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Implementation of ICT Policy (Blended Learning Approach): Investigating factors of Behavioural Intention and Use Behaviour

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The purpose of this study was to evaluate the implementation of ICT policies in investigating o Behavioral Intention (BI) and Use Behavior (UB) factors by employing experience and workload of teachers as moderator. The identified factors were Use Expectancy (UE), Social Influence (SI), Facilitating Conditions (FC) and Teacher Efficacy (TE). Experience and workload are defined as moderator variables, and integrated into the study model. The data were collected through a questionnaire among 720 teachers in Malaysia. The findings showed UE, SI, FC, and TE were significant factors affecting BI and UB. The findings of empirical analysis also revealed that experience factors moderate the relationship between FC and UB. Meanwhile, workload factors moderate (1) UE and BI relationships, and (2) TE and BI relationships. This study also provided positive implications for efforts to promote learning practices using a blended learning approach through constructive guidance to policymakers and planning for professional development of teaching.

Keywords: implementation policy blended learning, moderator, SEM-AMOS, experience, teachers workload

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INTRODUCTION

The Interim Strategic Plan 2011-2020 (Ministry of Education Malaysia, 2012b) has stressed the use of ICT in schools as a vital element in achieving the 10th Malaysia Plan 2011-2015 objectives. To succeed the objectives, MOE has launched a comprehensive and inclusive education system analysis to develop a new Malaysia Education Blueprint in October 2011 (Ministry of Education Malaysia, 2012a).

The Malaysia Education Blueprint (2013) strategically offers a vision of education system and students' aspirations that the education system in Malaysia needs and deserves, and 11 strategic or operational shifts required to achieve that vision. Shift 7 is focuses on the importance of Information and Communications Technology (ICT) to increase the quality of learning in Malaysia, which provides Internet access and virtual learning environment via 1-BestariNet to all 10,000 schools. Additionally, Clause 29 & 30 in the National Education Policy effort from the Educational Policy Planning and Research Division (2012b) also clearly reflected the needs of the educational system in Malaysia to use ICT in teaching and learning and educational management.

The use of information and communication technology to support learning is important and a common phenomenon of the 21st century. Therefore, in order to address the needs and challenges of education in the 21st century, the instructional concept of education must be influenced by the effective integration between content, approach and ICT (Fu, 2013; Mazur, Brown & Jacobsen, 2015; Vatanartiran & Karadeniz, 2015). Based on these needs and challenges, the Ministry of Education Malaysia (MOE) through the 1BestariNet project has introduced a virtual platform known as the Frog Virtual Learning Environment (Frog VLE). SaifulAfzan, Lazim, Ali, and Yusoff (2014) and The JISC infoNet Service (2006) explain that virtual learning environment (VLE) is a cloud-based platform aimed at providing a flexible virtual learning environment. The concepts and the nature of the implementation of the learning approach using Frog VLE have indirectly highlighted the concept of blended learning, which is believed to bring a positive impact to students' learning outcomes (Cimermanová, 2013; Songkram, 2015).

PROBLEM STATEMENT

The term blending learning is a new, foreign and under-utilized terms (MohdAzli, Wong, & Noraini, 2016), especially at primary and secondary levels but the implementation has long since begun. Since the implementation of the 1BestariNet project (when Frog VLE was introduced as a learning platform), in 2011, indirectly the blended learning approach has become the official instructional practice in these national schools (Ministry of Education Malaysia, 2013). However, his acceptance among teachers in Malaysia is still blurred. Therefore, the factors that influence the acceptance and use of the blended learning approach among teachers should be reviewed for further action.

Based on previous studies, teachers generally have positive perceptions and are confident with the ability of ICT to improve the success of student learning (Hamzah, Embi, & Ismail, 2010; Ibrahim, AhmadShidki, WanSalihin, & Fahmi, 2015; Norazilawati, Noraini, NikAzmah, & Rosnidar, 2013; SeriRahayu, 2011; SitiNazuar,

2014). However, teachers are less likely to use ICT in the learning process of students (Hamzah et al., 2010; Seri Rahayu, 2011; Siti Nazuar, 2014; WanZah, Hajar, Azimi, & Hayati, 2009). This scenario appears to be in line with Frog VLE's practice in school whereby its acceptance among teachers is still a major issue to be solved. Teo, Fan, and Du (2015) and Venkatesh, Morris, Davis, and Davis (2003) suggest that the reason for this situation is the low level of individual acceptance of the technology. When teachers are unable to accept and use technology in an appropriate and optimal way, the advantage of technology cannot be maximized to improve the effectiveness of student learning. Venkatesh, Thong, and Xu (2012) explain that various factors influence individual's intentions to accept or reject a technology.

