, class, and subject to meet the various learning needs of students?
8. Are writing-to-inform strategies used in all classrooms in my school in all content areas?
9. Are reading comprehension-development strategies used in all classrooms in my school in all content areas?

10. Do the teachers in my school use such practices as scaffolding and previewing to help accelerate student achievement?
11. Is there a teacher instructional-support system in my school that provides time and assistance to teachers for data analysis, cooperative planning, observation and feedback, reflective practice, and professional growth?

Supporting opinions. Teacher quality matters. In many cases, it is the most important school-related factor influencing student achievement (Rice, 2003). Good teachers cannot function optimally unless they work in supportive environments. It is the responsibility of the school leader to create the framework for the use of high-yield instructional strategies. At the heart of school capacity are principals focused on the development of teachers' knowledge and skills, professional community, program coherence, and technical resources (Fullan, 2002).

There are several well-developed models of instructional leadership that specify particular practices and evidence of the impact on both organizations and students. For instance, the model developed by Hallinger (2000) consists of three sets of instructional leadership dimensions: (a) defining the school's mission, (b) managing the instructional program, and (c) promoting a positive learning climate. The instructional leader of a school must be a learning-centered leader.

A learning-centered school leader puts curriculum and instruction first. He understands what students should be learning, how they learn best, and how to assess their performance. He must also develop the capacity of teachers to use proven instructional methods. Learning-centered leaders know how to create a professional environment where all the adults in the school are constantly improving their own skills and knowledge, as well as helping and challenging each other to serve the particular needs of every learner (Spence, 2007). The school leader who understands all facets of the pedagogical arts will understand the importance of the correlates of effective schools.

Domain 4: School Effectiveness

Important questions:

1. Is there a culture of support, trust, and collaboration between our school and the central office focused on creating conditions for all students' success?
2. Has our school developed a clear mission to provide focus to school-improvement efforts?
3. Does our school have a set of core beliefs to provide focus to school-improvement efforts?
4. Has our school set performance goals to provide focus to school-improvement efforts?
5. Does our school have a strategic plan to provide focus to school-improvement efforts?
6. Have our school-improvement team members had professional development training on strategic planning?
7. Have our school-improvement team members had professional development training on continuous improvement?

8. Have our school-improvement team members had professional development training on the correlates of effective schools?
9. Do our school-improvement team members have time to collaborate, develop, and annually revise the five-year strategic plan?
10. Does our school have a data-management system to analyze data trends and establish priorities?
11. Does our school have a professional learning community focused on strategies to achieve school performance goals?
12. Are teachers in our school provided professional development training aligned with the school's improvement plan?
13. Does our school district have a monitoring system that requires continuous progress and accountability for results as outlined in the school and district plan?
14. Are our teachers provided times prior to and during the instructional term for meaningful staff planning, collaboration, and problem solving related to the school's performance goals?
15. Does our central office have a school monitoring system to gather information on quality of overall school operations and the presence of the correlates of effective schools?

Supporting opinions. The 1966 Coleman Report claimed that family factors were greater predictors of student achievement than the school, regardless of the methods of instruction. This set off a vigorous reaction and induced a number of studies that became the basis for the Effective Schools Movement. This body of research supported the premise that all children can learn to some degree, regardless of family background, and that the school controls the factors necessary to assure student mastery of the core curriculum.

The first generation of effective-schools correlates focused on children from different socioeconomic classes. As educators became concerned about other subsets of the population, the areas of gender, ethnicity, disabilities, and family structure were added to the research. The first generation of research also focused on mastery of the essential curriculum, which included reading and math (Lezotte, 2001).

Over time, other curricular outcomes, such as problem-solving ability, higher-order thinking skills, creativity, and communicative ability were added. Since the original research, the correlates have been refined and expanded to: (a) instructional leadership, (b) clear and focused mission, (c) safe and orderly environment, (d) frequent monitoring of student progress, (e) positive home-school relations, and (f) opportunity to learn and student time on task (Lezotte, 2001).

The early Effective Schools Movement emphasized the individual school as the unit of change. Eventually, it became clear that school improvement resulting in increased student achievement could only be sustained with strong district support (Lezotte, 2001). In the societal context of the 21st-century, one of the original correlates, positive home-school relations, has taken on an added importance.

Domain 5: Student and Parent Support

Important questions:

1. Does our school use research-based, innovative approaches to meeting the specific academic and social/emotional needs of all learners?
2. Does our school have a developmental guidance program that includes a strong character education focus?
3. Does our school have a developmental guidance program that includes a career development focus?
4. Does our school have an effective process for successfully transitioning students from one school to the next?
5. Does our school have a coordinated and proactive plan to enhance parent involvement?
6. Does our school have a coordinated and proactive plan to improve parent communication?
7. Does our school have a coordinated and proactive plan to support parent education?
8. Does our school have a coordinated and proactive plan to build a partnership with parents of low-performing students?
9. Does our school have a process for connecting students and families to community agencies, health services, counseling, and other services that promote student success?
10. Does our school have a data analysis process on student attendance, discipline trends, grade distribution, participation in extracurricular activities, etc., for monitoring student success and targeting specific interventions?

Supporting opinions. The evidence is consistent, positive, and convincing that families have a major influence on their children's achievement in school and through life, according to Henderson & Mapp (2002). These researchers conducted a meta-analysis of 51 studies, which they claim document the profound and comprehensive benefits for students, families, and schools when parents and family members become participants in their children's education and their lives.

They conclude that when schools, families, and community groups work together to support learning, children tend to do better in school, stay in school longer, and like school more. They also drew specific conclusions in the areas of student achievement, student behavior, culture, age, and school quality.

Student achievement. Programs that engage families in supporting their children's learning at home are linked to higher student achievement. When parents are involved, students achieve more, regardless of socioeconomic status, ethnic or racial background, or the parents' educational level. When parents are involved in their students' education, those students have higher grades and test scores, better attendance, and complete homework more consistently. Students whose parents are involved in their lives have higher graduation rates and greater enrollment rates in postsecondary education. In programs that are designed to involve parents in full partnerships, student achievement for disadvantaged children not only improves; it can reach levels that are standard for middle-class children (Henderson & Mapp, 2002).

The opposite has also shown to be true. Students are more likely to fall behind in academic performance if their parents do not participate in school events, develop a working relationship with their child's educators, or keep up with what is happening in their child's school (Henderson & Berla, 2004).

Student Behavior. When parents are involved, students exhibit more positive attitudes and behavior. When students report feeling support from both home and school, they have more self-confidence, feel school is more important, and they tend to do better in school. Student behaviors such as alcohol use, violence, and other antisocial behaviors decrease as parent involvement increases (Henderson & Mapp, 2002).

School Culture. Children from diverse cultural backgrounds tend to do better when parents and professionals collaborate to bridge the gap between the culture at home and the culture at school. The school's practices to inform and involve parents are stronger determinants of whether inner-city parents will be involved with their children's education than are parent education, family size, marital status, and even student grade level (Henderson & Mapp, 2002).

Successful schools are those that succeed in engaging families from very diverse backgrounds focus on building trusting collaborative relationships among teachers, families, and community members; recognize, respect, and address families' needs, as well as class and cultural differences; and embrace a philosophy of partnership where power and responsibility are shared. For low-income families, however, programs offered in the community, at church, or those that include home visits are more successful in involving parents than programs that require parents to visit the school. When these parents do become involved at school, their children make even greater gains (Henderson & Mapp, 2002).

Age. The benefits of involving parents are not confined to the early years; there are significant gains at all ages and grade levels. Junior- and senior-high-school students whose parents remain involved are able to make better transitions, maintain the quality of their work, and develop realistic plans for their futures. Students whose parents are not involved, on the other hand, are more likely to drop out of school (Henderson & Mapp, 2002).

School Quality. Schools that have parent-teacher groups have higher student achievement than schools that do not. Schools that work well with families have improved teacher morale and higher ratings of teachers by parents. When parents and community members organize to hold poorly performing schools accountable, school districts make positive changes in policy and practice that lead to upgraded school facilities, improved school leadership and staffing, new resources for programs to improve teaching and curriculum, and funding for after-school and family-support programs. Schools in which parents are involved have more support from families and better reputations in the community. Schools with highly rated parent partnership programs make greater gains on state tests than schools with lower rated programs (Henderson & Mapp, 2002).

Regardless of the framework used to make parent and family involvement in schools a reality, it is the principal who plays the pivotal role. Teachers and other staff sense the level of priority administrators give to involving parents. The climate in a school is created, to a large extent, by the tone set in the principal's office. If principals collaborate with parents, teachers will be more likely to follow suit.

Strong leadership is not only a key component of genuine progress in building constructive family-school partnerships; it is a key component of genuine change throughout the system. Schools with principals not committed to improvement by challenging the existing system are doomed to become stagnant, and growth will become marginalized. The school principal is a vital component in systemic, continuous improvement.

Domain 6: Systemic, Continuous-Improvement Process
Important questions:

1. Does the principal of our school use a transformational leadership approach to create a learning-centered school?
2. Is there an expectation in my school that change will be an ongoing, continuous process?
3. Is there a broad understanding and commitment to the need for change in my school?
4. Is there a focus on the whole school in the design and implementation of our school's programs?
5. Do personnel in our school understand that change involves system activities and resources that are connected?
6. Before we implement a program in our school, do we first plan it, then implement it, study it to evaluate its effects, and finally act based on our evaluation?

Supporting opinions. The many steps and tasks involved in diffusing innovations through systemic change call for a high degree of commitment and relentless effort. Moreover, time frames for accomplishing institutional changes must be realistic. Major systemic changes are not easily accomplished (Adelman & Taylor, 2003). Schools are open systems, acutely dependent on their external environment, making awareness of the myriad political and bureaucratic difficulties involved a necessity.

Learning-centered principals are the catalysts in school-based efforts at continuous improvement. They understand and communicate that complacency is the enemy of improvement, that the status quo is more tightly linked to decline than to growth. These leaders confront stagnation. They ensure that the school systematically reviews and adopts more productive strategies to accomplish important goals (Waters, Marzano, & McNulty, 2005).

Schools are open systems that interact with and are affected by entities both inside and outside the system. Schools are never at rest, because of their conflicting needs to both maintain equilibrium and to change in order to survive. Reforming education then means dealing with the paradox of a complex entity that must change in order to survive, yet one that inherently resists change (Katz & Kahn, 1966).

In an era of rapid economic and social transformation, the business world finds that it must adapt to new technologies, changing markets, and global competition. This new revolution in the workplace suggests fundamental reforms for education (Wagner, 1993).

Major systemic changes are not easily accomplished. Awareness of the myriad political and bureaucratic difficulties involved in making major institutional changes, especially with limited financial resources, leads to the caution that a successful approach is not a straight-forward, sequential, linear process. For significant systemic change to occur, the infrastructure must be geared to sustain it.

Finances, personnel, time, space, equipment, and other essential resources must be made available, organized, and used in ways that adequately operationalize policy and promising practices. This includes ensuring sufficient resources to develop an effective structural foundation for prototype development, systemic changes, sustainability, and ongoing capacity building (Adelman & Taylor, 2003).

Those who do not support positive change are not building negative entropy, or useful energy, into the school (Katz & Kahn, 1966). School leaders in the 21st-century need a clear understanding of the standards and related skills they must master and apply in order to ensure staff and students are engaging in relevant, 21st-century learning.

Domain 7: 21st-Century Skills

Important questions:

1. Do you believe students need core subjects (English, reading, math, science, and social studies) in order to be successful?
2. Do you believe that awareness of happenings around the world is important for students' future success?
3. Do you believe that understanding business and finances is important for students' future success?
4. Do you believe that knowledge of government is important for students' future success?
5. Do you believe that health and wellness awareness is important for students' future success?
6. Do you believe information and communication skills are important for students' future success?
7. Do you believe thinking and problem-solving skills are important for students' future success?
8. Do you believe interpersonal and self-directional skills are important for students' future success?
9. Do you believe 21st-century tools should be used with learning skills in order for students to be successful?
10. Do you believe that ethics, including personal responsibility, is important for students' future success?
11. Do you believe self direction and social responsibility are important for students' success?
12. Do you believe student assessment should measure thinking skills in addition to knowledge of core subjects?

Supporting opinions. The Partnership for 21st-Century Skills *(Partnership)* terms itself

as the leading advocacy organization focusing on infusing 21st-century skills into education. They bring together the business community, education leaders, and policymakers to define what they call a powerful vision for 21st-century education to ensure every child's success as citizens and workers in the 21st century (Partnership, 2007).

The Partnership defined six key elements of 21st-century learning: (a) core subjects, (b) learning skills, (c) 21st-century tools, (d) 21st-century context, (e) 21st-century content, and (f) 21st-century assessments. These elements are divided into three categories: learning and innovation; life and career skills; and information media and technology skills.

The basic concepts of 21st-century learning and teaching relate to helping students master core subjects in a contemporary context. Instruction should always include content in a contemporary context through the incorporation of relevant examples, applications, and settings. Extensive contemporary content, including global awareness, civic and business literacy, should be available and used by students. Where applicable, schools should create 21st-century content that is relevant to the economic needs of their region, such as biotechnology, manufacturing, or agricultural technology (Partnership, 2007).

Given the vast differences between skills needed to be successful in the 20th and 21st centuries, educators will need leaders who can provide high-quality, relevant professional development programs. Considerable thought should be given to planning professional development in order to avoid the trap of doing the same kinds of things and yet expecting different results.

Overarching Questions Leading to School Improvement

The real method for system change begins and ends with ongoing, authentic conversations about the important questions. In addition to the domain-specific questions previously listed, Wagner (1993) lists five essential questions that lead to higher performing schools: (a) What are the school's strengths and weaknesses? (b) What structures does the school need to reach its goals? (c) What are the school's priorities and strategies for change? (d) What structures does the school need to reach its goals? and (e) What new skills and resources will the school need? Answers to these questions can launch the strategies for system-wide change.

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FACTOR ANALYSIS, FORMATIVE EVALUATION, BENCHMARK DATA, AND PROFESSIONAL DEVELOPMENT: A RECIPE FOR SUCCESS

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ABSTRACT

In the era of accountability and assessment, teachers are often intimidated by the nuances of data driven decision-making. Although the powerful impact of DDDM is well documented, many teachers remain resistant to the use of assessment data for driving instruction. One likely cause of teacher resistance to DDDM practices lies in lack of sufficient statistical and assessment training provided in teacher education programs across the country. Thus, the question becomes "How can we empower teachers to become effective data driven decision-makers using existing assessment tools?" The authors propose a two-part answer. First, statisticians must explore more effective classroom-level means of using existing assessment tools such as state accountability exams for diagnostic purposes. Second, well-designed professional development must be created and implemented to close the gap between statisticians knowledge and teacher practice.

Introduction

The enactment of No Child Left Behind (NCLB) in 2001 and the implementation of accountability, standards, and assessment plans have resulted in seemingly innumerable possibilities to improve student achievement. Data Driven Decision-Making (DDDM) is a powerful technique that has been found to be an effective tool for improving achievement (Schmoker, 2008). Formative and summative assessments are prevalent tools that integrate DDDM into the classroom. Although the powerful impact of DDDM is well documented, many teachers remain resistant to the use of assessment data for driving

instruction. One likely cause of teacher resistance to DDDM practices lies in lack of sufficient statistical and assessment training provided in teacher education programs across the country. Thus, the question becomes "How can we empower teachers to become effective data driven decision-makers using existing assessment tools?"

To answer this question requires a two-fold response. First, statisticians must explore more effective classroom-level means of using existing assessment tools such as state accountability exams for diagnostic purposes. Second, well-designed professional development must be created and implemented to close the gap between statisticians knowledge and teacher practice. A two-way filter between the statisticians and teachers needs to be put in place so that statisticians are applying their knowledge in classroom relevant ways, and so that teachers may better understand what statisticians develop. This "filter" will not necessarily create statistician-teachers but teachers who are proficient in the necessary statistical knowledge to utilize assessment outcomes to drive school and classroom practices.

This paper has three primary, related purposes. First, the authors evaluated the factor analytic model of the items on the Mathematics portion of a state accountability exam. Second, the authors discuss implications of the factor analysis results for curriculum alignment and formative assessment practices using summative assessment data. Finally, the authors discuss the need for professional development to help teachers translate this information into classroom practice.

Perspective

Research indicates that the use of formative assessments can improve student achievement and close instructional gaps (Guskey, 2007; Chappuis & Chappuis, 2007; Black, Harrison, Lee, Marshall, & Wiliam, 2004). In this context, formative assessment is defined as assessments designed to monitor student progress during the learning process as a result of the instructional process (Chappuis & Stiggins, 2002). Thus, research has supported the notion that creating an assessment to distinguish what specific content area each student is lacking in understanding, and subsequently using the outcome of this assessment to help the student gain a better understanding of the concept by closing instructional gaps, is beneficial in achieving proficiency. Contrastingly, summative assessment is defined as assessments created to determine a student's aptitude after completing a unit on a specific content (unit test) or completing the end of the school year (End-of-Course Exam) (Stiggins, 2002). Author and Author (2009) make an important clarification with regard to formative and summative assessment, noting that either summative or formative assessment data may be used for formative or summative purposes.

