

ANALYSIS OF DIFFICULTY LEVEL OF INFORMATION SYSTEM STUDENTS IN COMMUNICATING ENGLISH IN INDUSTRIAL ERA 4.0

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Abstract

Purpose of this study is to describe the difficulty level of information system students in communicating English. This study was descriptive quantitative research. The subjects in this study were 100 of second semester information system students and students who repeated (30 people) in 2017/2018 at STMIK Indonesia Padang. The study instrument used was a questionnaires and it were distributed to all research subjects. The processing of questionnaire data used the construct validity test which was supported by the SPSS application. The results of the data analysis of the study shows that the difficulty level of information systems students in communication is categorized at a fairly problematic level with an percentage index of 69%. Therefore, the results of this study can be used as a reference for lecturers in designing learning modules and syllabus that matches with the level of students' ability so that they will be categorized as students who are able to compete in the industrial era 4.0.

Keywords: *communication difficulties, English, SPSS*

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INTRODUCTION

Technology world competition in the industrial era 4.0 is currently felt by all universities, especially universities which are based on technology discipline. STMIK Indonesia is a college that produces students who are able to compete in the field of Information Systems. This field of science does not only require students to be able to make a system and analyze the system, but also supported by good communication skills

Industrial era 4.0 in the aspect of communication skill requires students not only to be able to communicate at the national level but also international so that the students are able to compete globally with the knowledge they have. One of the media in international communication uses English as the language of instruction. According to Rohida (2018), states that the industrial era 4.0 and globalization require outstanding human beings and professionals with a high work ethic who do not give up. Strict competition among countries will spur one of individual in the ability to communicate in English.

The students of STMIK Indonesia who have background in information systems study program that are closely related to the world of technology and the world of industry should also have supporting abilities in communicating English. However, the preliminary observation was found in the meeting of English 1 and 2 which obtained were not able to improve the ability of the students of STMIK Indonesia both oral and written. It can be seen in Figure 1.

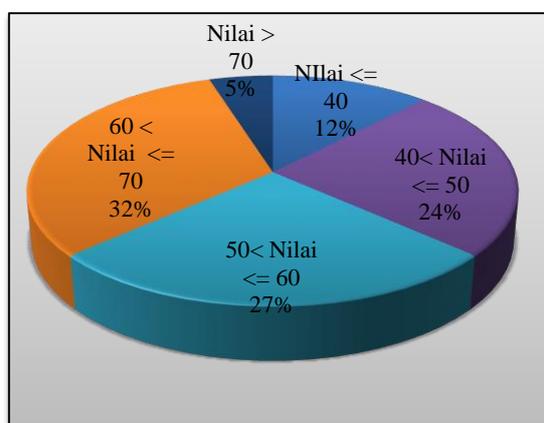


Figure 1. English Skill Averages of STMIK Indonesia Students

Based on Figure 1, the English skill averages of STMIK Indonesia students is varied, it can be categorized into several levels including low, medium and high. However, the category of low and medium are getting a quite high percentage. It illustrates that it is still difficult for students to communicate using English. Meanwhile, for students who have a computer background, have a very large opportunity in large national and international companies.

This study aims to obtain data on the descriptive quantitatively of difficulty level of English communication by students in Information Systems majors at STMIK Indonesia. The results to be achieved in this study is a valid percentage value to determine the level of difficulty of English communication skill which will have a positive impact in finding the method or design of teaching materials which can arranged and applied to students who are *Non-English Department*. Therefore, this study will discuss about "Analysis of difficulty level of information system students in communicating English industrial era 4.0".

The related theory that is used in this research are:

English Communication Ability

Communication ability is the ability to express thoughts, feelings, desires, through verbal communication or nonverbal communication to get understanding from others. Therefore, the ability to communicate has an impact on our understanding and that of others.