In the context of this study, the factors accepting and using Frog VLE platform as an essential element of Blended learning approach must be studied first, before the focus of the study is to identify the effects of moderate interactions (moderator effect) in the relationship between the constructs of the study. Many previous empirical studies have examined the influence of moderator variables on the effect of the relationship between the forecasting factor and the endogenous factor. Almost all studies have supported moderate significance effects on the intentions and retention of individual behavior to use technology. The use of technology have proven that individual intentions can be simplified by experience factors (Attuquayefio & Addo, 2014; Hur, Kim, & Kim, 2014; Lee & Hung, 2015; Muraina, 2015; Tarhini, Hone, Liu, and Tarhini, 2017). However, previous empirical studies (Alghanmi, 2014, Seri Rahayu, 2011; Siti Nazuar, 2014; Termit & Noorma, 2015) have proven that the moderator variable, namely -the task load as a factor that has effect of interaction in the relationship between the studies extracts. Therefore, this study was aimed to investigate factors affecting Behavior Intention (BI) and Use Behavior (UB), and the effect of moderator interaction between factors to BI and UB.

LITERATURE REVIEW

Model and Hypothesis

This study proposed and examined the research model developed based on previous theory of technology acceptance, such as Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), Technology Acceptance Model (TAM) (Davis, Bagozzi, & Warshaw, 1989), Theory of Planned Behavior (TPB) (Ajzen, 1991), C-TAM-TPB (Taylor & Todd, 1995), and Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003). The relationship between the variables in the research model was formed based on the relationship between the variables in the previous theories as shown in Table 1.

Table 1
Construct, Sub-Constructs, Model/Theory, Sources and Relationship

Construct, Sub-Construct	ts, Model/Theory,	Sources and Rela						
Construct	Sub-Constructs	Model/Theory	Sources	Relationship				
Use Expectancy (UE)	This factor or	The combination is		UE> BI				
The individual's belief that	construct is a	based on the results						
implementing the blade	combination	of the EFA testing						
learning approach can	between Effort	that has been done						
facilitate their work and help	Expectancy and	on the pilot test.						
the learning process achieves	Performance							
its predetermined goals.	Expectancy.							
Social Influence (SI)	Social influence	UTAUT;	Ajzen (1991)	SI> BI				
SI is the level of individual	Subjective norm	TRA, TPB, TAM2,	Venkatesh et					
perceptions regarding the		C-TAM-TPB;	al. (2003)					
importance of others	Social factors	MPCU.						
believing that they should	Influencing							
use or implement the bended								
learning approach.								
Facilitating Conditions (FC)	Facilitating	UTAUT, MPCU;	Thompson,	FC> BI				
FC refers to teachers'	conditions	C-TAM-TPB;	Higgins, &	FC> UB				
perceptions regarding the	Perceived	IDT;	Howell					
quality of the system,	behavioral control	TPB.	(1991), Taylor					
facilities, technical resources	Compatibility		& Todd					
and existing support to help	Perceived Control		(1995),					
them implement or use the			Venkatesh et					
Blade Learning approach.			al. (2003)					
Teacher Efficacy (TE)	Attitude Toward	TRA, TAM;	Davis et al.	TE> BI				
Defined as a matter of	Computer Use	SCT, C-TAM-TPB.	(1989),					
referring to teachers'	Self-Efficacy		Bandura					
perceptions of their beliefs,			(1989),					
positive or negative attitudes			Thompson et					
about their ability to accept,			al. (1991)					
use or implement the								
Blended learning approach in								
more effective ways.								
Behavioral Intention (BI)	Behavioral	TRA, TAM,	Davis et al.	BI> UB				
Refers to the level of desire	Intention	TAM2, C-TAM-	(1989), Taylor					
for doing or remitting an		TPB, UTAUT;	& Todd					
action in using or	Intention to	TPB.	(1995),					
implementing a Blended	Perform Behavior		Venkatesh et					
learning approach.			al. (2003)					
Use Behavior (UB)	Use Behavioral	TRA, TAM,	Davis et al.					
Refers to action in using or		TAM2, C-TAM-	(1989),					
implementing a blende	Usage	TPB, UTAUT;	Venkatesh et					
learning approach.	Behavior	SCT; TPB.	al. (2003)					

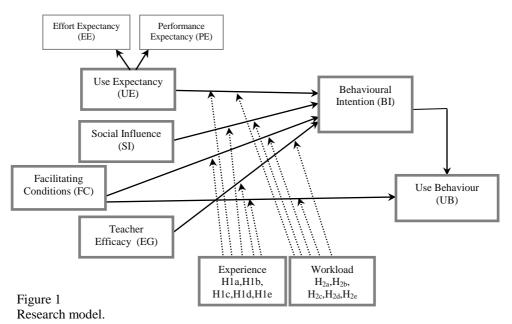
In addition, to get a more comprehensive picture of the experience factor and the burden of duties are included as moderator variables. Relating to experience as moderator variables, Abdul Wahab (2012), Alghanmi (2014), Touray and Salminen (2013), Venkatesh et al. (2003, 2012) and Zhang, Liu, Yan, and Zhang (2016) consistently show that experienced individuals are more likely to have intentions and then use technology in their task. Although, the tendency to use technology seems to be diminished in parallel with time-shifting (Venkatesh et al., 2003), knowledge and skills acquired

through improved experience have prompted individuals to remain in the technology (Zhang et al., 2016). Alghanmi (2014) stressed that experienced individuals are more positive about technology. Accordingly, the study expects similar effects in the relationship between the constructs of this study based on the setting of the education system in Malaysia.