In this study, the authors executed formative evaluation of summative assessment data. Formative evaluation is defined as the evaluation of the outcomes of any type of assessment data in order to

provide feedback so as to inform teachers, students, and educational stakeholders about the teaching and learning process (Author & Author, 2009). In addition to discussing the need to train teachers to better understand and engage in DDDM practices, this paper seeks to explain means of formatively evaluating summative state accountability exam data to inform and drive classroom practices at the student level. Furthermore, problems with the statistical underpinnings of qualifying curriculum as aligned with standardized test data and vice versa, and the impact this has on existing formative assessments used in schools are discussed.

Methods

In the present study, a confirmatory factor analytic model with tetrachoric correlations (correct, incorrect) of all Mathematic responses to items was completed to assess how well the items loaded relative to their defined construct. Along with evaluating the factor analytic model, all students were classified into one of four proficiency classifications: Below Basic, Basic, Proficient, and Advanced. The proportion of students getting the individual items correct for each group was compared to assess how difficult the items were and how well they discriminated between the groups. For example, assuming the items are accurately measuring what they are purported to measure, there will be a higher proportion of advanced students answering harder questions than students in lower proficiency classes.

Data Sources

The Mathematics portion of a large standardized state-wide accountability assessment was used and analyzed. This assessment was designed to measure student progress on grade level content standards and is comprised of both criterion-referenced (CRT) scores and norm-referenced (NRT) scores. The mathematics portion has 40 items and is broken down into five sections: Number and Operations (8 items), Algebra (9 items), Geometry (7 items), Measurement (8 items), and Data Analysis and Probability (8 items).

Results and Conclusions

Internal consistencies (Cronbach's alpha) were calculated to assess for reliability of the five substrings: Algebra (.62), Geometry (.50), Data Analysis and Probability (.63), Number and Operations (.70), and Measurement (.63). The Cronbach's alpha of all 40 items together was .86. For the confirmatory factor analysis, if the Benchmark items are measuring the projected content they are intended to measure (i.e. all 7 Geometry items are only accurately measuring a student's ability to do Geometry), then these items should all load together on one factor. This should be found for the other four content areas as well. Thus, a simple structure of the factor loadings should accurately represent the data. However, this is not what the data represented. Results of the factor analysis indicate five factors, however, one factor is explaining the majority of the variance (31%). The five factors explained a total of 43% of the variance, leaving 57% of the variance unexplained. In fact, after evaluating the results of the varimax rotation, it is not apparent that any of the five factors are truly measuring one specific content. There is no evident

pattern or item grouping that would be expected to be found, especially for a standardized state-wide assessment.

Based on the data that were provided, four groups were created based on the students' proficiency classification. For each group, the proportion of students who answered each item correct was calculated and these proportions were compared to evaluate how well the content was perceived to be understood by each group. Several items were deemed as suspect with regard to how many students in each group answered correctly. For instance, several items revealed a considerably low percentage of advanced students answering the items correctly. Perhaps this reflects the content for these items was not effectively covered. These results, along with the fact that 57% of the variance in the factor analysis was not explained, potentially reflects a disconnect between what is expected to be taught (curriculum) and what is assessed (state accountability assessment).

An analysis of each individual item via the analysis of the proportion of students answering the question correctly provides teachers feedback, revealing holes in students' understanding of concepts missed on state accountability assessments. Thus, the teacher receives more information than percent correct or incorrect; instead, the teacher receives valuable feedback that can drive classroom practices. For example, this type of analysis may reveal that even a teacher's high achieving fourth grade students missed all of the probability items in 2009. Thus, a teacher who understands these results would also understand that it is important to approach his or her probability lesson in a new fashion for the 2009-2010 school year. In addition, the students' fifth grade teacher would know that students' lack of understanding with regard to this concept must be addressed before moving on to more complex mathematical concepts.

Ideally, curriculum and assessment practices should form a circuit-like system (See Figure 1). Curriculum should align with and be assessed accurately by summative assessments (i.e., state accountability exams). Because summative assessments should be designed to align with current curriculum, assessing student proficiency, summative assessment items and outcomes should provide a foundation for the development of formative assessments. Thus, formative summative outcomes should inform teacher practice and student learning, which in turn should inform curriculum design. However, when any part of this DDDM circuit is broken, the effectiveness of subsequent pieces also declines (See Figure 2).

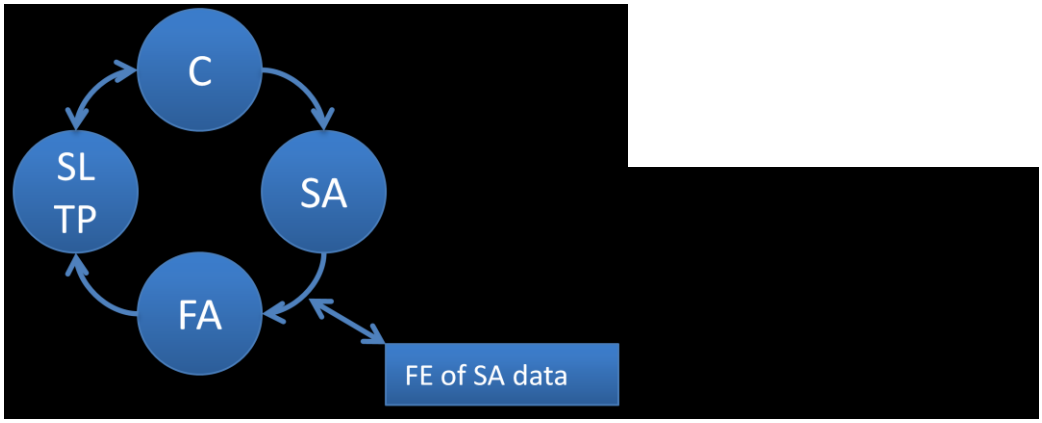

Figure 1. Effective DDDM circuit

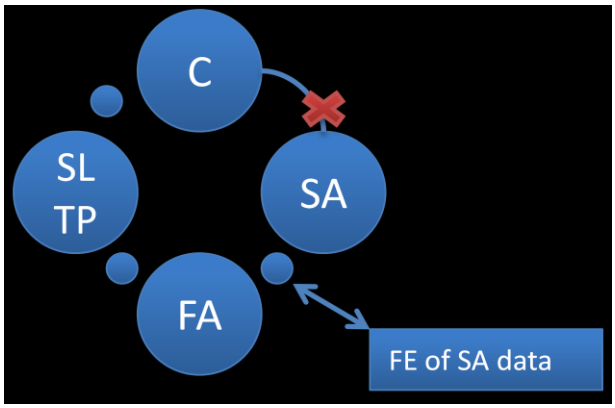

Figure 2. Broken DDDM circuit

This formative evaluation of summative, state accountability assessment has the potential to enable teachers to make effective data-driven decisions subsequently tweaking teaching practices and ultimately improving student outcomes. More specifically, re-evaluating what the existing items actually measure, as they are not effectively assessing student outcomes based on current math curriculum (only 43% of the variance explained), actions can be taken to close instructional gaps and create more appropriate classroom level formative assessments.

Scholarly Significance

The value of this work is paramount at a time where US students' academic prowess continues to diminish on the international academic playing field and while achievement gaps at home continue to prevail. The intent of NCLB is admirable as it contributes important data on student performance, but if it is to be effective, teacher friendly DDDM tools are not developed there is little hope that NCLB will overcome teacher resistance and its goals be realized. Moreover, if teachers are not sufficiently trained

to use these types of DDDM tools, then DDDM will be the newest tenant in the graveyard of great reform ideas past.

A key element to the success of NCLB and DDDM is the development of more classroom relevant tools from NCLB-mandated assessments. One means of accomplishing this goal is the use of formative evaluation of summative assessment data through appropriate statistical methodology. Through the formative evaluation of summative assessment data three powerful results may occur (See Figure 1). First, summative assessments may be re-evaluated and redesigned to better align and assess existing curriculum. Second, formative evaluation of the existing summative assessment data can assist teachers in identifying potential instructional gaps. Finally, formative assessments that actually align with existing curriculum for each state can be better designed relative to the standardized summative assessments by which student performance is actually evaluated. However, providing the means of engaging in formative evaluation is insufficient if professional development is not created and implemented to empower and support teacher use of formative evaluation of summative, state accountability assessment data.

It is crucial that experienced teachers, administrators, and statisticians work together to develop appropriate, accessible, and effective professional development to help teachers become active data driven decision-makers. Moreover, support must be provided beyond the traditional two-day workshop format as suggested by the National Staff Development Council (NSPC, 2009). Ideally, each school would have a statistician to support these practices. However, that is not a realistic option at this time. It is possible to provide teachers with job-embedded support using district resources, data teams, and coaching models. Currently, the authors are engaged in the development and implementation of this type of professional development, which will be further discussed in a full paper.

NCLB has led education in this country to a crossroads. At this crucial educational intersection, educational stakeholders cross a threshold to a time of both great potential and vulnerability. There is great potential for the use of DDDM, a research validated means of improving student achievement, but this is also a time of great vulnerability for DDDM. If effective and practical DDDM tools are not developed, and related professional development not employed, DDDM will become the latest educational reform effort to be “left behind”.

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DEFICIENCY OF WEIGHTED SCORES AND A POSSIBLE SOLUTION: A CASE OF QUALITY ASSESSMENT OF UNIVERSITIES IN INDIA

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ABSTRACT

India has recently adopted a weighted score system for assessing quality in higher educational institutions. We highlight a deficiency of the system using a specific example from the publications of the accreditation council of India. This paper argues that the deficiency arises because the weighted score does not distinguish between input (resources) and output factors. We point out that data envelopment analysis (DEA) is a suitable technique which can eliminate this deficiency. Owing to lack of access to data from India we do not carry out explicit computations but provide references to studies which have applied DEA employing data from the UK and US. The technique, at best, is a decision support analytic tool that provides education managers an objective measure of quality and does not replace human judgment based on expert peer review.

Keywords: Higher education, quality assessment, DEA, input, output.

Introduction

As India moves from a centrally planned controlled economy to a *laissez-faire* market economy, institutions of higher education are undergoing an upheaval. The budget support from the public exchequer has declined. The benevolent nature of public funding is getting supplanted by devoir to the fund providers, public or private. Higher educational institutions (HEIs) in India have to learn to factor in accountability while maintaining quality. Since the capitalistic societies have long dealt with these issues, the paper delves into their framework and analyzes the conundrum Indian HEIs face using this perspective.

Vught and Westerheijden (1994) differentiate between extrinsic and intrinsic value of higher education. Consequently, quality assessment related to these values is also distinguished. The intrinsic qualities refer to the ideals of the search for truth and the pursuit of knowledge. Higher education institutions (HEIs) have always espoused the values and ideals of the search for truth and the disinterested pursuit of knowledge. Such a model may be labeled the English model. In India, HEIs have traditionally functioned in the intrinsic quality framework in modern times until recently.

However, several factors which affected Western Europe and the US in late nineteen-eighties and early nineteen-nineties have begun to affect India now. There is rapid growth in size of student population accompanied with an increase in the number of fields of study, departments and even whole new institutions. On the other hand limits of public expenditure on higher education have been reached. Budget-cuts and voluntary retirement schemes (even retrenchment) have led to a decrease in teacher-student ratio which automatically lead to questions about the relative quality of processes and products in higher education. A third factor concerns the transition to a technology-based economy, which leads to student demanding fields that are perceived to be important for further economic development.

The factors listed above bring extrinsic quality into play in the system of higher education. The extrinsic qualities are related to the services centers of tertiary education provide to society. The extrinsic values of higher education have driven the governments to frame policies of quality control in higher education. The increasing costs of higher education systems have to be legitimized by clearly definable societal benefits today. Such a system where centers of higher education are plugged into external services to society by an external agency is called the French system (Vught and Westerheijden, 1994). Under this system the authority of what needs to be taught and by who is vested in an external authority.

As the quality management systems evolve, it is increasingly being realized that both external and internal qualities are important societal objectives and assessment of quality along only one dimension will present only an incomplete picture. With the advent of National Assessment and Accreditation Council (NAAC) in India, the value framework for Indian HEIs encompasses contributions to national development and fostering of global competencies among students, apart from inculcating a value system and quest for excellence among students. And it is safe to state that a mix of both French and English systems in quality management of HEIs is a phenomenon world-wide, and only the proportion of the mix varies.

Before we proceed to discussing the main contribution of this paper, viz. application of Data Envelopment Analysis (DEA) to overcome deficiency of a weighted score system of quality assessment in the field of higher education, it is important to dwell upon the meanings of both quality and assessment. Consequently, in the following section, we discuss both these terms. In the section after that, we discuss a complicating factor – funding. Also, in this section we bring out the difference between the Association to Advance Collegiate Schools of Business (AACSB) and NAAC accreditation eligibility criteria. To set the stage for the DEA as quality assessment tool we point out a deficiency of a weighted score of quality and exemplify it using data from an NAAC publication. Following this section, we describe the DEA and how it can be applied to quality assessment in higher education. We also discuss the limitation of the technique in this section. Final section concludes.

Quality and assessment

In daily usage quality is usually taken to mean something of excellence. The word, however, is problematic because semantic nuances lead to different meanings in different context. Mortimore and Stone (1991) cite at least four uses of the term;

- an attribute or defining essence
- a degree of relative worth
- a description of something good or excellent
- a non-quantified trait.

No matter what the explicit context is, implicit in the word's meaning is a normative or comparative element. Perhaps because of this, the term is difficult to use outside a particular context. Thus a school of recognized quality in one location may not be considered so in another. Naturally, the context will be influenced by the aims of the school and its community, the aspirations and talents of its pupils and their particular backgrounds.

Yet, later in the paper we argue that when we measure quality using DEA, a common metric can be computed which enables cross schools comparison. The technique can capture the implied comparative element. However, it will fail to encapsulate an inherently non-quantifiable trait, though it can capture a qualitative trait that has been assigned a Likert type of scale.

Assessment, thankfully, in contrast to the word quality, seems to mean the same universally, and only the object of assessment needs to be specified, i.e., what is being assessed. For example, the Office of Assessment at Virginia Commonwealth University assesses student learning outcomes. It states that for this objective the following brief definition can suffice: the systematic and methodologically sound examination of student learning outcomes for the purpose of program improvement. Another definition, somewhat more elaborate with respect to the same objective, is the following: an ongoing process aimed at understanding and improving student learning. It involves developing explicitly measurable expectations that are publicly comprehensible; setting clear criteria for learning which are of a quality relevant to the mission and capabilities of an institution; systematically gathering, analyzing, and interpreting evidence to determine how will learning reflects those standards and expectations; and using the resulting information to document, explain, predict, and improve performance. It is a shared culture of continuous improvement in higher education. (Note: Both definitions, brief and elaborate are taken from http://www.assessment.vcu.edu/). Thus, both definitions lead to the same essence of assessment as a process: identifying expected outcomes; determining whether outcomes have been achieved; providing evidence of improvement based on analysis of those results.

Armed with this definition of assessment and the realization that the word quality implicitly contains a comparative element, we will discuss DEA as a metric of quality assessment in later in the paper. But first we touch upon a complicating factor – funding.

Financing – A complicating factor

Why should financing be a complicating factor in quality assessment? In a quality assessment framework where pursuit of knowledge is the sole objective of HEIs, a peer review by a self-governing community of fellows is sufficient to assess quality. However recall, from the earlier discussion, that quality assessment incorporates extrinsic quality assessment as well. Extrinsic quality is assessed in terms of accountability, primarily to the entity which funds the HEIs.

Accountability to the funding agency raises the hackles of many academicians, and may be rightly so. Newspapers are awash with stories about distortion in reported results of research funded by tobacco and drug manufacturing companies. But the level of antagonism is asymmetric between the categories of government (public) funding vis-à-vis private (or market) financing. While the government is perceived to be benevolent, market is seen to be profit maximizing and not so conducive for enhancement of the intrinsic quality of higher education. Jonathan (1990) goes to the extent of cautioning:

"Introduction of an internal market into the public education system is a measure that the public would be unwise to welcome."

However, as government budgets for higher education become smaller, internal competition amongst incumbent public universities to garner a share of those funds intensifies. In such an environment, the relative quality of HEIs becomes the touchstone for disbursement of the limited pie of funds. Since, government funds are nothing but taxpayers' money, accountability to the final fund provider (taxpayer) in terms of quality delivery becomes the key determinant of who receives how much funding. For example in the UK, the 'Funding Council' is responsible for fund allocation. Such an operating environment is very similar to that of a private market.