There are some definition of communication have provided by the expert. According to (Zahroh & Sudira, 2014) Communication skills are an ability to communicate effectively with others, using oral, written, graphical, and other non-verbal means such as expressions. Then, according to John R. Wenburg, William W. Wilmot, Kenneth K. Sereno and Edward M. Bodaken (Mulyana, 2008), there are three frameworks for understanding communication, namely communication as one-way action, communication as interaction, and communication as a transaction. Based on the classification of communication, the focus of communication taken in this study is communication as interaction.

English communication difficulties

In the process of learning English, a student has a difficulty experiences in learning English as communication. These difficulties can cause a lack of maximum student learning outcomes in english subject. Several factors of student difficulties in communicating English include lack of vocabulary in English, difficulty in memorizing, diversified vocabularies pronunciation, fear of making mistakes, fear of being mocked by friends and lack of grammar knowledge (Megawati, 2016). This is also in line with the results of the study of Afisa (2015) which stated that the factors causing difficulties in speaking English were the number of frequencies of practice speaking English and psychology (in this case it could be said to be affective factors). Therefore, the difficulties of students in communicating English are categorized in several problems summarized in the Table 1.

Table 1. The Difficulties of Students in Communicating English

Difficulties 1	Difficulty in Diversified Vocabularies Pronunciation
Difficulties 2	Vocabulary Difficulty in Mastering English Vocabularies
Difficulties 3	Difficulty due to Fear of being Mocked by Friends
Difficulties 4	Difficulty Due to the Limited Time to Learn
Difficulties 5	Difficulty Due to Irrelevant Learning Method
Difficulties 6	Difficulty Due to Lack of Self-Confidence
Difficulties 7	Difficulty Due to Constraints By Grammar When Arranging Words
Difficulties 8	Difficulty Due to Lack of Willingness in Learning English
Difficulties 9	Difficulty Due to Fast Bored

Construct Validity

Construct is a framework of a concept. Then, construct Validation is validity related to the ability of a measuring instrument in measuring the understanding of a concept that is measured. According to Jack R. Fraenkel (Siregar, 2017) construct validation (determination of construct validity) is the broadest

of its coverage compared to other validations, because it involves many procedures, including content validation and criteria validation.

How to test construct validation. A research instrument is said to be valid, if: (1) Product moment correlation coefficient exceeds 0.3; (2) Product moment correlation coefficient > r-table (α ; n-2) n = number of samples; (3) Sig value $\leq \alpha$.

Cronbach Alpha Technique Reliability Test

This technique or formula can be used to determine whether a research instrument is reabel or not, if the answers given by respondents are in the form of scales, such as 1-3, 1-5, and 1-7 or respondent's answers that interpret attitude ratings.

The criteria for a research instrument are said to be reabel by using this technique, if the reliability coefficient $[(r)_{11}] > 0.6$. Stages of reliability testing using the Cronbach alpha technique, namely: (1) determine the variance value of each question item; (2) determine the total variance value; (3) determine instrument reliability

RESEARCH METHOD

This study is quantitative with using descriptive, namely by describing the object of study at the moment based on the facts as they are then analyzed and interpreted.

The subjects in this study are 100 of second semester information system students and students who repeated (30 people) in repairing English courses in 2017/2018 at STMIK Indonesia Padang. Samples of this study are 60 of second semester students and 22 of repeat class. The sampling technique used in this study is *probability sampling*: proportional stratified sampling to the size of the proportion $\frac{85}{130}$.

Object of this study is the factors of difficulty in communicating English. The study instrument is in the form of a questionnaire which is developed based on relevant study references.

Analyzing the data (questionnaire) in this study conducted a validity test. This validity test uses construct validity. Construct validity is validity that is related to the ability of measuring tool in gauging the understanding of a concept which being measured (Siregar,

2017). In addition to testing the validity of the questionnaire, the reliability test is also carried out using alpha cronbach technique as assisted count tool in testing the construct validity of the research team by using the SPSS version 16.0 application.

RESULTS AND DISCUSSION

Test Validity

The study of validity tests carried out on the amount of data as many as 85 respondents (students) by using the SPSS program *software*. The formula used in conducting the validity test is: $r_{hitung} \geq r_{table}$ then the item statement is valid.