Past researchers have specifically demonstrate the burden of duties (Alghanmi, 2014; Buabeng-Andoh, 2012; Lim, Morris, & Kupritz, 2007; Seri Rahayu, 2011; Siti Nazuar, 2014; Termit & Noorma, 2015), as a moderating significant factor. Alghanmi (2014) explains that the burden of duty influences creativity of the students. However, excessive responsibilities will burden teachers in the context of time management, use of energy resources and emotional stress (Seri Rahayu, 2011; Siti Nazuar, 2014; Termit & Noorma, 2015). This situation indirectly creates negative perceptions and attitudes towards innovations that are being introduced to them. Teachers are expecting latest innovations to encourage them to reject the innovation (Seri Rahayu, 2011; Siti Nazuar, 2014).

Accordingly, the study expects difference in terms of experience and task load by the expected completion of assignments, environmental influences, facilities conditions, self-efficacy in forming individual intentions and behaviors to use technology. Based on this expectation, the study predicts that there are certain variables that will simplify the relationship between the study variables. Through the demographic characteristics of the sample and the study environment and work culture of school teachers in the country (Lim & Hwa, 2015; Norazilawati, Noraini, Nik Azmah, & Rosnidar, 2013; Termit & Noorma, 2015; Wong, Rosma, Goh, & Mohd Khairezan, 2013) the study has listed two modifiers (moderators) namely experience and task load to measure their impact on each relationship between the main variables of the study.

Therefore, the study has presented hypotheses to prove the influence of moderator variables (experience and workload) in the structure of the study structure to gain a better understanding and illustrate the acceptance and adoption of the blended learning approach among teachers in Malaysia. The relationship between these variables has been adapted into the study model framework (*Figure 1*).



Hypothesis moderator (Experience)

- H_{1a} Experience moderate relationship between UE and BI.
- H_{1b} Experience moderate relationship between SI and BI.
- H_{1c} Experience moderate relationship between FC and BI.
- H_{1d} Experience moderate relationship between FC and UB.
- H_{1e} Experience moderate relationship between EG and BI.

Hypothesis moderator (Workload)

- H_{2a} Workload moderate relationship between EU and BI.
- H_{2b} Workload moderate relationship between SI and BI..
- H_{2c} Workload moderate relationship between FC and BI.
- H_{2d} Workload moderate relationship between FC and UB.
- H_{2e} Workload moderate relationship between EG and BI.

METHOD

Sampling and procedure of research

The data were collected from school teachers in Malaysia. A total of 1440 questionnaires were distributed to 144 chosen random schools. Samples were given the option to answer online (https://soalselidikvle.blogspot.com/) or print the paper. The questionnaire used in this study were developed through a literature review with a small change to adapt to the research issue. The majority of the constructs and items are similar to the UTAUT model by Venkatesh et al. (2003), but there is an addition of constructs and new moderator variables in forming a review framework. A total of 851 research samples (59.1%) have responded to the invitation to answer questionnaires sent to schools nationwide through school principals. Approximately (n = 851) a total of 566 samples responded to the questionnaire in paper prints and 285 samples responded online. Both questionnaires, printed and online questionnaires are totally the same.

Data Analysis

Through Structural Equation Modelling (SEM), IBM's SPSS Amos (Analysis of Moment Structures) software, a second-generation advanced statistical analysis approach that combines validation factor analysis with linear regression was used to analyze inferential statistics for this study data. The model assumption analysis using covariance-based (CB) is to test the proposed model, which represents the relationship between the six variables in this study. At the same time, all the relationships between the variables in the model will be estimated and measured to derive significant value. In particular, SEM has been used to the relationships between exogenous variables and endogenous variables (Hair, Babin, & Krey, 2017; Hair, Black, Babin, & Anderson, 2014; Tabachnick & Fidell, 2007).

For hypothesis proofing, multiple group analysis techniques (multi-group analysis) were conducted to test the effect of interactions by moderator variables on the relationship between exogenous and endogenous variables. Based on the effectiveness testing guide (Gaskin, 2016), there are three steps to be followed to prove the impact of the mode of relationship between relationships within the model.

First, the data set for each moderator variable should be divided into two (by category) and labelled as a high (low) group and low (low) group. Secondly, two structural models for comparison for each moderato would have been Model 1 is an unconstrained model for both groups (high and low), where all the relationship values between the constructs in the model are not constrained. While Model 2 is a constrained model for both groups, where all the relationship values between constructs is connecting to be at the same value. Testing of these two groups is performed separately but simultaneously using IBM SPSS Amos statistical software. The third step is by assessing differences in the value of Chi-square (χ 2) and degree of freedom (df) between the Constrained model and the Unconstrained model. For proving that moderator effects, the difference in Chi-square values should be greater than the value of df (Critical values of the chi-squared distribution); $\Delta\chi$ 2> critical values at α = 0.05. If the test can be fulfilled (sig, p <0.05),

then the tested relationship can be validated having a significant interaction effect (the effect of the moderator in relation between the constructs) and hence the hypothesis testing can be proved (Dawson, 2014; Gaskin, 2016; Kline, 2011; Saltson & Sharon, 2015).