While accountability to fund providers in terms of quality is here to stay, yet a direct, rigid relationship between quality review reports and funding should not be established. The reason is that quality judgments are not the sole input for funding (Vught and Westerheijden, 1994). This rationale highlights an important point, while quality may not be considered an input for financing, funds are an important determinant of quality. To see this point, consider new institutions that have no output yet so that judgment about their quality cannot be made, so that their quality cannot determine the amount of funding they receive. In principle, the more the available funds, the higher should be the quality. This causality causes us to consider funds/resources as an input factor to quality when we discuss DEA later in the paper.

Nowhere in the world is the market mechanism the primary coordination mechanism of higher education as in North America (US and Canada). HEIs are organized like private corporations. They have a board and a president just like private corporations do. Although the influence of governmental

steering is not completely absent but this influence is limited. If HEIs in US do not maintain quality by themselves they will lose resources, students and scholars to their competitors. And even among the US institutions, Schools of Business exemplify the dominance of the market mechanism best.

The Association to Advance Collegiate Schools of Business (AACSB) is the organization which monitors quality standards in business education. It promotes continuous quality improvement in management education and certifies standards of programs offered by a collegiate institution. Yet for a program to be accredited by AACSB, one out of the four eligibility criterion is that the institution's "degree programs in business must be supported by continuing resources." Even though the words financing or funding are not used, yet in a market based system, the extension of the meaning of the word "resources" to mean "funding" is by no means a quantum leap. If a degree program in business is without sufficient continuing resources then it does not meet this requirement, and fails to get accredited by the AACSB.

Contrast this to the eligibility criterion that NAAC follows. Even though in 2007 NAAC published eligibility criterion for accreditation of Indian HEIs, available resource was not one of them. Dutta (2009) reports that via a fiat of the University Grants Commission (UGC), now all HEIs in India have to undergo the accreditation process of the NAAC. In effect there is no documented eligibility criterion, neither at the institution level nor at the program level, where available resources are considered as a screening mechanism for the accreditation process.

Both systems (No resource criterion for NAAC; continuing resources for AACSB) are responding to the need of their environments. In India, resources are heavily constrained, while in the US the resource criterion for eligibility acts as a mechanism to mitigate information asymmetry between students and the institutions.

NAAC's seven criteria framework. The NAAC arrived at a seven criteria framework for assessment and accreditation (A&A) of HEIs after much deliberation. These, by now familiar, are the following seven criteria

- Curricular Aspects;
- Teaching-Learning and Evaluation;
- Research, Consultancy and Extension;
- Infrastructure and Learning Resources;
- Student Support and Progression;
- Organization and Management; and
- Healthy Practices.

The details of the various criteria and the differential weights allocated to them for various categories of institutions are summarized in Table 1 below.

Table1: Seven criteria and the associated weights (in percentages)

Criteria	University	Autonomous College	Affiliated College
I. Curricular Aspects	15	15	10
II. Teaching-Learning and Evaluation	25	30	40
III. Research, Consultancy and Extension	15	10	5
IV. Infrastructure and Learning Resources	15	15	15
V. Student Support and Progression	10	10	10
VI. Organization and Management	10	10	10
VII. Healthy Practices	10	10	10

Source: State-wise Analysis of Accreditation Reports – West Bengal, 2004: An NAAC publication.

Based on the weights for affiliated colleges, the criteria (Crit) and Total (To) scores of the following colleges affiliated to the Assam University are computed (see Table 2 below)

Table 2: Criterion-wise scores of accredited colleges: Assam University

Name of Institutions	Crit I	Crit II	Crit III	Crit IV	Crit V	Crit VI	Crit VII	To
Karimganj College	80	75	85	65	70	85	85	76
Nabin Chandra College	75	75	70	60	65	65	70	70
Rabindrasadan Girl's College	71	76	70	64	71	68	71	71
Radhamadhab College	60	65	55	60	68	65	60	63
Ram Krishna Nagar College	73	75	69	74	70	72	69	73

Source: Higher Education in the North East – NAAC Quality Assessment Analysis, 2004: An NAAC publication.

These colleges feature in Annexure-I of part VI (Annexures), page 95 of the NAAC report on Higher Education in the North East – NAAC Quality Assessment Analysis, 2004.

Several points stand out for the two colleges listed at serial numbers 1 (Karimganj College) and 5 (Ram Krishna Nagar College) above. Amongst the list of 5 colleges above they are ranked at number 1 and 2 respectively, in terms of the overall score. Yet in terms of Criterion IV (Infrastructure and Learning Resources), Karimganj College is rated below Ram Krishna Nagar College by a wide margin. Ram Krishna Nagar College on the other hand outscores all the other colleges by a wide margin on the resources criterion (number IV). Despite a high score on resources, Ram Krishna Nagar College loses out to Karimganj College on the overall score. On the other hand, Ram Krishna Nagar College is ranked either 2 or 3 jointly on all other criterion, except criterion 7 (Healthy Practices) where it is ranked second to last. Compared to this Karimganj college is rated 1st on all other criterion except criterion V (student support and progression), where it loses out to Rabindrasadan Girl's College.

If Ram Krishna Nagar College is rated at the same level as Karimganj College (with a score of 65) then it joins rank with Nabin Chandra College instead of outscoring it. Similarly, if Ram Krishna Nagar College's resource rating is altered to 64 (same as that of Nabin Chandra College), then it falls below Nabin Chandra College in the rankings. The example demonstrates that a college that performs at number 2, 3, 4 in all criteria except resources where it ranks 1 can make it to a high position in the list purely on the basis of its resource pile when a weighted score is employed to determine standards.

The problem arises because a weighted score places all criteria at the same level and does not distinguish between input and output factors. As argued earlier, resources are an input into higher education quality process, whereas research and teaching (student learning) are its output. Such a categorization of the evaluation criteria can eliminate the problem associated with weighted scores. This is achieved in the framework of DEA to which we now turn.

Data envelopment analysis (DEA)

At the outset, we realize the paper may not be the first one to advocate the applicability of the technique of DEA in the Indian setting, let alone to the issue of quality assessment. Sarrico and Dyson (2000) provide a review of the literature which applies DEA to higher education performance measurement. Despite the application of the technique by several researchers in higher education, it has failed to muster enough support amongst educationists, even though it remains popular with economists and operations management personnel. Indeed, most of the research publications using DEA in education sector occur in journals in the Operations Research area, or Economics.

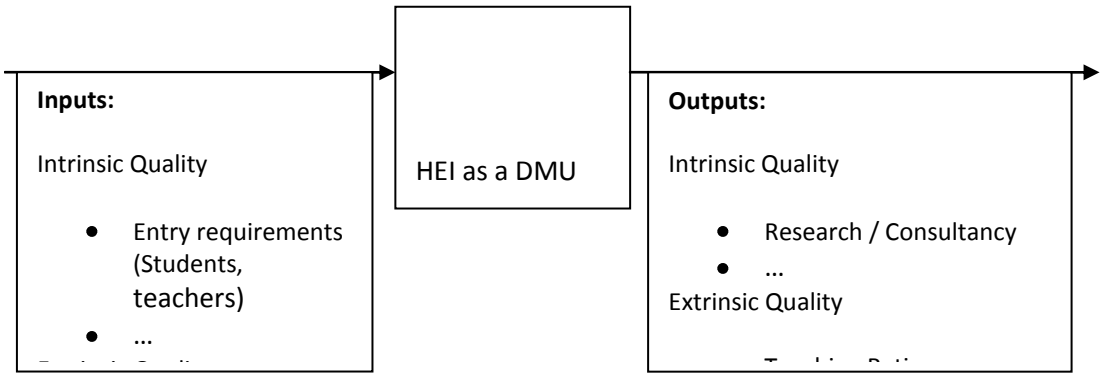
DEA is different from indicators and regression methodologies (Sarrico and Dyson, 2000). It is a Linear Programming technique, and only under certain conditions can its equivalence be established to the statistical technique of maximum likelihood estimation. Our main contention is that the technique is rooted in theory, unlike the criticism referred to in Mortimore and Stone (1991) that the procedure has "little justification in either theory or practice." For the theoretical underpinnings of DEA, please refer to Cooper et al., 2000; and Thanassoulis, 2001.

DEA refers to the unit being analyzed as the decision making unit (DMU). If there are several DMUs (universities/ colleges/departments), DEA considers the inputs and outputs to all DMUs to create a "frontier" of all outputs with respect to given inputs. Thus differentiation amongst inputs and outputs of DMUs are accounted for in the methodology. Note that phrase DMU includes non-market agencies like schools, hospitals, and courts, which produce identifiable and measurable outputs from measurable inputs but generally lack market prices of outputs (and often of some inputs as well). In this paper, we regard a DMU as synonymous with a HEI.

Note that DMU is operating at the optimal point on the frontier if (a) it is not possible to increase any output without either reducing some other output or increasing some input; and (b) it is not possible to reduce any input without increasing some other input or reducing some output. This optimal point is *Pareto efficient* for the DMU. Because of this close link of DEA to Pareto efficiency, the technique is most often used to measure efficiency of DMUs and primarily employed to analyze firm performance in economics. DEA is a non-parametric technique as opposed to a parametric technique to analyze efficiency. Johnes (1996) applies the parametric technique to study efficiency of HEIs in the UK, while Robst (2001) applies it in the US.

A schematic representation of the DEA technique for quality assessment of HEIs using input and output quality parameters is shown below:

Figure 1: A schematic diagram for quality assessment of HEIs using DEA



DEA yields a *ratio* of weighted outputs to weighted inputs (please refer to Appendix A.1 for the mathematical formulation of DEA as a Linear Programming Problem), thus intrinsically giving a score which measures output relative to the amount of input. As shown in Figure 1, it incorporates best practices along each dimension of a multiple criteria quality assessment to create a frontier of best practices. Each institution can then be benchmarked against the best practices frontier via a single score which varies between 0 and 1. A score of 1 is indicative that the institution lies on the frontier of best practices while lower scores represent that the institution is distant from it. Lower the score, farther the distance from the frontier. The technique enables comparison across institutions. If two institutions

have same inputs but different outputs, their DEA scores will be different and attributable to process factors.

The distinction between inputs and output quality parameters helps distinguish between institutions that have greater outputs relative to inputs, hence the measurement serves best when it used for comparative purposes.

Even though different institutions will have different objectives, but, in general, all will want, first of all, to attract students; then to develop competencies in them, with different emphases on teaching and research, regional and national scope, vocational and comprehensive courses, and finally, regardless of their mission, they will want to keep financially sound to survive as an organization. DEA technique is capable of capturing all this. Moreover, the DEA score *can,* for instance also be used when allocating resources, but only in a formative process in the search for enhanced performance of existing institutions.

However, DEA can only be applied when input and output quality parameters are observable and measurable. It cannot incorporate strictly qualitative traits which are non-quantifiable. The score is only good to the extent of the parameters chosen to measure the input and output (For a list, please refer to Appendix A.2. Note that the list is neither exhaustive, nor mandated for India or any other country). But it has a theoretical basis, and its output can be used to reallocate resources which can alter "societal welfare" depending upon larger social objectives. Although one can question use of performance measures like DEA scores in higher education, but it is a fact that OECD countries have adopted many performance indicators in the education sector.

Conclusion

This paper highlights a deficiency of the weighted score system to assess overall quality of HEIs. In particular, the paper argues that accountability of the higher educational system towards its financiers is becoming the order of the day. So the paper borrows from the AACSB standards- a system which operates in a market environment, and highlights that available resources are a critical input factor into the accreditation process. An assessment technique that does distinguish between input and output quality factors and takes resources as an input into the quality process is the DEA. The paper provides the overarching theme of the technique, and argues that if its scores are used to allocate resources to competing HEIs, it should be with a lot of caution.

APPENDIX A

A.1

In practice, the DEA model which is output oriented is applied most often. In this formulation the weighted input factors are normalized to 1. The model is solved using the Simplex method for Linear Programming Problem (LPP). The mathematical LPP is the following:

$$\max \sum_{r=1}^{\tilde{}} y_{rj_0}$$

$$subject..to \sum_{r=1}^{\tilde{}} y_{rj} - \sum_{i=1}^{\tilde{\tilde{}}} x_{ij} \leq 0; \quad (j = 1, ..., N);$$

$$\sum_{i=1}^{\tilde{\tilde{}}} x_{ij_0} = 1;$$

$$u_r \geq 0; \quad (r = 1, 2, ..., s):$$

$$v_i \geq 0; \quad (i = 1, 2, ..., m).$$

where,

y_{rj} = amount of output *r* from unit *j,*

x= amount of input *i* from unit *j,*

u_r= the weight given to output *r,*

v_i = the weight given to input *i,*

N = the number of units,

s = the number of outputs,

m = the number of inputs.

A.2

We list some of the output and input quality parameters which have been employed in the academic literature in studies employing data from UK and USA.

Input parameters:

Extrinsic quality

- Funds
- Resources for technology/library

Intrinsic quality

- Quality of students (GPA)
- Quality of Teachers (Academic /Professional qualifications)
- Teacher-student ratios
- Percentage of professors to total faculty
- Diversity of student population

Extrinsic/Intrinsic quality

- Compensation to faculty and staff

Output parameters:

Extrinsic quality

- Teaching evaluations
- Graduation rates
- Employment to graduates
- Completion rates
- Student support and services
    - Hostel accommodation
    - Cost of tuition and living

Intrinsic quality

- Research output
    - Publications/Citations
- Graduation rates of doctoral students

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ECONOMIC DETERMINANTS OF THE PATTERNS OF DIVORCE AND MARRIAGE IN TENNESSEE

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ABSTRACT

The impact of socioeconomic characteristics on marital status vary in magnitude and according to regional geography. Past studies to determine those factors influencing divorce and marriage have focused largely on micro-level data collected on individuals. This paper attempts to identify the impact of aggregate-level economic indicators on divorce and marriage rates using panel data on Tennessee counties from 1990 to 2007. Efforts to measure the effects of the business cycle and regional variation on divorce and marriage rates may substantiate or challenge long-standing beliefs pertaining to the contractual relationship of marriage. The results may improve our understanding of these interactions to ultimately shed light on those factors influencing the decision to marry and divorce.

Keywords: regional economics, economics of marriage, economic factors on marriage.

IMPACT OF QUALITY MANAGEMENT PRACTICES ON THE PERFORMANCE AND GROWTH OF SMALL AND MEDIUM SIZED ENTERPRISES (SMEs) IN GHANA

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ABSTRACT

Purpose - This study investigates how the implementation of quality management practices will impact on the performance and growth of small and medium sized enterprises (SMEs) in a developing country, Ghana.

Design/methodology/approach - Over the years, the practice of quality management has been identified and awareness has been created as one of organization's most important key ingredient for success and global competitiveness. This study follows from a previous study by Fening, Pesakovic, and Amaria, (2008) that investigated the relationship between quality management practices and SME performance in Ghana adopting the Malcolm Baldrige Criteria for performance excellence variables of leadership, strategic planning, information and analysis, customer and market focus, human resource development and management, process management and business results. A sample of 200 small firms that employ not more than 50 workers within the metropolis of the capital, Accra was selected and interviewed. The questionnaire asked respondents to indicate on a 5-point Likert scale how the implementation of quality management will impact on the development and growth of SMEs in Ghana.

Findings – The results have established that if firms implement quality management practices, it will have a tremendous impact on the performance and growth of SMEs in Ghana. The study also finds support for the argument that quality management practices improve organizational performance both in large and small businesses and in any part of the world.

Originality/value – This study has demonstrated that Ghanaian owner managers believe that quality management is a key-contributing factor to firm growth and performance.

The findings of the study have added to the body of knowledge that quality management practices improve organizational performance, growth and development of firms.

Keywords Quality, Quality Management, Baldrige Award, Small to medium-sized enterprises, Ghana

Introduction

Over the years, the practice of quality management has been identified and awareness has been created as one of organization's most important key ingredient for success and global competitiveness. An organization that implements quality management practices may have a competitive advantage over its competitors. The advert of globalization has resulted in increased competition amongst firms, as such managers of today are increasingly seeking different ways and approaches to achieve, improve, and sustain organizational performance and competitive advantage. It is widely recognized that Small and Medium Sized Enterprises (SMEs) form the backbone of the private sector at all levels of developing countries and Ghana is no exception. Greenan, Humphreys, and Mclvor (1997) noted, "The contribution of small and medium sized enterprises towards economic performance is now universally accepted as significant" (p 208).

A number of studies have concluded that the practice and implementation of good management is a key ingredient to a firm's success (Ghosh, Teo, & Low, 1993; Yusuf, 1995). For Ghanaian small businesses to survive and grow in the present global regime, they need to compete with businesses in the developed and newly industrialized countries. To drive the manufacturing and other sectors into accelerated growth and global competitiveness, Ghanaian businesses must look beyond their present conditions and employ every available alternative in terms of innovation, strategy and the best available technology.