The results of the difficulty validity test of 85 respondents (students), which each variable has $r_{hitung} \geq r_{table}$ or $r_{hitung} \geq 0.215$. Thus, it can be concluded that all data generated by the validity test are declared valid.

Reliability Test

Reliability test conducted to 85 respondents (students), following the result of reliability test to 85 respondents shows in the Table 2.

Table 2. Test Results the Reliability

Variable	Value of Cronbach alpha	Decision
Difficulty	0.726	Reliable

Based on Table 2, it can be seen the results of a reliability test conducted to 85 respondents (students), which generates value of *Cronbach alpha* is 0.726 so that the collected data is declared reliable because the value of *Cronbach alpha* is greater from 0.6.

Evaluation of Difficulty Level of Students in Communicating English.

Evaluation of difficulty level of students in communicating English which is obtained from questionnaire is distributed to 85 of second semester students who take English courses 2. The level of difficulty is categorized into 4 categories, namely very problematic, problematic, quite problematic and no problem. Very problematic category, if the answer

score is 25% - 43.53%. Problematic, if the answer score is 43.82% - 62.35%. Quite problematic, if the answer score is 62.65% - 81.18%. No problem, if the answer score is 81.47% - 100.00%.

Research Data Description

Difficulty in Diversified Vocabularies Pronunciation

The result of data analysis on the level of difficulty in the pronunciation of various Vocabularies can be seen in the details on Table 3.

Table 3. Student Difficulty in Diversified Vocabularies Pronunciation

No	Answer Options	Fre- quency	Value	(%)
1.	Very Problematic	5	5	6
2.	Problematic	32	64	38
3.	Quite Problematic	41	123	48
4.	No problem	7	28	8
Total		85	220	100

Total value is 220 = Quite Problematic
Value percentage index 220: $340 \times 100\% = 65\%$

The results of data processing on Table 4.1 found the level of difficulty experienced by students in English vocabularies pronunciation is 65%. This percentage is categorized as quite problematic. Therefore, it needs a fairly creative teaching method in the teaching and learning process in the classroom, one of which uses interactive video media.

According to Kustandi & Sutjipto (2011), in teaching students about ways to use the "*organs of speech*" to speak words or sentences (pronunciation), then the video media will be more appropriate to use". The video is suitable for practicing pronunciation, besides displaying a recording or moving image, it also provides sound. The diagram above is the percentage of the number of students who have difficulty in pronunciation of vocabularies.

Difficulty in Mastering English Vocabularies

The result of data analysis of English difficulties related to the number of words that

must be mastered can be seen in the details on Table 4.

Table 4. Percentage of Students who Experience Difficulty due to Mastering a lot of Vocabularies in English

No	Answer Options	Fre- quency	Value	(%)
1.	Very Problematic	4	4	5
2.	Problematic	37	74	43
3.	Quite Problematic	41	123	48
4.	No problem	3	12	4
Amount		85	213	100

Total value is 213 = Quite Problematic
 Value percentage index 213: $340 \times 100\% = 63\%$

The results of data processing on Table 4.2 found the level of difficulty experienced by students is due to too many vocabularies which must be mastered in English at the percentage index is 63%. This percentage is categorized as quite problematic, so it needs a solution to face this problem.

According to Nugroho, Nurkamto, & Sulistyowati (2012) to improve vocabularies skill for students by using *flash cards* will be more appropriate to use. *Flash cards* are suitable for adding vocabulary because the presence of images, texts and symbols so that it attracts the students' attention, making students motivated and focused on learning vocabulary. This method can later be applied in the teaching methods at STMIK Indonesia Padang.

Difficulty due to Fear of being Mocked by Friends

The result of data analysis in English difficulty due to fear of being mocked by friends can be seen in the details on Table 5.

The result of data processing on Table 5 found the level of difficulty experienced by students due to fear of being mocked by friends is at 81%. It means that the percentage of this difficulty level is categorized as no problem. It shows that the mentality of students in facing the mockery of friends can still be overcome.