In order to prove the strength of the moderator's direction in the test relationship, the study compares the value of the standardized estimate (β) between groups to identify groups with more significant interaction effects.

FINDINGS

Testing Model

Direct Effect

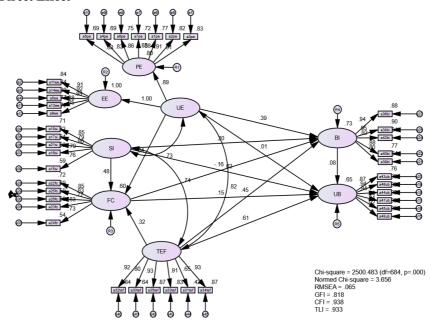


Figure 2
Fully Correlated Model (Standardized Regression Weights)

Notes: UE = Use Expectancy (UE), SI = Social Influence (SI), FC = Facilitating Conditions (FC), TEF = Teacher Efficacy (TE), BI = Behavioural Intention (BI), and UB = Use Behaviour (UB).

Figure 2 showed the estimation of parameters for the study model. The findings of the analysis showed that Use Expectancy (UE) significantly affected the Behavioural Intention (BI) of the teacher to the Blended Learning approach ($\beta=0.395,\ p<.001$). Social Influence (SI) also significantly affected Behavioural Intention (BI) ($\beta=0.196,\ p<.001$). Facilitating Conditions (FC) significantly affected Behavioural Intention ($\beta=-0.162,\ p<.001$) and Use Behaviour (UB) ($\beta=0.146,\ p<.05$). Lastly, Teacher Efficacy (TE) had been shown to significantly affect the Behavioural Intention (BI) of the teacher

to implement the blended learning approach (β =0 .453, p <.001), however, the relationship between Behavioural Intention (BI) and Use Behaviour (UB) is not significant (β = 0.076, p> .01).

Squared Multiple Correlations (R2) analysis showed the variance values for Behavioural Intention (BI) constructs predicted by exogenous variables is 0.733 (R2 for NTL = 0.733). This means that 73.3 % of the total variance in the Behavioural Intention (BI) construct can be predicted by the variance in Use Expectancy (UE), Social Influence (SI), Facilitating Conditions (FC) and Teacher Efficacy (TE). These results illustrated that there were only 26.7 % change in Behavioural Intention (BI) due to other factors not predicted by this research model. For the Use Behaviour construct (UB), R2 analysis obtained a value of 0.651 (R2 for TLP = 0.651). This means that 65.1 % of the total variance in the Use Behaviour (UB) construct was predicted by the variance in Use Expectancy (UE), Social Influence (SI), Facilitating Conditions (FC), Teacher Efficacy (TE), and Behavioural Intention). There was only 34.9 percent change in the Use Behaviour (UB) due to other factors not predicted by this study.

Hypothesis

A summary of the results of hypothesis testing is shown in Table 2.

Table 2 Summary of of Moderator Effect

Relationship	Standardized estimate (β)	(CR)	P	Standardized estimate (β)	(CR)	P	Difference	Moderator Effect	Hypothesis	
	Less Experience			High Experience			. 7			
UE>BI (H _{1a})	0.399***	5.32	***	0.382***	5.468	***	$\Delta \chi^2(1) = 0.079$ $\Delta \chi^2 < cv$	No	Rejected	
SI>BI (H _{1b})	0.155**	2.254	0.024	0.23***	3.398	***	$\Delta \chi^{2}(1) = 1.258$ $\Delta \chi^{2}_{2} < cv$	No	Rejected	
FC>BI (H _{1c})	-0.085 ^{ns}	-1.16	0.245	-0.205**	-3.73	***	$\Delta \chi^2(1) = 1.695$	No	Rejected	
FC>UB (H _{1d})	-0.018 ^{ns}	-0.243	0.808	0.249***	3.863	***	$\Delta \chi^2 < cv$ $\Delta \chi^2(1) =$ 6.578 $\Delta x^2 > vv$	Yes	Accepted	
TE>BI (H _{1e})	0.439***	5.182	***	0.456***	6.588	***	$\Delta \chi^{2} > cv$ $\Delta \chi^{2}(1) =$ 0.199 $\Delta \chi^{2} < cv$	No	Rejected	
-	Less Workload			High Workload			λ			
UE>BI (H _{2a})	0.497***	8.051	***	0.126 ^{ns}	1.211	0.226	$\Delta \chi^2(1) = 11.958$ $\Delta \chi^2 > cv$	Yes	Accepted	
SI>BI (H _{2b})	0.183**	3.21	0.001	0.102 ^{ns}	1.105	0.269	$\Delta \chi^{2}(1) = 0.692$ $\Delta \chi^{2} < cv$	No	Rejected	
FC>BI (H _{2c})	-0.141**	-2.71	0.007	-0.086 ^{ns}	-1.08	0.279	$\Delta \chi^{2}(1) = 0.$ 620 $\Delta \chi^{2} < cv$	No	Rejected	
FC>UB (H _{2d})	0.119**	2.034	0.042	0.263**	2.979	0.003	$\Delta \chi^{2}(1) = 1.563$ $\Delta \chi^{2}_{2} < cv$	No	Rejected	
TE>BI (H _{2e})	0.354***	5.876	***	0.737***	6.213	***	$\Delta \chi^{2}(1) = 5.823$ $\Delta \chi^{2} > cv$	Yes	Accepted	

Notes; ***p<0.001, **p<0.005, *p<0.05,

Significant if $\Delta \chi^2 > critical\ values(cv)$, $\chi^2(df=1) = 3.84$, p<0.05 (Kline, 2011).