For Ghanaian products and services to be accepted and be competitive on the international markets, there is the need for the businesses to take a critical look at the way they operate. It is important that they improve the quality of their products and services to lower their operating cost. For businesses that would want to meet and exceed the expectations of their customers both home and abroad, quality management practices is the strategy tool. The question therefore is if these firms implement quality management what will be the impact on SME performance and growth in the country? Will the practice of quality management enhance the chances of their products being accepted on the international markets to compete with other similar products worldwide? Are SMEs managers familiar with quality management practices?

Objectives and importance

The focus of this study was to attempt to examine the impact of implementing best practice quality management and its effects on the performance and growth of SMEs in Ghana, and compare the impact on performance between the indigenous Ghanaian owner/manager and the foreign owned owner/manager. It will also add to the concern of financial institutions as they have consistently advocated for the practice of quality management practices especially in the area of good record keeping and leadership managerial skills. This study may unearth why it is important to practice modern or quality management

Literature Review

The objective of this study was to investigate the impact on the implementation of quality management practices on the performance and growth of SMEs in Ghana. Researches have been conducted to determine the relationship between quality management practices and performance mostly in the developed world. In the developing world, the study of quality management practices and organizational performance is scanty. Most of the studies done are in large corporations. There is the notion that large organizations have the financial and human resources as well as other resources to assist in the implementation of quality management. Small firms lack those resources to implement quality management. Be that as it may, quality management is seen as a tool to improve organizational performance both large and small and in any part of the world.

The review of the literature identified (Anderson & Sohal, 1999; Evans, 1996; Samson & Terziovski, 1998; Prajogo & Brown, 2004) who conducted such studies in developed countries. Most of the studies have been based on large firms and in developed countries. Studies have been conducted to determine the importance of management practices on organizational performance (Adam, 1994; Anderson & Sohal, 1999; 1994; Powell, 1995).

The concept of quality has been a concern for most businesses. Vokurka (2001) in his article declared, “global competitiveness is a reality and quality is key to winning in the marketplace. By itself, quality may not guarantee success but it is difficult to compete without it. And like most other competitive factors, the standards of quality are constantly rising” (p 363).

In some studies, quality management is referred to as Total Quality Management. In this study, Quality Management (QM) is used to refer to all kinds of quality management principles and philosophies. What therefore is Quality and why implement quality management practices? Quality has been defined by Karapetrovic and Willborn (1997) as “the ability of a product to satisfy stated or implied requirements” (p. 287). Daft (1997) defines Total Quality Management (TQM) as a concept that focuses on managing the total organization to deliver quality to customers and identifies employee involvement, focus on the customer, benchmarking and continuous improvement as the four significant elements of the concept.

The Department of Trade and Industry (DTI), UK has declared, "Best Practice Management provides a platform for the sharing of knowledge, processes and ideas, otherwise known as benchmarking" (DTI, 2004). This is in line with Crosby's quality management philosophy. According to Wessel and Burcher (2004), "quality management in general deals with permanently redirecting a company's macro and micro operations towards the needs of internal and external customers' (p. 264).

Studies have shown that when firms implement quality management practices, they accrue some benefits, which includes greater competitiveness and high performance. Dow, Samson, and Ford (1999) concluded "the relationship between quality practices and superior quality outcomes is a fundamental and defining element of the whole concept of quality management" (p 2.). It must be noted that the underlining factors in all the definitions and others are meeting customers' expectations or requirements, continuous improvement and strategic planning.

This study continues with a recent study by Fening, Pesakovic, and Amaria (2008) that adopted the Malcolm Baldrige National Quality Award (MBNQA) of the USA. That study looked at the relationship between quality management practices and SME performance in Ghana and the findings supported some studies to the effect that quality management practices improve firm performance. Using the same seven main domains which include leadership, strategic planning, workforce focus, customer and market focus, measurement, analysis and knowledge management, process management and business results, this current study looks at the impact of the seven variables on SMEs in Ghana.

Various studies (Kuratko, Goodale, & Hornsby, 2001; Tata, Sameer, & Jaideep, 2000; Ahire & Golhar, 1996) have used basically the seven domains or elements of the Baldrige Quality Awards as the elements or variables of quality management. Other emerging countries such as Malaysia and Singapore have adopted them in their quality framework (Sohail & Hoong, 2003) making it a world recognized modern or quality management practices that could be practiced anywhere in the world by organizations both large and small and especially with countries that are yet to find their feet in this era of globalization and global competition.

The following quality management models namely, Malcolm Baldrige National Quality Awards (MBNQA), European Foundation for Quality Management (EFQM), Australian Quality Award (AQA), and the British Quality Foundation (BQF) all identified leadership, planning, people (HR), customer focus and processes as the main variables for quality management or best practice management. The objectives of all four models are to improve organizational performance. However it must be stressed that the management gurus notably Deming, Juran, Crosby all had some quality management factors, which showed some similarities. All the models mentioned above were modeled around the identified factors of the quality pioneers.

As indicated earlier, this study continues a recent study by Fening et al. (2008) that adopted the MBNQA variables as tools of quality management practices. However, the MBNQA 2008 edition of the criteria changed some variables. The recent edition is

(a) Leadership

(b) Strategic Planning,

(c) Customer and Market Focus

(d) Measurement, analysis and knowledge management

(e) Workforce Focus

(f) Process management and,

(g) Results

The dependent variable is performance. The performance indicators for this study will include profitability, sales growth, customer satisfaction, employee morale, and market share. Some of these performance measures have been used in previous studies (Yusuf & Saffu, 2005; Lerner & Almor, 2002; Saffu & Manu, 2004).

The Study Framework

The study framework also in Fening et al. in Figure 1 below describes the implementation of the quality management practices.

Figure 1: Study framework

It sees leadership as the implementer of the other variables and that the leadership of an organization and in SMEs the owner/manager and one or two managers must begin with quality initiatives and

develop the strategic plan based on of course the visions of the owner/manager. The strategic plan includes the mission and objectives of the firm. The plan gives details on customer and market focus strategy, how the firm hopes to deal with its analysis on information and what to use the information for, the human resource aspect in terms of selection and recruitment, training and development, employee involvement, how to build teams in the organization, how to motivate employees and maintain employee loyalty and above all how to link all these functions in terms of processes using information technology. This may include IT strategy, selection and implementation. Though this may be too much for a small business, some level of IT must be acknowledged. The bottom-line of the quality management process is that it must bring results in terms of profitability, market share, customer satisfaction, delivery times, quality products and services. The proper and successful implementation and execution of the strategic plan with the support of the owner/manager and top management will eventually improve performance as indicated by research.

There have been studies regarding the relationship between certain variables of quality management and performance. Considerable amount of such studies have been devoted to planning and performance of SMEs (Aram & Cowen, 1990; Knight, 1993; Wijewardena, De Zoysa, Fonseka, & Perera, 2004; Yusuf & Saffu, 2005) human resource management and performance (Huselid, 1994; Huang, 2001; Marlow & Hannon, 2000), and leadership and firm performance (Anderson & Sohal, 1999). There have also been studies about the relationship between quality management and quality performance. Most of these studies are based on empirical studies such as the ones conducted by (Ahire, Golhar, & Waller, 1996; Dow, Samson, & Ford, 1999; Flynn, Schroeder, & Sakakibara, 1994). Other studies like (Adam, 1994; Powell, 1995; Samson & Terziovski, 1999) linked performance measures to quality products. The review of the literature identified (Anderson & Sohal, 1999; Evans, 1996; Samson & Terziovski, 1998) who conducted such studies in developed countries.

Leadership

The implementation of every quality tool will depend on the commitment of the leadership and top management of the organization. According to Evans (1996), “leadership involves setting directions, developing and maintaining a leadership system, focused on customers, and performance excellence” (p 43). The importance of leadership to the success of organizations cannot be underestimated. The problem with small firm leadership is that, since they are the owners of the firms they find it difficult to transfer power and control to someone who can lead the firm. This is very true with Ghanaian indigenous owner/managers. They may be good in certain functional areas (e.g. marketing, finance, HR) of the firm but they always want to be seen as the owner/managers of the organization and will always remain at the top to give direction.

Strategic planning

It has been argued that strategic planning is said to be a good management practice and very important to business (Gibson & Cassar, 2002; Schwenk & Shrader, 1993). Storey (1998) has indicated that strategic planning is a very important contributor to enterprise survival, performance and growth. A

number of studies have concluded that good planning is the key to a firm's success (Aram & Cower, 1990; Jones, 1982; Frishkoff, 1994). Yusuf and Saffu (2005) in their studies on sophisticated planning and performance in small firms in Ghana did not find any significant relationship.

Workforce focus

"Human capital of a firm is therefore the knowledge, skills and expertise embodied in its employees that can be used to manufacture products of superior value to customers and thus improve overall performance of the firm" (Amoako-Gyampah, 2003, p 4). When organizations implement and practice human resource practices effectively, it should have a direct impact on its employees. It makes them happy and brings positive results to the firm. Studies have found a positive relationship between HRM and manufacturing performance (Ichniowski, Kochan, Levine, Olson, & Strauss, 1992).

Customer and market focus

For the small business operator, it is quite easy to be in tune with its customers and also know the market in which it operates. There is the argument that small businesses do not have the capacity to conduct research for the purpose of knowing what the customer want. Customers in this modern era of globalization drive the market as to what is to be produced, in what quantity and quality. Therefore small businesses do not have a choice. Kuada and Buatsi (2005) have indicated that consumers in developing countries are "sophisticated and conscious of their rights".

Measurement, analysis, and knowledge management

The information is used to track and improve the organization's performance at all levels. The information should be constantly updated so that stakeholders who may need it for analysis can always have access and the right information to work with. For example, the inaccurate information collected about customers will give wrong signals for the production of products that will not meet customers' expectation thereby resulting in loss of revenue to the firm. For example, the business should be automated where the sales department is linked to the accounts department as well as the production department. The bottom-line of this must bring results in terms of profitability, market share, customer satisfaction, delivery times, quality products and services.

Process management

According to Evans and Lindsay (1995), the management of process quality is concerned with how the organization designs and introduces products and services, integrates production and delivery requirements and manages the performance of suppliers. The fundamental basis of innovation is to create new ways of doing things. Due to the current global competition and to enhance competitiveness, organizations are increasingly searching for new ways. With innovation, Salz (2006) writing in the Wall Street Journal under the heading High performance, the key to sustainable success is unfettered innovation reported "to create long-lasting advantage, produce dramatic shifts in

competitive position and cross new performance thresholds, companies must do more than brainstorm; they must cultivate a management approach that will encourage a continuous flow of innovation, a recognized cornerstone of all high-performance businesses" (p A10). This highlights the importance of process management. This is the characteristic of business process engineering, which was first introduced by Hammer (1990).

According to Raymond, Bergeron, & Rivard (1998), "business process reengineering consists of radically transforming organizational processes, through the optimal use of information technologies, to achieve major improvements in quality, performance, and productivity" (p 72). The benefits of business process reengineering BPR that was cited included increased productivity through reduced process time and costs, improved quality, and greater customer satisfaction. Appropriate technology must be used in the implementation of the process design. This facilitates and improves customer service. The customer should be the brain behind the process design. It will create efficiency and reduce waste and costs. The process itself must be evaluated and improved to achieve better performance.

Results

The results impact the company that ultimately decides the fate of the firm. The results are performance indicators, which may give some sort of a trend analysis in terms of each of the areas, and how management is to deal with its improvement.

"The results of all that must be benchmark to world class performance both in and out of the industry and results of financial performance and market performance improvement should align with organizational improvements" (Calhoun, 2002; p 50).

Performance measures

The definition of performance is not clear among researchers and academics. Depending on the topic of study, different researchers have different indicators to measure firm performance. There are some issues as already indicated and therefore the difficulty as to which indicator to use. The performance indicators for this study included profitability, customer satisfaction, sales growth, employee morale, and market share. Some of these performance measures have been used in previous studies (Yusuf & Saffu, 2005; Lerner & Almor, 2002; Saffu & Manu, 2004).

Methodology

In conducting this study, the quantitative approach and the survey method of collecting data was used. The questionnaire was administered through the face-to-face method of collecting data. Questionnaire was designed to ask owner/managers their views on quality management tools, how often they use these variables and how its implementation will impact on their firms' performance. The questionnaires were administered on managers in six different industries including the service, manufacturing, construction, retail, agriculture and mining. Questions included demographics such as age of firm,

number of workers employed, and educational background of owner / manager, foreign owned and/or managed or indigenous owned/managed, female or male owner/manager.

Selection of Participants

The target population of this study was small firms in Ghana that employ fewer than 50 workers. The subjects for the study were owner/ managers or top and key managers of these firms. Following the guidelines of Samson and Terziovski (1998), a survey instrument was developed, adopted and structured into three parts. Questions on part one was based on respondent's organization – the demographics. Part 2 was based on the quality management constructs of the study framework. Each section was related to the elements of quality management practices as identified by the MBNQA (1994, 2007) and also on performance. The seven constructs are as follows: 1) Leadership, 2) Strategic Planning, 3) Customer and Market Focus, 4) Measurement, Analysis, and Knowledge Management, 5) Workforce Focus, 6) Process Management, and 7) Results. Part 3 of the questionnaire was on performance and the impact of quality management practices on SMEs in Ghana.

Data Processing and Analysis

The Statistical Package for Social Sciences (SPSS) was used in the analysis of the data. The quality management variables were measured on a 5-point Likert scale and the demographic attribute on a 2-point scale. Cross tabulation was performed to segregate the demographic profile of the firms. Frequency statistics and cross tabulation were conducted to group the firms into sector groupings. The cross tabulation was also performed to help analyze firms that are familiar with quality management practices and those that are not.

Discussion and Results

One hundred and sixteen (116) usable responses were used for the analysis. 82.8% were male owners and 17.2% were female owners. Table 1 presents the demographic statistics on gender, type of owner, education and owner/managers familiarity with quality management practices. 58.6% of the respondents were Ghanaian owner/managers and 41.4% were foreign owner/managers. 42 of the owner/managers interviewed have high school education whilst 74 of the owner/managers have graduate education. With regards to owner/managers familiarity with quality management, 27.6% of the respondents were very familiar with quality management practices, 20.7% hardly at all knew anything about quality management practices, 44.8% were somewhat familiar with quality management practices and 6.9% were familiar with quality management practices.

Table 1.

Demographic Statistics on Gender, Type of Owner, Education and Familiarity of QM in Ghana

Variables		Frequency	Valid Percent	Cumulative Percent
Gender	Male	96	82.2	82.2
	Female	20	17.2	100.0
	Total	116	100.0	
Type of Ownership	Local (Ghanaian)	68	58.6	58.6
	Foreign	48	41.4	100.0
	Total	116	100.0	
Education	Up to secondary	42	36.2	36.2
	Graduate	74	63.8	100.0
	Total	116		
Familiarity with Quality Management	Hardly at all	24	20.7	20.7
	Somewhat Familiar	52	44.8	44.8
	Familiar	8	6.9	6.9
	Very Familiar	32	27.6	27.6
	Total	116	100.0	100.0

Table II presents a crosstabulation by sectors based on owner manager's educational background, 38.1% of those with high school education were in manufacturing. This was made up of 14 Ghanaians and 2 foreigners representing 33.3% and 4.8% respectively. For the service sector, 8 or 19% represented local owners. No foreign owner with high school education was in the service sector. For those in the retail sector, 12 or 28.6% were locals and 2 or 4.8% were foreigners. For those participants who were graduates, a total of 16 were in manufacturing. This includes 4 or 5.4% Ghanaian owner managers and 12 or 16.2% foreign owner managers. Those in the service sector who have graduate education are 15 or 20.3% Ghanaians and 14 or 18.9% foreign entrepreneurs. There were quite a number of foreign

owner managers in retail. They represented 21.6% as against 10.8 % local entrepreneurs. Four (4) respondents were in construction. Two (2) were Ghanaians and Two (2) were foreigners.