Table 5. Difficulty table due to Fear of Being Mocked by Friends

No	Answer Options	Fre- quency	Value	(%)
1.	Very Problematic	5	5	6
2.	Problematic	11	22	13
3.	Quite Problematic	26	78	31
4.	No problem	43	172	50
Total		85	277	100

Total value is 277 = No Problem
 Value percentage index 277: $340 \times 100\% = 81\%$

Difficulty Due to the Limited Time to Learn

The result of data analysis in English difficulty due to the limited time to study can be seen in the details on Table 6.

Table 6. Difficulty Table Due to the Limited Time to Learn

No	Answer Options	Fre- quency	Value	(%)
1.	Very Problematic	12	12	14
2.	Problem	26	52	31
3.	Quite Problematic	31	93	36
4.	No problem	16	64	19
Total		85	221	100

Total value is 221 = Quite problematic
 Value percentage index 221: $340 \times 100\% = 65\%$

The results of data processing Table 6 found the level of difficulty experienced by students due to limited time to learn is 65%. The result of this percentage indicates that student' interest and motivation in learning which their background *Non English department* in improving their English communication skill is still low. This is because STMIK Indonesia has background in the information system study program. The students only focus on their knowledge so that there is a limited effort of students in *upgrading the* ability to communicate English in personal skills for students.

According to Nurhidayati (2016) "To take the time to study, students must be able to manage time with technique of *problem solving* and time management". *Problem solving* and time management are suitable because

both require students to have planning which is organized, consistent, purposeful and discipline in using time. In addition, techniques of *problem solving* can also train students to think critically in identifying problems, learning habit and finding solution to face problems.

Difficulty Due to Irrelevant Learning Method

The result of data analysis on English difficulty related to irrelevant learning method. It can be seen in the details on Table 7.

Table 7. Difficulty Table Due to Irrelevant Learning Method

No	Answer Options	Fre- quency	Value	(%)
1.	Very Problematic	7	7	8
2.	Problematic	25	50	29
3.	Quite Problematic	31	93	37
4.	No problem	22	88	26
	Total	85	238	100

Total value is 238 = Quite Problematic
Value percentage index 238: 340 x 100% = 70%

The result of data processing on Table 7 obtained the level of difficulty experienced by students due to the irrelevant learning method is at 70%. This percentage of difficulty level is categorized as quite problematic, so it needs a solution to overcome this problem.

According to Wilson, Copeland Solas, & Guthrie-Dixon (2016) stated that for relevant learning method, use *Mind Map*. *Mind Map* is suitable because it can open the potential of the human brain regarding words, images, numbers, logics, rhythms, colors, spatial awareness in a unique way so that students can improve their language skill. Another learning method that can be used to improve students learning is using interactive CD in improving learning student result n effectively and cognitively (Surjono & Susila, 2013)

Difficulty Due to Lack of Self-Confidence

The result of data analysis on English difficulty related to lack of self-confidence. It can be seen in the details on Table 8.

Table 8. Difficulty Table Due to Lack of Self-Convidence

No	Answer Options	Fre- quency	Value	(%)
1.	Very Problematic	18	18	21
2.	Problematic	21	42	25
3.	Quite Problematic	36	108	42
4.	No problem	10	40	12
	Total	85	208	100

Total value is 208 = Problematic
Value percentage index 208: 340 x 100% = 61%

The result of data processing on Table 8 found the level of difficulty experienced by students due to the lack of self-confidence of students in communicating English at number 61 %. This level of difficulty is categorized on the problematic level. So, a solution is needed to overcome this problem. Therefore, a special community is needed for students to exchange ideas and communicate each other with English in order to create self-confidence. This is also supported by expert opinion.

According to Deswarni (2017) to increase self-confidence, students must do regeneration". By entering this cadre, students are required to participate in it. From this matter, students usually exchange ideas, convey ideas or find solutions to solve problems so that it can increase social interaction and can train and be able to launch their communication.