Multiple group analysis of multiple group analysis tests was conducted to evaluate the influence of moderator variables (teacher experience and teacher workload) in the relationship between internal constructs in the study model. For the effect of teacher experience and workload as moderators, only three relationships (bold) (FC---> UB); (UE---> BI); and (TE--->BI) have been shown to have interaction effects as moderator variables and supports the hypotheses (H1d); (H2a), and (H2e).

DISCUSSION

In order to enhance the acceptance and use of the blended learning approach among teachers, it is important to identify feedback of teachers on the implementation of blended learning as well as other factors that may influence their intentions. This study has identified four factors that influence the Behavioural Intention (BI) and Teacher's Use Behaviour (UB) to implement blended learning. The Performance Expectancy (JP), Social Influence (SI), Facilitating Conditions (FC) and Teacher Efficacy (TE) (73.3%) have explained the total variance in Behavioural Intention (BI) and over half (65.1%) variance in Use Behaviour (UB). The findings of the analysis also showed that the model of the study has a good fit model index, as well as can explain the almost complete representation of relationships in describing the factors that influence the intention and use of the teacher in blended learning.

In relation to the hypothesis of the effect of the moderator experience, the findings revealed that only one of the five relationships tested by the experience moderator is significant. Testing showed that H_{1d} hypotheses can be proven and supported. Therefore, the findings indicate that teachers' experience can effect of the relationship between Facilitating Conditions (FC) and Use Behaviour (UB).

The findings are consistent with previous studies (AbdulWahab, 2012; Alghanmi, 2014; Hur et al., 2014; Touray & Salminen, 2013; Venkatesh et al., 2003, 2012; Zhang et al., 2016). Individuals are moderator variables that interact over the relationship between the study variables. The perception of both (experienced and inexperienced) groups of teachers is parallel in the anticipation of the importance of Facilitating Conditions (FC) in influencing their Use Behaviour (UB). In particular, this study demonstrates the influence of experienced teachers to be more powerful than less experienced teachers do. Venkatesh et al. (2003) explains that experience is an important element in influencing individual behaviour to use technology. Experienced individuals usually have the skills and knowledge (Zhang et al., 2016), so their emotions are more stable and positive in anticipation of technology-related Facilitating Conditions (FC) (Hur et al., 2014). Individual experiences are also linked to creative thinking in planning student-learning processes (Alghanmi, 2014).

The findings showed that over 10 years of experienced teachers have higher behavioural tendency to implement blended learning even though ICT facilities and technical support are minimum. The teacher's view implied that experienced teachers are more rational and prepared for any possibilities and changes that affect Facilitating Conditions (FC), in influencing their Use Behaviour (UB). Experienced teachers demonstrate that

they are more confident in implementing the Blended learning approach in any Facilitating Conditions (FC).

Overall, the findings clearly showed that the influence of Facilitating Conditions (FC) on the Behavioural Intention (BI) of the teacher to implement the approach of Blended learning to be moderated by the teacher's experience. Experienced teachers are more likely to influence the effect of the relationship between the variables. Practically, experienced teachers should be encouraged to be actively involved in technology-related tasks as they are likely to succeed in integrating technology into the learning process. While less experienced teachers need more exposure regarding the advantages, knowledge and skills of ICT in an effort to shape the perceptions of their experiences. The study summarizes that teachers' experience needs to be improved in order to strengthen the teacher's Behavioural Intention (BI) to implement blended learning.

Consistent with earlier studies pertaining to the constraints of integrating ICT into the learning process (Buabeng-Andoh, 2012; SeriRahayu, 2011; SitiNazuar, 2014; Termit & Noorma, 2015), more teachers' views of workload imaginations, teacher recruitment tasks such as schooling and clerical-related tasks will reduce their intentions to use technology despite expectations of usefulness to be positive. Statistical data analysis showed that teachers with less than four positions are more likely to implement the Blended learning approach when their expectations of the business and the advantages of using the Frog VLE platform are positive. Their expectations of the usefulness of blended learning strongly influence their intention to implement it. Therefore, teachers with less workload seem to be more prepared to implement blended learning compared to teachers with heavier workload when the expected positive aspects of use are improved. Based on the findings, it is concluded that the Use Expectancy (EE) effect on Behavioural Intention (BI) to implement blended learning can be moderated by the workload. The effect of variable workload moderator becomes stronger for teachers with less workload. The implication is that the number of posts held by a teacher should be reduced and the essential task of teachers should have a clear focus, so that their perceptions of the usefulness of blended learning become positive, and strengthen the Behavioural Intention (BI) of teacher to implement blended learning in the classroom.