Table II
Owner Type by Educational background of owner/manager Crosstabulation by Industry Type in Ghana

Educational Background of owner manager	Owner Type Ghanaian Entrepreneur			Owner Type Foreign Entrepreneur			Total		
Category	Freq.	Percent Row	Percent Column	Freq.	Percent Row	Percent Column	Freq.	Percent Row	Percent Column
Secondary Education									
Manufacturing	14	87.5	36.8	2	12.5	50.0	16	100.0	38.1
Service	8	100.0	21.1	0	0.0	0.0	8	100.0	19.0
Retail	12	85.7	31.6	2	14.3	50.0	14	100.0	33.3
Mining	1	100.0	2.6	0	0.0	0.0	1	100.0	2.4
Construction	3	100.0	7.9	0	0.0	0.0	3	100.0	7.1
Total	38	90.5	100.0	4	9.5	100.0	42	100.0	100.0
Graduate Education									
Manufacturing	4	25.0	13.3	12	75.0	27.3	16	100.0	21.6
Service	15	51.7	50.0	14	48.3	31.8	29	100.0	39.2
Retail	8	33.3	26.7	16	66.7	36.4	24	100.0	32.4
Agriculture	1	100.0	3.3	0	0.0	0.0	1	100.0	1.4
Construction	2	50.0	6.7	2	50.0	4.5	4	100.0	5.4
Total	30	40.5	100.0	44	59.5	100.0	74	100.0	100.0

Table III presents a crosstabulaion to determine participants' familiarity with quality management practices. 6 local managers with high school education hardly at all are familiar with quality management practices. 31% of the local owners are somewhat familiar with quality management practices and 4.8% or 2 of the foreigners who have high school education indicated they are somewhat familiar with the practices. 42.9% of the Ghanaian entrepreneurs and 4.8% of the foreign with high school education are familiar with the practices and 2.4% of the local owners are very familiar with the

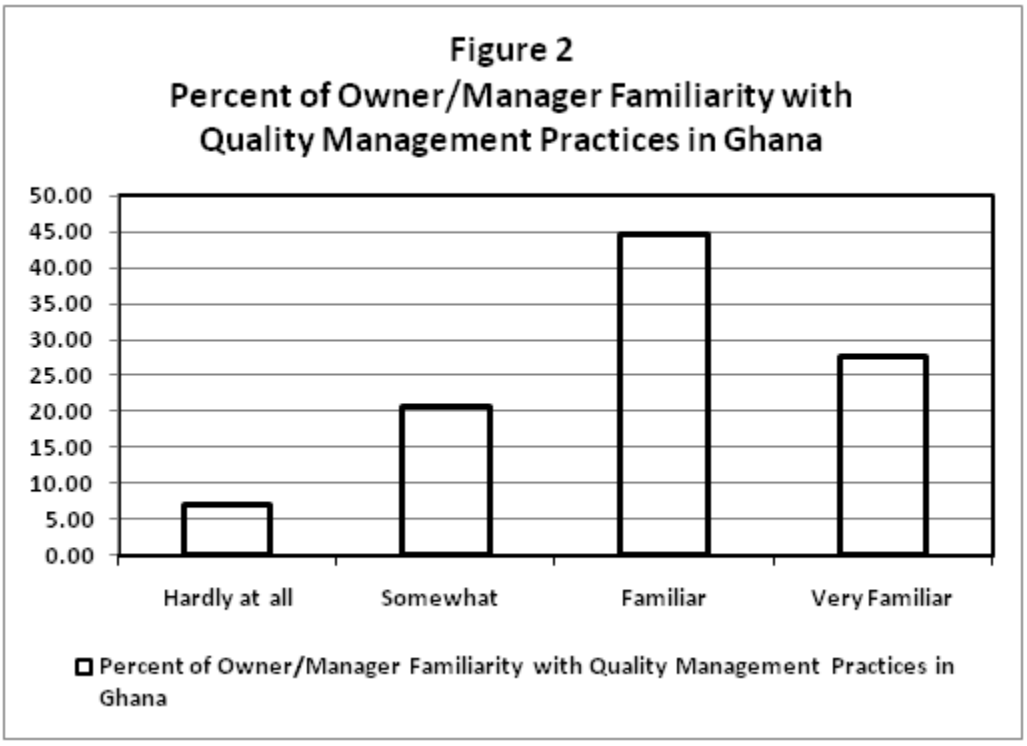
practice. With the graduates, 5.4% of the local and 6.8% of the foreigners are somewhat familiar with the practices. 23% of Ghanaian entrepreneurs are familiar whilst 20% of the foreign managers are familiar. 31.1% of the foreign entrepreneurs who are graduates are very familiar with quality management practices and 10.8% of the local managers who are graduates are very familiar with the practices. These results may explain why there is the perception that foreign managed firms do better than locally managed firms. But it also depends if these foreign managers do practice quality management and believe that quality management practices do actually improves firm performance.

Table III

Familiarity with quality management practices, Owner Type by Educational background of owner/manager Crosstabulation in Ghana

Educational Background of owner manager	Owner Type Ghanaian Entrepreneur			Owner Type Foreign Entrepreneur			Total		
Category	Freq.	Percent Row	Percent Column	Freq.	Percent Row	Percent Column	Freq.	Percent Row	Percent Column
Secondary Education									
Hardly at all Familiar	6	100.0	15.8	0	0.0	0.0	6	100.0	14.3
Somewhat Familiar	13	86.7	34.2	2	13.3	50.0	15	100.0	35.7
Familiar	18	90.0	47.4	2	10.0	50.0	20	100.0	47.6
Very Familiar	1	100.0	2.6	0	0.0	0.0	1	100.0	2.4
Total Count	38	90.5	100.0	4	9.5	100.0	42	100.0	100.0
Graduate Education									
Hardly at all Familiar	1	50.0	3.3	1	50.0	2.3	2	100.0	2.7
Somewhat Familiar	4	44.4	13.3	5	55.6	11.4	9	100.0	12.2
Familiar	17	53.1	56.7	15	46.9	34.1	32	100.0	43.2
Very Familiar	8	25.8	26.7	23	74.2	52.3	31	100.0	41.9
Total	30	40.5	100.0	44	59.5	100.0	74	100.0	100.0
Secondary Education & Graduate Education									
Hardly at all Familiar	7	87.5	10.3	1	12.5	2.1	8	100.0	6.9
Somewhat Familiar	17	70.8	25.0	7	29.2	14.6	24	100.0	20.7
Familiar	35	67.3	51.5	17	32.7	35.4	52	100.0	44.8
Very Familiar	9	28.1	13.2	23	71.9	47.9	32	100.0	27.6
Total	68	58.6	100.0	48	41.4	100.0	116	100.0	100.0

Figure 2 Percent of respondents familiar with quality management practices



To answer the research question as to whether the implementation and practice of quality management will have an impact on SMEs in Ghana, a question was asked in the questionnaire to seek the views of participants. It was measured on a 5 point scale with 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree and 5=strongly agree. The analysis revealed that participants have the strongest conviction that the implementation and practice of quality management by firms in Ghana will impact positively on all aspects of SMEs in Ghana. Table 4 below shows a descriptive statistics of the responses on how the implementation and practice of quality management will impact on SMEs in Ghana. The findings were that with respondents who have high school background, 45.2% of the local managers agree as well as 4.8% of foreigners with high school background that also agrees. With the same educational background, 45.2% of locals and 4.8% of foreign managers strongly agree. 2.7% of the foreign managers who are graduates disagree, whilst 27% of graduate foreign managers and 12.2% of local managers agree. 28.4% of graduate locals strongly agree with their foreign counterparts registering 29.7% strongly agreeing that the implementation and practice will impact on SMEs in Ghana.

Figure 3 Owner type and familiarity with quality management practices

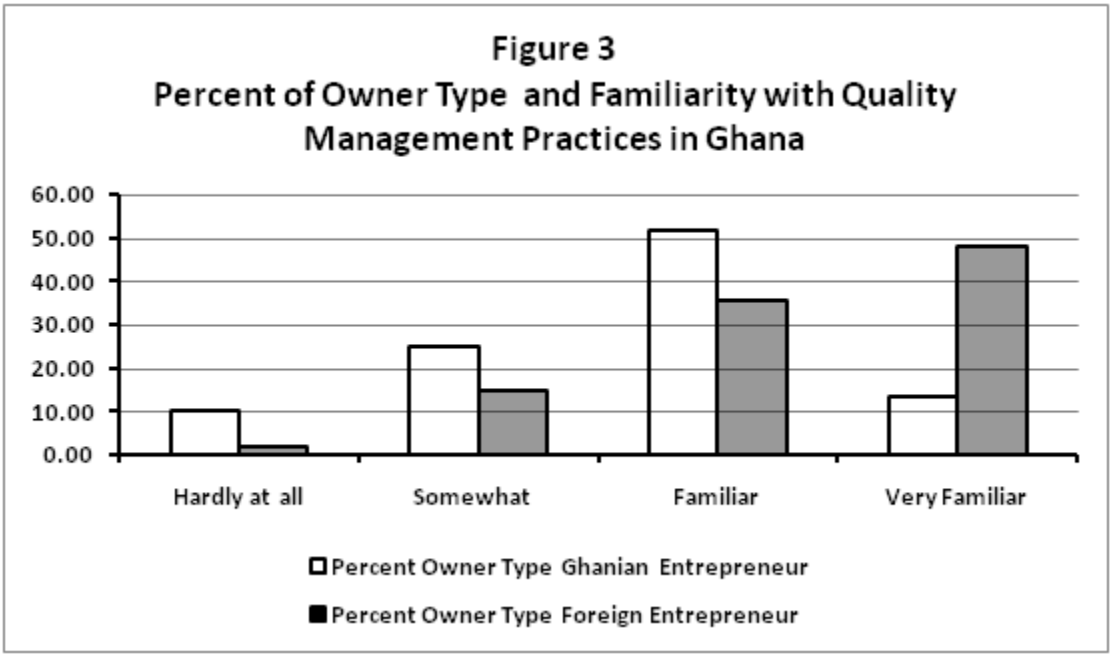


Figure IV shows extent of owners' level of education has on their familiarity with quality management practices. The figure reveals that respondents with high level of education are quite familiar with quality management practices than those with low level of education.

Figure IV presents a graphical view of the level of education and familiarity with QM practices.

Figure 4 *Level of education and familiarity with quality management practices*

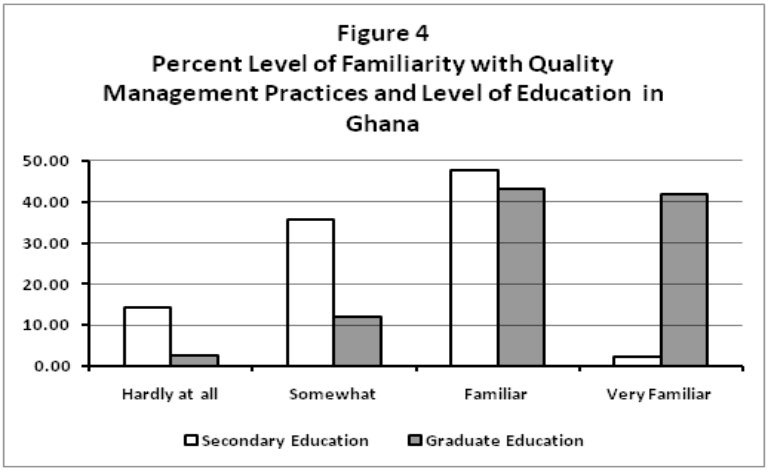


Table IV. Descriptive Statistics – Response on how the implementation and practice of quality management will impact on SMEs in Ghana.

Rating	Frequency	Valid Percentage	Cumulative Percentage
Disagree	2	1.7	1.7
Agree	50	43.1	44.8
Strongly Agree	64	55.2	100.0
Total	116	100.0	

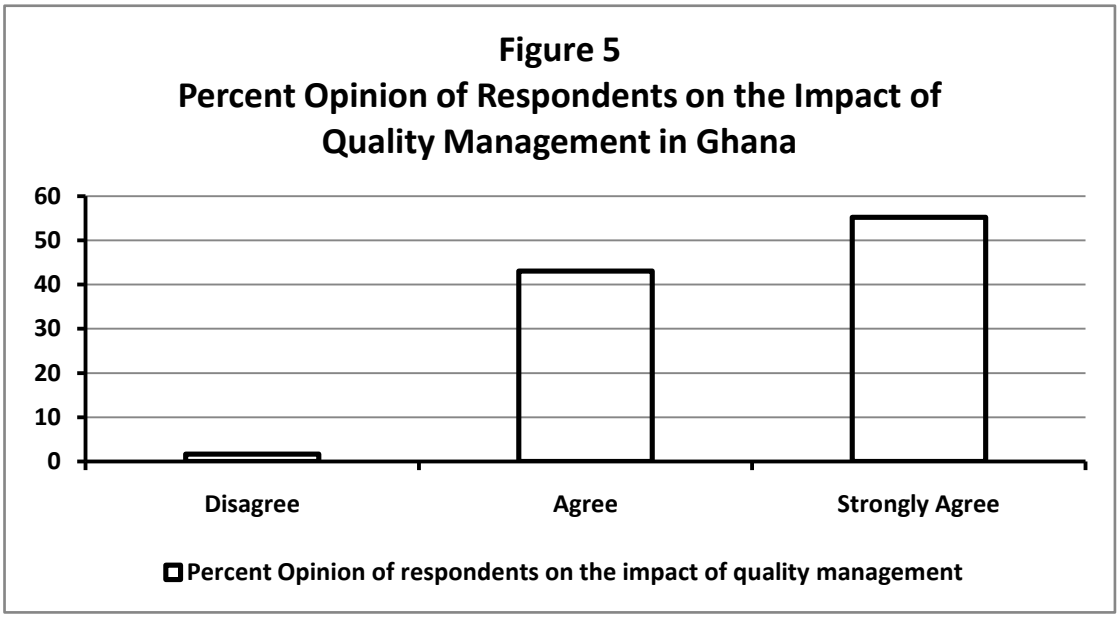
Where rating 2 indicates strongly disagree, score 4 indicates agree, and score 5 indicates strongly agree that the implementation of quality management practices will have a considerable impact on the growth and development of SMEs in Ghana

Table V shows a cross tabulation of owner type and educational background in relation to impact of QM on SMEs.

Table V. Familiarity with Quality Management Practices, Owner Type by Educational background of Owner/Manager Crosstabulation by Industry Type in Ghana

Educational Background of owner manager	Owner Type Ghanian Entrepreneur			Owner Type Foreign Entrepreneur			Total		
Category	Freq.	Percent Row	Percent Column	Freq.	Percent Row	Percent Column	Freq.	Percent Row	Percent Column
Secondary Education									
Agree	19	90.5	50.0	2	9.5	50.0	21	100.0	50.0
Strongly Agree	19	90.5	50.0	2	9.5	50.0	21	100.0	50.0
Total	38	90.5	100.0	4	9.5	100.0	42	100.0	100.0
Graduate Education									
Disagree	0	0.0	0.0	2	100.0	4.5	2	100.0	2.7
Agree	9	31.0	30.0	20	69.0	45.5	29	100.0	39.2
Strongly Agree	21	48.8	70.0	22	51.2	50.0	43	100.0	58.1
Total	30	40.5	100.0	44	59.5	100.0	74	100.0	100.0

Figure V shows a graphical presentation of the opinion of respondents on how QM will impact on SMEs in Ghana.



The study has once again proved that quality management practices will impact on firm growth and performance. It also supports the views of the respondents on the impact it will have on SMEs in Ghana.

Conclusion and Future Research

This study has revealed that quality management when implemented and practiced in Ghanaian small businesses will improve the performance of these businesses and help in the growth of SMEs. Quality it is said helps a firm gain competitive advantage; therefore the practice of quality management will help Ghanaian products gain competitive advantage over foreign products. This study has demonstrated that Ghana owner managers believe quality management is a key-contributing factor to firm growth and performance.

Though some owner managers may be familiar with quality management practices and its advantages and therefore would want to implement them, their employees may not know what they are. Communication is very essential in this regard. In the implementation, careful attention must be given to the human resource, leadership and customer focus variables. Also the measurement, analysis, and knowledge management variables must not be overlooked, as careful analysis of customer's information will direct the firm on its production policy.

Such programs on quality management must be practically based for better understanding of its implementation. For instance, planning has been accepted as the first of four essential managerial tasks. In a research finding by Perry (2001), it concluded that failed firms had little planning than non-failed firms.

Planning and control are important elements in management that must not be overlooked. Potts (1977) and Robinson (1982) have suggested that SMEs face a growth problem by their inability to prepare and implement planning and control systems. Wijewardena et al. (2004), in their results findings concluded that 'planning and control sophistication is an important contribution to the sales performance in Manufacturing SMEs'.

The products going out must be of international standard. It is only through the implementation and practice of quality management that firms will see the need to produce quality products. There is therefore the need for the creation of an entity solely responsible for quality and quality standards. Such an entity can be separate from the Ghana Standards board. Its responsibility should be assisting firms in the implementation and practice of quality management and the production of quality products. The Government of Ghana must institute a national quality award where quality criteria will be set for firms. This should be a government sponsored and in partnership with businesses and stakeholders.

Future research should focus on quality management practices and performance in specific industries.