Difficulty Due to Constraints By Grammar When Arranging Words

The result of data analysis on English language difficulty related to constraint by grammar can be seen in the details on Table 9.

The result of data processing on Table 9 obtained the level of difficulty experienced by students due to being constraint by grammar in arranging English words is at 61%. This level of difficulty is categorized as the problematic level. Therefore, it is better for students who are not belonging to English study programs to be better not too focus on the *grammar*. It limits the students at the beginner level in communicating English.

Table 9. Difficulty Table due to Constraint by Grammar When Arranging Words

No	Answer Options	Fre-quency	Value	(%)
1.	Very Problematic	10	10	12
2.	Problematic	33	66	39
3.	Quite Problematic	35	105	41
4.	No problem	7	28	8
	Total	85	209	100

Total value is 209 = Problem
Value percentage index 209: $340 \times 100\% = 61\%$.

Difficulty Due to Lack of Willingness in Learning English

The result of data analysis on English difficulty related to lack of willingness in learning English can be seen in the details on Table 10.

Table 10. Difficulty Table Due to Lack of Willingness in Learning English

No	Answer Options	Fre-quency	Value	(%)
1.	Very Problematic	6	6	7
2.	Problematic	17	34	20
3.	Quite Problematic	27	81	32
4.	No problem	35	140	41
	Total	85	261	100

Total value is 261 = Quite Problematic
Value percentage index 261: $340 \times 100\% = 77\%$

The result of data processing on Table 10 found the level of difficulty experienced by students due to lack of willingness in learning English is at 77%. It is categorized as quite problematic. The result of this percentage of difficulty level indicates that students' willingness or intention to learn English is very low.

Difficulty Due to Fast Bored

The result of data analysis on English difficulty due to fast bored can be seen in the details on Table 11.

Table 11. Difficulty table Due to Fast Bored

No	Answer Options	Fre-quency	Value	(%)
1	Very Problematic	6	6	7
2	Problematic	16	32	19
3	Very Problematic	35	105	41
4	Problematic	23	92	27
	Total	85	240	100

Total value is 252 = Sufficient Problems
Value percentage index 252: $340 \times 100\% = 74\%$

The result of data processing on Table 11 found the level of difficulty experienced by students due to fast bored in learning English is at a percentage of 74% which is categorized as quite problematic. The result of this percentage of difficulty level indicates that students' willingness or intention to learn English is very low.

Difficulty Due to No Supporting Facilities

The result of data analysis on English difficulty related to no supporting facilities can be seen in the details in Table 4.10

Table 12. Difficulty Table Due to No Supporting Facilities

No	Choice Answer	Fre-quency	Value	(%)
1.	Very Problematic	11	11	13
2.	Problematic	16	32	19
3.	Quite Problematic	35	105	41
4.	No problem	23	92	27
	Total	85	240	100

Total Value is 240 = Quite Problems
Value percentage index 240: $340 \times 100\% = 71\%$

The result of data processing on Table 12 obtained the level of difficulty experienced by students because there are no supporting facilities that support them in learning English is at a percentage of 71% which is categorized quite problematic. The result of the percentage level of difficulty indicates that limited facilities in learning English are also factor that greatly influences their English communication skills.

The Results of Research Analysis

The result of the descriptive quantitative research data that have been described can be seen that the difficulty level of information system students in communicating English is categorized at the level of Quite Problematic with the percentage index is 69%.

The percentage results obtained from the total value of all questions related to the difficulties experienced by students when communicating in English. Data on all these difficulties can be summarized in Table 13.

Table 13. Data of All Difficulties

No	Answer Options	Item Number
1.	Very Problematic	86
2.	Problematic	470
3.	Quite Problematic	999
4.	No problem	784
Total Value		2339
Total Value Max		3400
Index Percentage		69%
Category		Quite Problematic

CONCLUSION

Based on the result of descriptive quantitative research data in this study can be concluded that the difficulty level of information system students in communicating English is categorized at the level of Quite Problematic with the percentage of difficulty level is 69%.

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