Furthermore, the study also proved that workload factor simplifies the effect of Teacher Efficacy (TE) on Behavioural Intention (BI), and the effect of simplification is more powerful for teachers with workload than teachers with less workload. The statistical analysis of the study showed that teachers with more than three positions in the school are more prepared, positive, and have strong intentions to implement blended learning. Teachers who have high self-efficacy are more competent to become administrators and perform special school tasks (Masitah et al., 2013; Mohd Azli, Wong, Noraini, & Mahizer, 2016; Zaharah, Saedah, Ghazali, & Nur Hasbuna, 2015). In view of this, it is concluded that teachers with many special posts in school are have high self-efficacy and are able to perform their essential duties. They are able to manage time, skills and knowledge systematically to achieve the task goals.

This situation proves that individuals with positive self-efficacy are able to handle the tasks perfectly (Banas & York, 2014; Kulviwat, Bruner, & Neelankavil, 2014), and are

more open in accepting technology-related innovations (SeriRahayu, 2011). Therefore, in the context of this study, workload can simplify the effect of the relationship between Teacher Efficacy (TE) and Behavioural Intention (BI). Workload of teachers does not prevent their Behavioural Intention (BI) to use Frog VLE platforms. Overall, despite having a lot of workload, the teacher's Behavioural Intention (BI) to implement the blended learning approach can be improved significantly if the Teacher Efficacy (TE) attributes such as the skills, knowledge, beliefs and attitude of teachers can be formed positively.

CONCLUSION

This empirical study was conducted to identify the role of teacher experience and workload as the moderator variable in affecting the relationship between the study variables, thus contributing to the acceptance and use of the blended learning approach among teachers in Malaysia. The findings showed that the adoption and practice of using the blended learning approach by teachers can be realized by considering the Use Expectancy (EE) factors, Social Influence (SI), Facilitating Conditions (FC), and Teacher Efficacy (TE).

In conclusion, this study has been able to explain the influence and role of moderate moderator (simplification) on the study variables thoroughly. The acceptance and use of the blended learning approach among teachers has been made comprehensive. The findings of this study have suggest of an important implications that could be the guideline for policymakers, MOEs, 1Bestarinet project contractors and related parties. The selective focus should be given to relevant aspects to address this issue effectively to produce the expected impact. Aspects such as teacher's experience and workload need to be addressed in planning any programs related to technology integration in the learning process of students, in particular, the applied learning approach. A comprehensive understanding of the structure model of this study can help stakeholders in the preparation of constructive plans to increase the acceptance and adoption of the blended learning approach among teachers in Malaysia.

REFERENCES

AbdulWahab, L. (2012). A modification of the Unified Theory of Acceptance and Use of Technology (UTAUT) from users' perspectives of Telecentre in Nigeria. Universiti Utara Malaysia. Retrieved from http://etd.uum.edu.my/3379/.

Ajzen, I. (1991). The theory of planned behavior. In Orgnizational Behavior and Human Decision Processes 50 (p. 179–211). Academic Press, Inc. http://doi.org/10.1016/0749-5978(91)90020-T.

Alghanmi, S. (2014). Investigating the interpersonal and contextual factors govern Saudi lecturers' motivation in creating innovative Blended learning environment that web 2.0-based. *Turkish Online Journal of Educational Technology*, *13*(3), 96–106. http://www.tojet.net/articles/v13i3/13311.pdf.

Alharbi, S., & Drew, S. (2014). Using the technology acceptance model in understanding academics' behavioural intention to use learning management systems. *International*

Journal of Advanced Computer Science and Applications, 5(1), 143–155. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.428.9465&rep=rep1&type=pdf

Attuquayefio, S. N., & Addo, H. (2014). Using the UTAUT model to analyze students 'ICT adoption. *Journal of Technology*, *10*(3), 75–86. Retrieved from http://files.eric.ed.gov/fulltext/EJ1059042.pdf.

Banas, J. R., & York, C. S. (2014). Authentic learning exercises as a means to influence preservice teachers' technology integration self-efficacy and intentions to integrate technology. *Australasian Journal of Educational Technology*, 30(6), 728–746. http://doi.org/10.4018/ijicte.2014070105.

Bandura, A. (1989). Social cognitive theory. *The American psychologist*, 44(9), 1175–1184. http://doi.org/10.1037/0003-066x.44.9.1175.

Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of information and communication technology into teaching: a review of the literature. *International Journal of Education and Development using Information and Communication Technology*, 8(1), 136–155. http://ijedict.dec.uwi.edu//viewarticle.php?id=1361.

Cimermanová, I. (2013). Teacher training in the virtual learning environment. *International Journal of Arts and Commerce*, 2(10), 1–8.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management science*, *35*(8). http://doi.org/http://dx.doi.org/10.1287/mnsc.35.8.982.