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USE OF LOGISTIC STRATEGY AMONG SMALL MANUFACTURING FIRMS IN GHANA

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ABSTRACT

A greater percentage of business activities in Ghana take the form of family owned small business type. Recent steps taken by Ghana toward globalization have allowed trade agreements that have exposed its firms to global pressure and competition. In developed countries, small businesses offset these challenges by lowering their cost, improving quality and adopting sophisticated high technology. Another way is to implement logistic strategies in order to overcome these challenges. The purpose of this paper is to explore the role and use of logistic strategies, integration, competitiveness, and warehousing by small businesses in Ghana and to study their effect on income. We focused on the extent to which Ghanaian businesses are adopting logistic strategies given global requirements. Our results showed that logistic strategies and warehousing are not significantly used by Ghanaian firms, which could render them competitively disadvantaged given the current global challenges. In addition, these two factors had a marginal effect on income.

Keywords: Logistic Strategy; Manufacturing, Ghana

Introduction

Studies about logistic strategies, integration, competitiveness and warehousing expanded with the emergence of new technologies, and accelerated with globalization. Firms gained access to new markets and realized the need for greater production efficiency. In a study, Thohen and Jagdev, (2001) argued

that it is unusual for a firm to perform the complete product cycle alone; which involves the development and design, production, assembly, marketing, delivery, and after-sale service. Porter (1985) argued that competitive advantage is assessed by evaluating the firm's five primary activities, which are inbound logistics, operations, outbound logistics, marketing and sales, and service. Sweet (2001), on the other hand, developed the concept of "strategic value configuration logics", which consists of value-adding, value-extracting, value-capturing, and value-creating. He argued that the top priority of the new economy enterprises is to manage fundamental strategic value configuration well — and it should be possible to predict the firms' logistic performance by evaluating their strategies. McGinnis and Kohn (2002) indicated the significance of marketing orientations on the logistics strategy.

The success of firms depends on strategic alignment and collaboration with other firms that have complementary competencies (Svensson, 2003); as the complexity of products and the demand for technologies increase (Momme and Hvolby, 2002), consumers' demand for differentiated and better quality products increase (Piachaud, 2002). It is crucial for a manufacturing firm to position itself in the supply chain in order to create the best possible competitive advantage. This strategic positioning is set by deciding on activities that should be carried out internally along with other activities that should be carried out externally (Baines et al., 2005).

Enterprises use different complex supply chain decisions and activities to achieve their goals. Mapping the relationships that exist among the factors that affect the strategy assists the analysis of the issues (Browersox et. el, 1989). Successful implementation of strategy requires specific functional strategies such as production, marketing, and logistics to complement each other and work together as one major strategy for the firm (Chow, et al., 1995). Only a few studies have tested the implementation of these strategies in developing countries. This study will explore the use of logistic strategies by Ghanaian manufacturing firms and will test the effectiveness of logistic coordination by using three decision-making areas: (1) logistic integration strategy, (2) competition and marketing strategy, and (3) warehousing strategy as the predictors.

Ghana: An Overview of the Economy

Ghana an independent republic with a democratically elected government lies on the Gulf of Guinea and forms part of the West African Region. Covering an area of 238,500 km^2 (92,085 sq mi), it is bordered in the east by Togo, Cote d'Ivoire to the west, Burkina Faso to the north and the Gulf of Guinea (Atlantic Ocean) to the south. Ghana has a population of 21, 029 853 (a 2007, estimate) with the capital city, Accra (a population of 2,096,653). Other major towns are Kumasi and Tamale and the ports of Cape Coast, Tema and Takoradi. The official language is English while over 100 native languages are spoken. The local currency is the Cedi.

After a decade of structural adjustment reform, Ghana has established a significant record of economic growth, expanding export industries (with cocoa and gold being the major export commodities), an active and growing stock market and rapidly increasing private investment opportunities. In the late

1990s Ghana embarked on a program to privatize a number of state-owned enterprises. Since the initiation of this program, there has been boom in private industries especially in the area of Information Technology and mobile telecommunication.

Ghana remains heavily dependent on international financial and technical assistance. The domestic economy continues to revolve around subsistence agriculture, which accounts for about 36% of GDP. Although Ghana's economy is based mainly on subsistence agriculture, the industrial sector does play a part by producing goods locally and accounting for about 25% of GDP with services contributing 40% of GDP. Emerging industrial sector products include cassava, fruits and cocoa by-products.

The mining industry in Ghana is, however, the key sector in the economy. Gold remains central to the Ghanaian economy although diamonds, manganese, and bauxite are also mined. High-quality sand in the Tarkwa mining area also provides the basis for a small but important glass industry. Cement factories have been developed at Tema and Takoradi. In addition to its oil industry, Ghana has an active chemicals industry. It is also one of the larger markets in the lubricants industry of the West African region.

Ghana exports timber and pineapples, the most important export crop being cocoa. The Ghana Cocoa Board manages the earnings from the export of cocoa beans. Its major trading partners include neighboring Nigeria, Germany, Switzerland, France, the Netherlands, the United Kingdom, Japan and the United States. Ghana relies on grants from some of these countries to fund areas of development. The main export commodities in Ghana include cocoa beans and products, copra, cut diamonds, food ingredients, fruit, gold, manganese, timber, tea and coffee, while the main imports include fuel, intermediate goods, machinery, petroleum products, tobaccos, chemical products, consumer goods and crude oil.

Apart from traditional industries such as food processing, Ghana also has a large number of established small and medium to large-sized manufacturing enterprises. Most of the small to medium sized companies in Ghana produce goods, such as furniture, latex foam products, sachet drinking water, locally brewed alcoholic beverages etc., which are primarily sold on the local market. The large-scale manufacturing sector includes textiles, drinks, food, plastics and aluminum processing companies. Most of these are owned and managed by foreigners, such as the Lebanese, Indians and Chinese companies. Some of the large industries, such as Unilever and Volta Aluminum Company (Valco) are owned by multinationals. The Ghana Free Zones Board **(**GFZB) promotes the processing and manufacturing of commodities through the establishment of export processing zones. It also encourages the development of commercial and service activities within the ports of Ghana. The Limited Liability Company (LLC) is the most common structure utilized by businesses, particularly foreign investors and others who want to limit their liabilities. It is thus noteworthy here that most of the companies surveyed in Ghana for this study are LLCs.

Appendix 1 lists the questions concerning the logistic integration, integration, competitiveness and warehousing used in our survey. These items have been tested in previous research (Bowersox et, el, 1989). We pose the following research questions:

1. What is the level of logistic strategy, integration, competitiveness and warehousing that is used by Ghanaian manufacturing firms?

2. How do business logistic strategy, integration, competition and marketing, and warehousing of Ghanaian manufacturing firms interact and affect income?

Methodology

A questionnaire was developed to collect data for the study. A logistics survey consisting of four sections or four different sets of scales (a) logistics integration – 10 items, (b) logistics strategies and priorities – 10 items, (c) company competitiveness- 4 items, and (d) private warehousing investment decisions – 7 items was the source of the data for this study. Most of the strategy related questions were structured in a Likert scale model (ordinal level data) with 1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, and 5 = strongly disagree, as the choices. The remaining sets of questions were ratio level variables.

The study's participants were Ghanaian manufacturing firms. A random sample of a hundred (100) businesses located in the Accra metropolitan area was selected from the Directory of Manufacturers and contacted as potential respondents to our questionnaire. Because of budget and time constraints, the "Drop-off Pick-up" approach was adopted to collect this data. To maximize the response rate, we maintained contact through personal visits and phone calls to encourage the completion of the survey questions which were hand delivered. Subsequently, a response rate of 42% was achieved. Of the 42 firms that responded, about 21% had 5-20 employees, 26% had 21-100 employees, 21% employed 101-300 workers and 30% had more than 300 employees. All the respondents had at least a high school degree and served as an owner, a supervisor, manager or president of the organization in question.

The response variable — logistic strategy — is found by taking the mean values entered by firms in this section of the survey. Table 1 displays descriptive statistics of the response variable logistic integration. The survey responses were on a Likert scale from 1 to 5 (1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree and 5 = strongly disagree). Response 1 is the minimum value, which indicates heavy use of strategy, while option 5 is the maximum value representing light use of strategy. In the survey, 1.54 was the minimum value reported by firms and 2.28 was the maximum value reported. The mean is equal to 2 and the median is equal to 2.0; both values are equal with a standard deviation of 0.2. Checking the observations, few enterprises reported low values, which indicate that logistic strategies are not clearly visible. The histogram and probability plot displayed a relatively bell shape with no indication of outliers.

Table 1 – Use of Logistic Strategy

Variable	N	Mean	St. Dev	Min	Mode	Median	Max	Items
log strategies	42	2.00	0.2	1.54	2.0	2.0	2.28	10

Table 2 displays the descriptive statistics for the level of integration variable. There are ten questions in this section to evaluate the level of integration. The minimum value found is 1.73 with a maximum value of 2.38. The highest reported value was only 2.38, which is slightly above the average; it means that the surveyed firms do not have a clear integration strategy. The median is 2.0, and the mean is 2.0 with a standard deviation of 0.20. The approximately equal values of mean and median indicate a relatively symmetric distribution in the data.

Table 2 – Level of Logistic Integration

Variable	N	Mean	St. Dev	Min	Mode	Median	Max	Items
log strategies	42	2.01	0.2	1.73	2.0	2.0	2.38	10

Table 3 below displays the descriptive statistics of the Company/Division Competitiveness variable, which deals with competition and market strategy. There are only four questions in this section to evaluate competition and market strategy. The minimum value found is 1.69 with a maximum value of 2.64. The highest reported value of 2.64 means that none of the surveyed firms consider themselves weak. The median is 2.14, and the mean is 2.14 with a standard deviation of 0.4. The approximately equal values of mean and median indicate a relatively symmetric distribution in the data.

Table 3 - Level of Competition in the Market

Variable	N	Mean	St. Dev	Min	Mode	Median	Max	Items
Comp & Market	42	2.14	.4	1.69	2.0	2.0	2.64	4

Private Warehousing Investment Decisions variable is the last continuous independent variable. The warehousing variable evaluates the importance of private warehousing. The variable was created by taking the mean of the answers to seven questions. Table 4 displays a minimum value of 2.19 and a maximum value of 3.04. The median found was 2. The mean was 2.5 with a standard deviation of 0.34. These relatively high values reflect the marginal effect of warehousing as perceived by the Ghanaian firms.

Table 4 –Warehousing strategy

Variable	N	Mean	St. Dev	Min	Mode	Median	Max	Variable
warehouse	42	2.5	0.34	2.19	2.0	2.0	3.04	7

In the second stage of the study, Logistic Regression is used in two separate models to assess the relationship between a dependent, categorical variable, and various predictors. In the first model, the relationship between income (as the dependent variable) and the four groups is tested; these groups are Logistic Strategy, Logistic Integration, Competition/Marketing, and Warehousing. The income variable is recoded as a categorical response with only two values. The values are (0) three million dollars and under or (1) greater than three million.

The analysis is done by using the forward stepwise procedure of logistic regression. This procedure allows only those variables that exhibit significant predictive power to enter into the model. At a level of significance of 5%, the effect of each of the four groups is tested independently. The following table is the summary output:

Table 5 – Significance of the Factors

Factors	Variables in the Model	Predictive Effect	Alpha 5%
Logistic Strategy	S02, S04, S06	76.2%	Significant
Logistic Integration	0	0	Not Significant
Competition/Marketing	0	0	Not Significant
Warehousing	W04	73.8%	Significant

The variables that exhibited significant predictive power in the logistic strategy and warehousing were the following:

1. Logistics Strategy:

Variables remaining in the model include:

1.1 A primary objective of logistics in my company/division is to gain control over activities that result in purchasing, manufacturing, and distribution costs (S02).

1.2 In my company/division, management emphasizes achieving coordinated physical distribution to customers served by several business units (S04).

1.3 In my company's logistics facility, there is the coordination of several business units in order to provide competitive customer service (S06).

The model correctly classified a small income group (84.6%) and misclassified the same group (15.4%). With respect to the large income group, the model correctly classified 62.5% and misclassified 37.5%. The overall hit ratio (average) is 76.2%, which means that the model correctly classified 76.2% of the cases and misclassified 23.8% of them.

Table 6 – Strategy

	Predicted – 0	**Predicted - 1**	**Correctly classified %**
Observed – 0	22	04	84.6%
Observed – 1	06	10	62.5%
Overall Hit Ratio			**76.2 %**

2- Warehousing

One variable remained in the model, which was W04 "My company/division explicitly considers subjective, hard to measure, service issues when considering whether to invest in private warehousing."

Table 7 – Warehousing

	Predicted - 0	**Predicted - 1**	**Correctly classified %**
Observed – 0	23	03	88.5%
Observed – 1	08	08	50.5%
Overall Hit Ratio			**73.8 %**

In this case, the model correctly classified a small income group (88.5%) and misclassified 11.5% of the same group. Of the large income group, the model correctly classified 50.5% and misclassified 49.5%. The overall hit ratio (average) is 73.8%, which means that the model correctly classified 73.8 % of the cases and misclassified 26.2% of them.

3- Four Factors

Two variables remained in the model, which were W04 "My company/division explicitly considers subjective, hard to measure, service issues when considering whether to invest in private warehousing" and S06 "In my company's logistics facility, there is the coordination of several business units in order to provide competitive customer service."

Table 8 – Four Factors

	Predicted - 0	**Predicted - 1**	**Correctly classified %**
Observed – 0	19	07	73.1%
Observed – 1	05	11	68.8%
Overall Hit Ratio			**71.4 %**

The model correctly classified 73.1% of the small income group and misclassified 26.9% of the same group. On the other hand, while 68.8% of the large income group was correctly classified, the model misclassified 31.2% of this group. The overall hit ratio (average) is 71.4%, which means that the model correctly classified 71.4 % of the cases and misclassified 28.6% of them.

Reliability of the model:

Testing the reliability of the model was done by using two measures. The coefficient of determination (R^2) represents the proportion of the total variation that is explained by the independent variables and the test of the significance of the hit ratio was achieved by constructing the following Z test statistic:

$$Z\text{-test} = [P - 0.5] / [0.5 (1 - 0.5)/N]^{1/2}$$

Where N is the sample size and P is the overall hit ratio. The following is the summary output of both tests of reliability:

Table 9- Reliability Tests

Group	**Hit ratio**	**Significance**	**$Z_{calculated}$**	**Critical Value**	**R^2**
Log. Strategies	76.2%	0.003	3.965	1.65	38%
Warehousing	73.8%	0.037	3.084	1.65	13.4%
All Factors	71.4%	0.006	2.773	1.65	29.6%

The three tests exhibited hardly any significant results (low validity), which is reflected by both the $Z_{calculated}$ and R^2. The hardly significant results (low validity) indicate that there are possibly other variables affecting income not captured by the model. The highest reported reliability value on both scales (i.e R^2 and $Z_{calculated}$) was that of the logistic strategies factor, which explained 38% of the income variations. It included three variables (S2, S4, S6) but when added to other factors, the explained variations dropped to 29.6% with one logistic variable (S6) remaining in the model along with one variable from the

warehousing component of the survey (W4). This could be attributed to the correlation between the two factors, a unique way in which Ghanaian businesses integrate warehousing as the major factor of logistic strategy.

Conclusion

The implications of results of this exploratory study are noteworthy. It sheds light on the unique way in which logistic strategies are applied by Ghanaian firms. Our results showed a significant impact of warehousing and logistic strategy on the level of income. On the contrary, they also highlighted the insignificance of competitiveness and logistic integration among Ghanaian firms. We infer that in spite of the heightened global pressure on firms, Ghanaian firms feel sheltered from the heat of globalization, which is a major driver for setting logistic strategies. If this trend is not reversed, the marginal profits of Ghanaian firms will not only be vulnerable but their survival will be questionable with the intrusion of foreign firms endowed with better logistic strategies.

In conclusion, we recommend that further studies be conducted to explore the unique features of Ghanaian firms to better help assess their performance in the global environment. It is possible that some of the insignificant results realized also stem from the relatively small sample size of 42 firms used in the study. A larger sample size would invariably capture and explain more variation in the study.

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APPENDIX - Specific Integration Issues	Variables
I expect increased emphasis on integrated computer systems/electronic interchange between my firm and customers, suppliers and other channel members	I1
Much progress has been achieved in my company regarding integrated computer systems/electronic data interchange with customers suppliers and other channel members	I2
The need for closer coordination with suppliers, vendors and other channel members has fostered better working relationships among departments within my company	I3
In my company or division logistics activities are coordinated effectively with customers, suppliers and other channel members	I4
Achieving increased levels of customer service has resulted in increased emphasis on employee development and training.	I5
The customer service program in my company or division is effectively coordinated with other logistics activities	I6
The customer service program in my company or division gives us a competitive edge relative to our competition.	I7
Computers in the logistics area are increasingly communicating with computers in other areas of my firm.	I8
Computers in the logistics area are increasingly communicating with suppliers, customers, and other channel members	I9
My company/division responds quickly and effectively changing customer or supplier needs compared to our competitors	I10
My company/division develops and markets new products quickly and effectively compared to our competitors.	C1
In most of its markets my company/division is very strong competitor, moderately strong competitor or a weak competitor.	C2
I expect increased emphasis on integrated computer systems/electronic interchange between my firm and customers, suppliers and other channel members	I1
Much progress has been achieved in my company regarding integrated computer systems/electronic data interchange with customers suppliers and other channel members	I2
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The customer service program in my company or division gives us a competitive edge relative to our competition.	I7
Computers in the logistics area are increasingly communicating with computers in other areas of my firm.	I8
Computers in the logistics area are increasingly communicating with suppliers, customers, and other channel members	I9
My company/division responds quickly and effectively changing customer or supplier needs compared to our competitors	I10
My company/division develops and markets new products quickly and effectively compared to our competitors.	C1
In most of its markets my company/division is very strong competitor, moderately strong competitor or a weak competitor.	C2

ENTREPRENEURIAL POSTURES AND PSYCHOLOGICAL TRAITS: IS ENVIRONMENT AN AMPLIFIER?

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ABSTRACT

Environmental factors are important influences in the success of an entrepreneurial venture. Environmental factors such as supportive environments may have moderating influences on the relationships between psychological traits and entrepreneurial styles. A cross-sectional study was conducted among entrepreneurs in a capitol city located in a Southern Metropolitan Statistical Area (SMSA). Results of the study suggest significant positive correlations between psychological traits and entrepreneurial styles. Findings also suggest that supportive environment amplifies the relationships of psychological traits and entrepreneurial styles. Overall, research findings have a number of theoretical and managerial implications relative to risk taking behavior, innovativeness, proactiveness, and competitive aggressiveness in managing small business ventures.

Introduction

The study of entrepreneurship is a multidimensional process that calls for further and continuing research studies. Prior research studies have been filled with inconsistency and controversy relative to the appropriate definition of an entrepreneur and the relevance of personality traits study in entrepreneurship (Beugelsdijk 2007; Jaafar & Abdul-Aziz 2005; Aldrich and Martinez 2001; Gartner 2001; Lee and Peterson 2000; Lyon, Lumpkin & Dess 2000; Shane & Venkataraman 2000; Aldrich and Kenworthy 1999; Busenitz & Barney 1997; Lumpkin & Dess 1996; Gartner 1988, Carland et al. 1984; Cole 1969; Knight 1921).

The psychological traits approach to entrepreneurship has been criticized by a number of researchers as unsatisfactory and questionable (Gartner, 1988; Aldrich & Zimmer, 1986, Low & Macmillan, 1988) in explaining entrepreneurial behavior and performance. They concluded that there are no psychological characteristics that predict who will attempt to, or be, a successful entrepreneur. As Low and MacMillan (1988, p. 148) stressed, entrepreneurs tend to defy aggregation. They reside in the tails of the population distribution; and though they are expected to differ from the mean of the society, the nature of their differences is not predictable. As a result, it seems that any attempt to profile entrepreneurs solely along the psychological characteristics may be overly simplistic. In light of the aforementioned criticism including the suggestion made by Gartner (1988, p. 57) and Vesper (1980) that entrepreneurship should be analyzed from the perspective of what an entrepreneur does and not what he is, and that creation of an organization is a complex process and the outcome of many influences. Thus, the dual purpose of this empirically based study is first, to explore whether psychological traits –

need for achievement, locus of control, tolerance for ambiguity, and risk taking propensity are correlates of entrepreneurial postures. Second, whether supportive environments amplify the relationships between entrepreneurial postures and psychological traits.

Literature Review

Carland et al. (1984), in an attempt to provide answers to the questions that: 1) if entrepreneurs exist as entities distinct from small and large organizations and 2) if entrepreneurial activity is a fundamental contributor to economic development, on what basis may entrepreneurs be separated from non-entrepreneurial managers in order for the phenomenon of entrepreneurship to be studied and understood? After reviewing literature of small business and entrepreneurship and using Schumpeter's work (1934), they defined an entrepreneur "as an individual who establishes and manages a business for the principal purposes of profit and growth. The entrepreneur is characterized principally by innovative behavior and will employ strategic management practices in the business" (p. 158). This theoretical piece distinguished the entrepreneur from a small business owner. Carland et al. also defined a small business owner as "an individual who establishes and manages a business for the principal purpose of furthering personal goals. The business must be the primary source of income and will consume the majority of one's time and resources. The owner perceives the business as an extension of his or her personality, intricately bound with family needs and desires". This definition recognized the overlap between small business owner and entrepreneur but provided additional support to Schumpeter's characterization of entrepreneurship as innovation oriented.

Entrepreneurial Postures

Entrepreneurial organizations as defined by Covin and Slevin (1991, p.2) are organizations with entrepreneurial postures. Organizational postures are organizations which engage in product-market or technological innovation, risk taking behavior, and proactiveness, and these particular behavioral pattems are recurring. These patterns pervade the organization at all levels and reflect the top managers' overall strategic philosophy on effective management practice. Covin and Slevin (1989); Ginsberg (1985); Lumpkin and Dess (1996); Morris & Paul (987); Schafer (1990) advanced Schumpeter's (1934, 1942) definition and they defined innovativeness as the firm's propensity to engage in new idea generation, experimentation, and research and development activities. This includes the development and enhancement of products and services and new administrative techniques and technologies for performing organizational functions. Lumpkin and Dess (1996) categorize innovation as either product-market or technological. Miller and Friesen (1978) suggest that product-market innovation focuses on product design, market research, and advertising and promoting. Maidique and Patch (1982) suggest that technological innovation is comprised of product and process development, engineering, research, and an emphasis on technical expertise and industry knowledge.

Venkatraman (1989) suggests that proactiveness refers to processes aimed at anticipating and acting on future needs by seeking new opportunities, introducing new products and brands ahead of competition; and strategically eliminating operations that are in the mature or declining stages of the life cycle. Thus, proactiveness requires a desire and willingness to think and initiate actions to answer future situations and threats. Proactiveness is critical to entrepreneurial success because it suggests a forward-looking perspective that is accompanied by innovative activity.

The concept of risk taking behavior has long been associated with entrepreneurship. Early definition of entrepreneurship centered on the willingness of entrepreneurs to engage in the calculated business-related risk (Brockhaus 1980). In the 19th century, John Stuart Mill argued that risk-taking was a paramount attribute of entrepreneurs. This view of entrepreneurs as risk takers continued to gain support till the twentieth century. McClelland (1961, p.210) accentuated the support with his postulation that "Practically all theorists agree that entrepreneurship involves, by definition, taking risks of some kind". Risk taking appears to be one of the most distinctive features of entrepreneurial behavior, since creating new ventures is by definition a risky business.

Linking the relationship between psychological traits and entrepreneurial postures is imperative for theoretical and empirical reasons, because entrepreneurs with a certain psychological traits may have a tendency to exhibit certain degree of entrepreneurial posture and showing this tendency may provide benefits to the organization. In prior research studies, achievement need, tolerance for ambiguity, risk taking and locus of control were analyzed with respect to entrepreneurial characteristics and were identified as correlates of being or desiring to be an entrepreneur (Ahmed, 1985; Begley& Boyd, 1987; Bonnett & Furnham, 1991). Prior research findings related to psychological traits have been corroborative and thus this study is aimed at providing additional insights and understanding to the relationship between psychological traits and entrepreneurial postures. In the subsections that follow, some of the most researched psychological traits will be discussed and how they are related to entrepreneurial postures.

Need for Achievement

In McClelland (1961), *The Achieving Society*, the need for achievement trait has been empirically linked to entrepreneurial activity. The need for achievement is defined as a tendency to choose and persist at activities that hold a moderate chance of success or a maximum opportunity of personal achievement satisfaction without the undue risk of failure. From diverse samples of business executives, the author's findings revealed that senior marketing managers have the highest need for achievement. He posited that needs are learned and therefore culturally, not biologically determined; and some cultures produced more entrepreneurs because of the socialization process that creates a high need for achievement.

In a longitudinal analysis of the need for achievement scores of college freshmen, McClelland (1965) concluded that a high need for achievement is a predictor of entrepreneurship and is based on influences of childhood and adult training and experiences. McClelland's work was initially influenced by Murray's (1938) studies in the development of his Need for Achievement Theory (Fineman, 1977). McClelland shared with Murray the belief that analysis of fantasy is the best way to assess motives, which are primarily based on unconscious state. Through the usage of the Thematic Appreception Test (TAT), which requires the writing of imaginative stories by subjects in response to a set of pictures, the stories were content analyzed for achievement imagery to obtain an n Ach score by the author. Through the correlation studies in the laboratory, McClelland determined that those high in n Ach, as measured by the TAT, tended to exhibit an original five behavioral traits and was reduced to three: (1) Takes personal responsibility for finding solutions to problems; (2) Sets moderate achievement goals and takes calculated risks; and (3) Wants concrete feedback regarding performance. McClelland conducted a number of studies demonstrating that high n Ach and the subsequent manifestation of the above behaviors correlated strongly with entrepreneurial success (McClelland, 1961, 1965a).

A number of studies suggest that need for achievement is higher in company founders, compared to managers (Begley & Boyd, 1987; Miner, Smith & Bracker, 1989). It is also related to company growth (Miner et al.1989). Such findings that relate the level of need for achievement of the founders and the financial growth of the organization may come from a relationship between the psychological traits of founders and the levels of entrepreneurial orientation they exhibit.

Internal Locus of Control

Rotter 1966 defined Locus of Control as an individual's perception about the underlying main causes of events in his/her life. Or, more simply: Individual believes that his/her behaviour is guided by his/her personal decisions and efforts (internal); or as unrelated to his or her actions and is guided by fate, luck, or other external circumstances (external). People with internal locus of control believe that they can control what happens in their lives. On the other hand, people with external locus of control tend to believe that most of the events in their lives result from luck, being at the right place at the right time, and the behaviors of powerful people. Research indicates that individuals with internal locus of control often have a more expressed need for achievement (Brockhaus 1982; Lao 1970; Gurin et al 1969).

In an empirical study conducted by Khan and Manopichetwattana (1989) they addressed the proposition whether the characteristics of innovative and non-innovative small firms have significant differences. Their sample was comprised of 50 manufacturing small businesses in the Texas area using cluster and correlational analyses to analyze the data. They found a positive relationship between internal locus of control and innovation. Boone, Debrabander and Van Witteloostujin (1996) empirical research investigation focused on the furniture industry with a sample comprised of small firms and

family owned small businesses, they were interested in getting at whether chief executive officers or top management team internality had a positive effect on organizational outcomes. Replicating previously tested hypotheses, they found internal locus of control to be associated with company performance. Their findings corroborated prior study findings of (Begley and Boyd 987; Bonnett and Furnham 1991, Nwachukwu 1995) that internal locus of control is an important entrepreneurial psychological trait.

Tolerance for Ambiguity

Budner (1962) defined tolerance for ambiguity as the "tendency to perceive ambiguous situations as desirable," whereas intolerance for ambiguity was defined as "the tendency to perceive … ambiguous situations as sources of threat" (p. 29). An ambiguous situation is one in which the individual is provided with information that is too complex, inadequate, or apparently contradictory (Norton, 1975, p. 607). The person with low tolerance of ambiguity experiences stress, reacts prematurely, and avoids ambiguous stimuli. On the other hand, a person with high tolerance of ambiguity perceives ambiguous situations/stimuli as desirable, challenging, and interesting and neither denies nor distorts their complexity of incongruity.

Frenkel-Bruswik (1948) reported a study comprised of 100 adults and 200 California children from ages 9 to 14 years old in which the researcher looked at their attitudes to ethnic prejudice and argued that tolerance for ambiguity is to be conceived as "a general personality variable relevant to basic social orientation" (p. 268). Entrepreneurial managers are generally believed to tolerate more ambiguity than conservative managers because entrepreneurial managers confront less-structured, more uncertain set of possibilities (Bearse 1982), and actually bear the ultimate responsibility for the decision (Gasse 1982, Kilby 1971).

Theoretically, people who best tolerate ambiguity are those who obtain superior results if their strategic objective is to pursue growth. Entrepreneurs who seek to increase market shares in their respective industries face more uncertain phenomenon than those who seek to increase profitability. Because the strategy utilized to implement increase in market share is based on conditions of uncertainty, which requires a greater tolerance of ambiguity. Thompson (1967) stipulates that in a determinist world, the higher the number of external dependencies faced by firms, the greater the degree of uncertainty.

Dollinger (1983) with a sample size of 79 entrepreneurs using Budner's scale, he found that entrepreneurs scored high in the tolerance for ambiguity test. The results showed that tolerance for ambiguity trait is positively related to entrepreneurial activity. Gupta and Govindarajan (1984) data from 58 strategic business units revealed that greater marketing/sales experience, greater willingness to take risk, and greater tolerance for ambiguity, on the part of strategic business unit general manager, contribute to effectiveness in the case of "build" strategic business units; but hamper it in the case of "harvest" strategic business units. Carland and et al. (1989) research revealed that people who best tolerate ambiguity are also the most innovative. Tolerance for ambiguity is reported to relate to personal creativity (Tegano, 1990) and the ability to produce more ideas during brainstorming (Comadena, 1984).

These findings suggest that creativity and innovativeness requires a certain degree of tolerance for ambiguity. The ability to tolerate ambiguous situations may also be positively related to the risk-taking behavior of the entrepreneur. Risk-taking requires a certain degree of tolerance for ambiguity. In addition, research indicates that individuals with intolerance for ambiguity tend to perceive higher degrees of risk under the same circumstances (Tsui 1993). Proactive entrepreneurs do not abide by traditional ways of the status quo, but they continually question it in an attempt to improve and devise better operational methods and managerial styles.

Risk Taking Propensity

The perceived probability of receiving rewards associated with the success of a situation that is required by the individual before he or she will subject himself/herself to the consequences associated with failure, the alternative providing less reward as well as less severe consequences than the proposed situation" (Brockhaus, 1980, p.513). The usual interpretation of a risk taker is someone who in the context of a business venture pursues a business idea when the probability of succeeding is low (Smith-Hunter, Kapp, and Yonkers, 2003). In a study conducted by MacCrimmon & Wehrung (1990) drawing on a sample of five hundred chief executives of businesses to determine the validity of common stereotypes of who takes risks and who avoids risks using factor and linear discriminant analyses, the researchers found that the most successful executives were the biggest risk takers; the most matured executives were the most risk averse.

Begley and Boyd (1987) found that risk taking had a curvilinear relationship with performance in entrepreneurial firms. Their findings suggested that entrepreneurs exhibiting moderate levels of risk taking would outperform those exhibiting either very high or very low levels of risk. The researchers concluded that "risk taking has a positive effect on return on asset" (p. 89). Palich and Bagby (1995) found that entrepreneurs tend to categorize business situations as possessing less risk than non-entrepreneurs. In other words, "entrepreneurs may not think of themselves as being any more likely to take risks than non-entrepreneurs, but they are nonetheless predisposed to cognitively categorize business situations more positively" (p. 426).

Busenitz (1999) also argued that entrepreneurs tend to view situations more favorably than non-entrepreneurs, and his results indicated that entrepreneurs do indeed use representativeness more in their decision making and are more overconfident than managers in large organizations" (p. 325).

In a study conducted by Xiao, Alhabeeb, Hon and Haynes (2001) using data from the 1995 Survey of Consumer Finances with an approximate sample size of three thousand to examine risk tolerance level of family business owners and non-owner's of business; found that family business owners were more tolerant than non-business owners.

In an earlier study that was conducted by Miller and Toulouse (1989) with a sample comprised of 97 firms from the province of Quebec in which the authors were interested in determining the relationships that three aspects of the chief executive's (CEO) personality have with the strategies, structures, decision-making methods and performance of their firms. They found that chief executive officer's flexibility was associated with niche strategies, simple, informal structures, and intuitive, risk-embracing decision-making.

Entrepreneurial risk behavior has been examined in the literature by both the personality trait approach (McClelland 1961, 1965; Brockhaus 1980, 1982; Brockhaus and Horowitz 1986; Sexton & Bowman 1985; Begley and Boyd 1987) and cognitive approach (Kirzner 1973, 1979; Bird 1988; Palich and Bagby 1995; Busenitz 1999). . There is yet an agreement among researchers and practitioners on explaining entrepreneurial risk behavior in a parsimonious manner. The body of literature on entrepreneurship suggests the importance of risk-taking behavior in any entrepreneurial activity; but the level of risk-taking accepted for different kinds of entrepreneurs in different industries and non-entrepreneurs remains an illusion

Supportive Environment

Supportive environment refers to a combination of factors in the environment that play a role in the development or nurturing of entrepreneurship and entrepreneurial activities. Empirical studies on entrepreneurial environments suggest that societies that keep rules and regulations at minimum, offer tax incentives provide training and counseling services to start-up entrepreneurs, increase the likelihood of new venture creation (Dana 1987; 1990). Factors such as the availability of financial resources, location in large urban areas, and the presence of universities for training and research are also suggested to be very critical in increasing the rate and nurturing of new venture developments (Pennings 1982). It is also suggested that entrepreneurs need support services in preparing business plans, getting loans and business assistance from incubators (Hoy et al. 1991).