Dawson, J. F. (2014). Moderation in management research: What, why, when, and how. *Journal of Business and Psychology*, 29(1), 1–19. http://doi.org/10.1007/s10869-013-9308-7.

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley.

Fu, J. (2013). ICT in education: A critical literature review and its implications. *International Journal of Education and Development using information and Communication Technology (IJEDICT)*, 9(1), 112–125. http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.357.6432.

Gaskin, J. (2016). Multi-group analysis. Retrieved from http://youtube.com/Gaskination.

Hair, J. F., Babin, B. J., & Krey, N. (2017). Covariance-Based Structural Equation Modeling in the Journal of Advertising: Review and Recommendations. *Journal of Advertising*, 46(1), 163–177. http://doi.org/10.1080/00913367.2017.1281777.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis*. Pearson Education Limited (7th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Hamzah, M. I., Embi, M. A., & Ismail, A. (2010). *ICT and diversity in learners' attitude on smart school initiative*. Procedia - Social and Behavioral Sciences, 7(C), 728–737. http://doi.org/10.1016/j.sbspro.2010.10.099.

- Hur, W.-M., Kim, H., & Kim, W.-M. (2014). The moderating roles of gender and age in tablet computer adoption. Cyberpsychology, behavior and social networking, 17(1), 33–39. http://doi.org/10.1089/cyber.2012.0435.
- Ibrahim, M., AhmadShidki, M. Y., WanSalihin Wong, A., & Fahmi, A. R. (2015). Factors contributing pre-school trainees teachers adoption of virtual learning environment: Malaysian evidence. *The Turkish Online Journal of Educational Technology*, *14*(2), 73–79. Retrieved from http://www.tojet.net/articles/v14i2/14210.pdf.
- Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd. Ed.). New York: The Guilford Press.
- Kulviwat, S., Bruner, G. C., & Neelankavil, J. P. (2014). Self-efficacy as an antecedent of cognition and affect in technology acceptance. *Journal of Consumer Marketing*, *31*(3), 190–199. http://doi.org/10.1007/s13398-014-0173-7.2.
- Lee, L.-T., & Hung, J. C. (2015). Effects of blended e-learning: A case study in higher education tax learning setting. *Human-centric Computing and Information Sciences*, 5(1), 13. http://doi.org/10.1186/s13673-015-0024-3.
- Lim, D. H., Morris, M. L., & Kupritz, V. W. (2007). Online vs. Blended Learning: Differences in instructional outcomes and learner satisfaction. *Journal of Asynchronous Learning Networks*, *11*, 27–42. http://doi.org/184.168.109.199.
- Lim, K., & Hwa, M. (2015). A case study of the experiences of instructors and students in a Virtual Learning Environment (VLE) with different cultural backgrounds. *Asia Pacific Education Review*, *16*(4), 613–626. http://doi.org/10.1007/s12564-015-9400-y.
- Masitah, M. Y., Azizi, M., Ahamad Makmom, A., Bahaman, A. S., Ramli, B., & Noriati, A. R. (2013). Faktor- faktor yang mempengaruhi efikasi kendiri guru sekolah menengah di Malaysia dalam pelaksanaan pendidikan alam sekitar. *Asia Pacific Journal of Educators and Education*, 28, 131–153.
- Mazur, A. D., Brown, B., & Jacobsen, M. (2015). Learning designs using flipped classroom instruction. *Canadian Journal of Learning and Technology*, 41(2), 1–26. Retrieved from http://search.proquest.com/docview/1720057846?accountid=8194.
- Ministry of Education Malaysia. (2010). *Policy on ICT in Education Malaysia*. Putrajaya: Ministry of Education.
- Ministry of Education Malaysia. (2012a). *Interim Strategic Plan 2011-2020*. Putrajaya, Malaysia.
- Ministry of Education Malaysia. (2012b). Exercutive Summary Malaysia Education Blueprint 2013-2025 (Preschool to Post-Secondary Education). Putrajaya, Malaysia.
- Ministry of Education Malaysia. (2013). *Malaysia Education Blueprint 2013 2025*. Putrajaya, Malaysia. Retrieved from http://www.moe.gov.my/userfiles/file/PPP/Preliminary-BlueprintExecSummary-BM.pdf.
- MohdAzli, Y., Wong, K. T., & Noraini, M. N. (2016). Blended learning in selected journals: A content analysis using the Complex Adaptive Blended learning Systems. *International Journal of Instructional Technology and Distance Learning*, *13*(10), 47–58. Retrieved from http://itdl.org/Journal/Oct_16/Oct16.pdf#page=52.

MohdAzli, Y., Wong, K. T., Noraini, M. N., & Mahizer, H. (2016). *Pembelajaran teradun: Satu pengenalan. Dalam trend dan isu: Pengajaran dan pembelajaran* (p 1–16). Tanjong Malim: Penerbit FPPM, Universiti Pendidikan Sultan Idris.

Muraina, I. D. (2015). The factors that contribute to the continuous usage of broadband technologies among youth in rural areas: A case of northern region of Malaysia. (PhD Thesis) Universiti Utara Malaysia.