Aldrich and Wiedenmayer (1993) suggest that the sociopolitical environment may be so powerful to create or destroy entrepreneurship in a country. Covin and Slevin (1989) also consider environmental factors to be a reasonable start point for any analysis of entrepreneurship. They alleged that external variables moderate the relationship between entrepreneurial posture and firm performance. Covin and Slevin (1989) also pinpointed the idea that the external environment can be operationally defined in terms of forces or elements that are too numerous to incorporate in a specific sense into a single model.

H1 Need for Achievement is positively related to Entrepreneurial Postures
H2 Locus of Control is positively related to Entrepreneurial Postures
H3 Tolerance for Ambiguity is positively related to Entrepreneurial Postures.
H4 Risk taking propensity is positively related to entrepreneurial postures
H4a Supportive Environment moderates the relationship between Need for Achievement and Entrepreneurial Postures.
H4b Supportive Environment moderates the relationship between Internal Locus of Control and Entrepreneurial Postures.
H4c Supportive Environment moderates the relationship between Tolerance for Ambiguity and Entrepreneurial Postures.
H4d Risk Taking Propensity is positively related to Entrepreneurial Posture

Research Instrument

The sampling frame for this study was a mailing list of the registered small business owners situated in a "deep" south Standard Metropolitan Statistical area (SMSA). Three hundred self-reported questionnaires with a self-addressed, stamped return envelope were mailed to the randomly selected business owners from the original five hundred and fifty (550) registered population lists. A total of ninety (90) questionnaires were returned, completed and usable, representing a 30.percent response rate of the 300 mailed questionnaires.

Need for achievement was measured using a three-item; 7-point Likert type scale that was originally developed by Edwards (1959) to measure achievement motivation. The advantages of using EPPS over the other scales are: (1) Entrepreneurs scored higher than the norm on the achievement scale (Hornaday and Bunker 1970; Hornaday and Aboud 1971; Decarlos and Lyons 1979; Begley and Boyd 1986). (2). It is easier to score and administer than the other scales (Fineman 1977). (3). It has a higher internal consistency rate (.74) and stability across time than the projective scale (Fineman 1977). (4) Unlike the other scales, there is a consistent convergent validity of the measure in prior entrepreneurship research (Hornaday and Bunker, 1970; Hornaday and Abdoud 1971; Decarlos and Lyons 1979; Begley and Boyd 1986). The mean score of achievement motivation among respondents was 5.88, which indicated that, on the aggregate, used-car entrepreneurs possess a high level of need for achievement.

Internal locus of control was measured using a four-item, 7-point Likert type scale that was originally developed by Rotter (1966) to measure generalized expectancies. The researcher selected these scale items that are most relevant to entrepreneurs and company owners for space constraint and respondents' convenience. A higher score reflects higher internality of the entrepreneur under study. The four items adopted for this study are: (1a). Many of the unhappy things in people's lives are partly due to bad luck. (1b). People's misfortunes result from the mistakes they make. (2a) The idea that

teachers are unfair to students is nonsense. (2b). Most students do not realize the extent to which their grades are influenced by accidental happenings. (3a) I have always found that what is going to happen will happen. (3b). Trusting to fate has never turned out as well for me as making a decision to take a definite course of action. (4a). Becoming a success is a matter of hard-work; luck has little or nothing to do with it. (4b). Getting a good job depends mainly on being in the right place at the right time. These scale items have been reported to have high reliability and validity in a number of studies (Boone, Debrabander and Witteloostuijin 1996; Boone and Debrabander 1993; Boone et al. 1990; Boone et al 1991). Rotter scale remains the most widely used and shortest scale to make use of the forced choices. The scale concurrent, construct and predictive validity remains impressively high (0.60-0.88) with alpha reliability of 0.69-0.76 (Furnham and Steele 1993, p. 452). The mean score of internality among respondents was 5.70, which indicated that, on the aggregate, used car entrepreneurs possess a high level of internal locus of control.

Tolerance for ambiguity was measured using a three –item, 7-point Likert type scale that was originally developed by Budner (1962) to measure tolerance for ambiguity. The scale items selected are most relevant to entrepreneurs and small business owners. These negatively worded items are: (1).It is more fun to tackle a complicated problem than to solve a simple one. (2). Many of our most important decisions are based upon insufficient information. (3). Often the most interesting and stimulating people are those who don't mind being different and original. A higher score reflects a higher tolerance for ambiguity. Budner's scale has an average internal reliability of .49, which seems poor but Budner explained that the nature of the concept itself, the definition of which posits a complex, multidimensional construct provides for low or average reliability. He further asserted that the more complex the construct and the more complex the measure, the lower will the reliability estimate be. The most important advantage of this scale over the others is the freedom from social desirability bias and recognition of the highly complex structure of the concept. In terms of validity, its intercorrelation (0.85) with the other three scales was high enough to suggest that all four scales were tapping on the same dimensions. The prevailing strength of Budner's scale over the others is that, it was designed to measure three dimensions of ambiguity: the complexity, novelty and insolubility of a situation. Budner's scale is a natural choice of measurement instrument for a research study of this nature considering its many attributes. The mean score of tolerance for ambiguity among respondents was 5.24, which indicated that, on the aggregate, used car entrepreneurs possess above average level of tolerance for ambiguity.

Risk taking propensity was measured by employing and adapting Choice Dilemmas Questionnaire (CDQ) instruments. Choice Dilemmas Questionnaire was developed by Wallach and Kogan in 1959 and 1961. The instrument was designed to obtain probability preferences in everyday life situations. In the author's earlier work, subjects were presented with a 12-item instrument in which each item represented a choice dilemma between a risky and a safe course of action. The subject's selection of the probability level for the risky alternative's success that would make it sufficiently attractive to be chosen thus reflected the deterrence value of failure in a particular decision area (Wallach and Kogan, 1959 and 1961). The same procedure was adopted but only two items from the 12-item questionnaire will be

adapted in this study for parsimony, space and subject's convenience. Items from Kogan and Wallach instrument have been extensively used by researchers of risk taking propensity (Brockhaus 1980; Sexton and Bowman 1982, 1983). Wallace and Kogan (1964) reported reliabilities of .53 for the men .62 for the women using odd-even coefficients stepped up by the Spearman Brown formula and considered to be adequate. Thus, Choice dilemmas Choice (CDQ) instrument is the natural and appropriate choice for the present study.

To measure the entrepreneurial posture of the businesses from the perspective of the business owners, a seven point Likert-type scale was employed. An eleven item instruments were selected, the wording of these items was very similar to entrepreneurial posture scales developed and tested for reliability by Khandwalla (1977), Miller (1983), Covin and Slevin (1986, 1989) and Covin and Covin (1990). Subsequent scale enhancement work conducted by Lumpkin (1998) was also consulted to capture distinctions between product/service and process innovativeness. The mean score value of entrepreneurial postures among respondents was 4.60, which indicated that, on the aggregate, used car organizations are entrepreneurial. This result is consistent with previous research studies (Chadwick 1998; Knight 1997; Naman & Slevin, 1993; Covin & Slevin, 1989). Table 1 summarizes the descriptive statistics of the study variables.

Table 1

Descriptive Statistics of Variables

STATISTICS	Environment	N. Ach	IL C	T A	RT P	EP
Mean	5.60	5.90	5.70	5.84	3.90	4.60
Median	5.65	6.00	6.00	5.45	3.50	4.50
Mode	6.10	6.30	6.00	5.45	3.60	4.50
Std. Dev.	1.25	1.25	1.02	1.08	1.03	1.15

EP = Entrepreneurial Postures, N. Ach = Need for Achievement, ILC = Internal Locus of Control, TA = Tolerance for Ambiguity, RTP = Risk Taking Propensity

Psychological Traits and Entrepreneurial Postures

As can be seen from the correlation table, psychological variables are correlated among each other. This was expected due to the self-report nature of the data, as well as conceptual relationships between psychological traits. The results of Pearson's correlations suggest significant positive correlations between the psychological traits (need for achievement, internal locus of control, tolerance for ambiguity, and risk taking propensity) and entrepreneurial postures (See Table 2)

Table 2. Correlation Coefficients

	EP	N.ACH	ILC	TA	RTP	LED	SUPENV
EP							
NARCH	.43**						
ILC	.35**	.03					
TA	.42*	-.08	-.25**				
RTP	.33*	-.05	.14				
LED	.40	.34**	.35**	.05	-.00	.47**	
SUPENV	.28	.17	.30**	.28**	.06		

** = P < 0.01 level

* = p < 0.05 level

EP = Entrepreneurial Postures, N. Ach = Need for Achievement, ILC = Internal Locus of Control, TA = Tolerance for Ambiguity, RTP = Risk Taking Propensity

Hypotheses H1, H2, H3, and H4, were tested employing hierarchical regression analysis. Hierarchical regression is the statistical technique of choice when a single metric dependent variable is presumed related to one or more metric independent variables (Hair et al., 1995). The objective of this statistical procedure is to explain changes in the dependent variable with respect to changes in the independent variables.

Hypothesis #1 posits that need for achievement is positively related to entrepreneurial postures. The results of the regression analysis are shown in Table 3. To control for extraneous influences on the regression equation, the dependent variable (entrepreneurial postures), was first entered and followed by the independent variable (need for achievement). A significant relationship was found (b =.45, p < .001), and it explained 29% of the R^2 in entrepreneurial postures. Hypothesis #2 states that internal locus of control is positively related to entrepreneurial postures. Hypothesis #3 states that tolerance for ambiguity is positively related to entrepreneurial postures. Hypothesis #4 states that risk-taking propensity is positively related to entrepreneurial postures. Statistical analyses were performed on the full model (internal locus of control, tolerance for ambiguity and risk taking propensity) employing the hierarchical procedure of SPSS (Morgan and Griego 1998, p. 142). Results showed significant positive relationships between internal locus of control and entrepreneurial posture (b = .22, p < .05), and also significant positive relationships between tolerance for ambiguity and entrepreneurial postures (b = .22, p < .01)), with additional R^2 change of 25% explained in entrepreneurial postures. The positive relationship between risk-taking propensity and entrepreneurial postures was not significant (b = .17, p < .10). The result may be attributable to the small sample size and low statistical power.

Table 3. Régression Results: Psychological Traits and Entrepreneurial Postures

Independent Variables	Beta	SE	F	R^2
Need for Achievement	.450***	.015	13.74	.29
Internal Locus Of Control	.221*	.031		
Tolerance for Ambiguity	.220**	.021		
Risk taking Propensity	.109	.012		
R^2				.54

Adjusted R^2 =.51 Change in R^2 .25

Only standardized regression coefficients are shown

N = 90, *** P < 0.001, ** P < 0.01

Hypothesis 4a – 4d stated that supportive environments may moderate the relationships between psychological traits ((need for achievement, internal locus of control, tolerance for ambiguity, and risk taking propensity) and entrepreneurial postures. The results of the moderated regression analyses are presented in Table 4. The interactions terms of the supportive environments and psychological traits were computed using SPSS by multiplying the supportive environments variable and each of the four sub constructs of psychological traits (need for achievement, internal locus of control, tolerance for ambiguity and risk taking propensity) to ascertain whether the R^2 of the two products provided incremental explanatory power of entrepreneurial postures. The interactions of need for achievement and supportive environments variables provided incremental R^2 change of 0.12 at a significance level of $p < 0.001$. The interactions of internal locus of control and supportive environments variables provided incremental R^2 change of 0.06 at a significance level of $p < 0.01$. The interactions of tolerance for ambiguity and supportive environments variables provided incremental R^2 change of 0.05 at a significance level of $p < 0.001$. The interactions of risk taking propensity and supportive environments variables provided incremental R^2 change of 0.03 at a significance level of $p < 0.05$.

Table 4. Regression Results: Supportive Environments Moderating the Relationships between Psychological Traits and Entrepreneurial Posture

Entrepreneurial Postures (Dependent Variable)	Beta	R^2	Changes in R^2
Independent Variables			
Need for Achievement	.450***	.290	
Internal Locus of Control	.221*	.110	
Tolerance for Ambiguity	.220**	.102	
Risk-Taking Propensity	.105	.033	
Supportive Environment	.151	.010	
R^2 0.54			
Need for Achievement X Supportive Environment	.460***	.412	.120
Internal Locus of Control X Supportive Environment	.224**	.171	.060
Tolerance for Ambiguity X Supportive Environment	.223***	.152	.050
Risk Taking Propensity X Supportive Environment	.110*	.066	.030
		0.80	0.260

R^2 =0.80, Adj. = 0.76 Change in R^2 0.26, *** P < 0.001, ** P < 0.01, * P < 0.05

Overall, the moderated multiple regression results suggest that, the interactions of supportive environment and psychological traits (need for achievement, internal locus of control, tolerance for ambiguity, and risk taking propensity) provided incremental R^2 change or higher explanatory powers of entrepreneurial posture of twenty six percent as hypothesized in H4a, H4b, and H4c and H4d.

Discussion

The theoretical underpinnings for this empirical study specified that psychological traits relate positively to entrepreneurial postures, and supportive environments may amplify the relationships between psychological traits and entrepreneurial postures.

Results of the Pearson's correlations provide modest support for positive significant correlations between psychological traits and entrepreneurial postures. The results of the hierarchical regression largely support significant relationships between psychological traits (need for achievement, internal locus of control and tolerance for ambiguity) and entrepreneurial postures. Moderated regression results also support that supportive environments moderate the relationships between psychological traits and entrepreneurial postures as shown in the incremental changes from fifty four percent to eighty percent of variance explained as hypothesized $H4_a$, $H4_b$, $H4_c$, and $H4_d$.

These findings tend to lend support to the criticisms advanced by Gartner (1988), Low and MacMillan (1988), Aldrich and Zimmer (1986), psychological traits alone are inadequate in explaining entrepreneurial behavior. Again, please note Gartner (1988) and Vesper (1980) suggestion that the creation of an organization is a complex process and a contextual event, the outcome of many influences. This model seems more robust for understanding entrepreneurial postures because it incorporates variables from three different levels of analyses, including the individual personality traits, the firm level of entrepreneurial postures, and the environment.

While a number of research studies have reported social and environmental factors as necessary conditions for the appearance of entrepreneurship or enhancing firm performance (Sexton & Bowman, 1985; ., Sandberg & Hofer, 1987; Covin & Slevin, 1989; Bloodgood, Sapienza; & Carsrud, 1995; Dess, Lumpkin, & Covin, 1997; Lumpkin & Dess, 2001), research findings reported herein tend to address a research void by linking supportive environment as a moderating influence of psychological traits in explaining entrepreneurial postures. Furthermore, majority of the past research findings have converged on the relationship between entrepreneurship and psychological traits with primary focus of distinguishing entrepreneurs from the general population (Ahmed, 1985; Begley& Boyd, 1987; Bonnett & Furnham, 1991; Nwachukwu 1995). In contrast, this research ventured to consider the dimension of entrepreneurial postures as the dependent variable and psychological traits as the predictors. In addition, it provided significant insights of the impact of supportive environment on the relationship between entrepreneurial postures and psychological traits

Future data-based research studies addressing psychological traits and environmental influences on entrepreneurial postures should employ a more representative sample from multiple industries with provisions for inter-industry variations in life cycles. The length of the questionnaire should be significantly reduced to improve the response rate. Because of the dynamic process of entrepreneurship, a triangular approach comprised of the three prevalent approaches including managerial perception employed in this study, resource allocation and longitudinal approaches should be employed in future research to minimize the limitations of these findings.

Overall, these research findings have a number of theoretical and managerial implications relative to starting and managing entrepreneurial ventures. It may serve as a robust model for understanding entrepreneurial behavior relative to risk taking behavior, innovativeness, and proactiveness. Also, it may be a useful tool for selecting team members for new business start ups, and evaluating applicants for intrapreneurship positions in the corporate world. Another implication is in the area of entrepreneurship pedagogy, linking the relationship between psychological traits and entrepreneurial postures could be used as a technique for identifying students for entrepreneurial careers. This study was conducted with actual entrepreneurs in the service sector. Prior studies have drawn their samples from mostly students, managers and non-entrepreneurs (Twomey 1988; Miner 2000). In addition, the service sector has received very little attention in previous entrepreneurship research, yet it represents one of the fastest growing sectors in the global economy (Zahra et al., 1999).

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