Norazilawati, A., Noraini, M. N., Nik Azmah, N. Y., & Rosnidar, M. (2013). Aplikasi persekitaran pengajaran maya (Frog VLE) dalam kalangan guru sains. *Jurnal Pendidikan Sains dan Matematik*, *3*(2), 63–76.

SaifulAfzan, B., Lazim, A., Ali, A., & Yusoff, H. (2014). Pemodelan penerimaan pelajar terhadap persekitaran pembelajaran maya (VLE). *Journal of Business and Social Development*, 2(2), 36–47.

Saltson, E., & Sharon, N. (2015). The mediating and moderating effects of motivation in the relationship between perceived organizational support and employee job performance. *International Journal of Economics, Commerce and Management*, *3*(7), 654–667. Retrieved from http://ijecm.co.uk/.

SeriRahayu, H. (2011). *Teachers' beliefs and use of ICTs in malaysian smart schools: A case study. Dalam Changing Demands, Changing Directions*. Proceedings ascilite Hobart 2011 (hal. 522–525). Retrieved from http://www.ascilite.org.au/conferences/hobart11/downloads/papers/Hamid-poster.pdf.

SitiNazuar, S. (2014). Barriers influencing teacher's technology integration in their teaching practice. *Australian Journal of Basic and Applied Sciences*, 8(23), 352–357.

Songkram, N. (2015). E-learning system in virtual learning environment to develop creative thinking for learners in higher education. *Procedia - Social and Behavioral Sciences*, *174*, 674–679. http://doi.org/10.1016/j.sbspro.2015.01.600.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston: Pearson Education. Inc.

Tarhini, A., Hone, K., Liu, X., & Tarhini, T. (2017). Examining the moderating effect of individual-level cultural values on users' acceptance of E-learning in developing countries: a structural equation modeling of an extended technology acceptance model. *Interactive Learning Environments*, 25(3), 306–328. http://doi.org/10.1080/10494820.2015.1122635.

Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. Information Systems Research, 6(2), 144-176. http://doi.org/10.1287/isre.6.2.144.

Teo, T., Fan, X., & Du, J. (2015). Technology acceptance among pre-service teachers: Does gender matter? *Australasian Journal of Educational Technology*, *31*(3), 235–251. http://doi.org/http://dx.doi.org/10.14742/ajet.v0i0.1672.

Termit, K., & Noorma, H. (2015). Teachers' readiness to utilize Frog VLE: A case study of a Malaysian secondary school. *British Journal of Education, Society & Behavioural Science*, 5(1), 20–29. http://doi.org/10.9734/BJESBS/2015/11965.

The JISC infoNet Service. (2006). *Effective use of VLEs: Introduction to VLEs*. Retrieved from http://www.jiscinfonet.ac.uk/InfoKits/effective-use-of-VLEs/introtoVLEs/printable_version.pdf.

Thompson, R. L., Higgins, C. A., & Howell, J. . (1991). Personal computing: Toward a conceptual model of utilization. *MIS Quarterly*, 15(1), 124–143. http://doi.org/10.2307/249443.

Touray, A., & Salminen, A. (2013). The impact of moderating factors on behavioral intention towards internet: A transnational perspective. *International Journal of Computer and Information Technology*, 2(6), 1035–1041. Retrieved from www.ijcit.com.

Vatanartiran, S., & Karadeniz, S. (2015). A needs analysis for technology integration plan: Challenges and needs of teachers. *Contemporary Educational Technology*, 6(3), 206–220. Retrieved

http://web.a.ebscohost.com.ezpustaka.upsi.edu.my/ehost/pdfviewer/pdfviewer?sid=02839cfb-7b1d-47cb-871a-361f9d93bc8f@sessionmgr4002&vid=1&hid=4204.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. http://doi.org/10.2307/30036540.

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory. *MIS Quarterly*, *36*(1), 157–178. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2002388.

WanZah, W. A., Hajar, M. N., Azimi, H., & Hayati, A. (2009). The conditions and level of ICT integration in Malaysian Smart Schools. *International Journal of Education and Development using ICT*, 5(2), 21–31. Retrieved from http://ijedict.dec.uwi.edu//viewarticle.php?id=618&layout=html.

Wong, K. T., Rosma, O., Goh, P. S. C., & Mohd Khairezan, R. (2013). Understanding student teachers' behavioural intention to use technology: Technology Acceptance Model (TAM) validation and testing. *International Journal of Instruction*, *6*(1), 89–105. Retrieved from http://www.e-iji.net/dosyalar/iji_2013_1_6.pdf.

Zaharah, H., Saedah, S., Ghazali, D., & Nur Hasbuna, M. S. (2015). Kajian model Blended learning dalam jurnal terpilih: Satu analisa kandungan. *Jurnal Kurikulum & Pengajaran Asia Pasifik*, *3*(1), 20–31. Retrieved from juku.um.edu.my.

Zhang, M., Liu, Y., Yan, W., & Zhang, Y. (2016). Users' continuance intention of virtual learning community services: The moderating role of usage experience. *Interactive Learning Environments*, 1-19. http://doi.org/10.1080/10494820.2016.1172242.