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The Influence of Understanding UNPAB Students and Learning Motivation on the Use of Computer-Based Information Systems

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Abstract: This study aims to analyze the influence of students' understanding and learning motivation at Universitas Pembangunan Panca Budi (UNPAB) on the utilization of computer-based information systems. A quantitative descriptive research method was employed, with data collected through questionnaires from 31 respondents selected using the Slovin formula. Data analysis included normality tests, linearity tests, multiple linear regression, t-tests, F-tests, and determination coefficients. The findings revealed that students' understanding significantly and positively affects the use of computer-based information systems (effective contribution coefficient: 61.1%). Learning motivation also has a significant and positive influence (effective contribution: 16.1%). Collectively, these two variables contribute 77.2% to the utilization of computer-based information systems. This study emphasizes the importance of enhancing students' understanding and learning motivation to optimize the use of information technology in the learning process. Recommendations include technology training, integrating digital literacy into the curriculum, and creating a supportive learning environment.

Keywords: Student Understanding, Learning Motivation, Information systems, Computer-Based

Introduction

In today's digital era, the use of computer-based information systems has become an integral part of the learning process in various educational institutions, including Universitas Pembangunan Panca Budi (UNPAB). Information systems not only facilitate the management of academic data, but also increase effectiveness and efficiency in the teaching and learning process. However, the successful implementation of this information system is greatly influenced by students' understanding and motivation to learn.

Students' understanding of computer-based information systems is a key factor that determines the extent to which they can utilize the technology in academic activities. Students who have a good understanding will be more able to operate the information system effectively, thus improving the quality of learning. Conversely, a lack of

understanding can result in difficulties in using the system, which will ultimately affect their learning outcomes.

In addition to understanding, learning motivation also plays an important role in the use of information systems. High motivation encourages students to be more active and creative in learning, including in utilizing information technology. Motivated students tend to be more involved in the process of learning and more open to the use of available tools and resources, including computer-based information systems.

This study aims to examine the influence of UNPAB students' understanding and learning motivation on their use of computer-based information systems. By exploring the relationship between these three variables, this research is expected to provide valuable insights for developing more effective and efficient learning strategies within the university environment.

Through this research, it is hoped that it can make a positive contribution to the development of education at UNPAB and provide recommendations for universities in improving the quality of the use of computer-based information systems among students.

Theoretical Foundation

1. Understanding of Information Systems

Understanding refers to the ability to comprehend, analyze, and apply knowledge about how information systems operate, their functions, and how they can be utilized to achieve specific objectives. A user's understanding of information technology significantly influences their acceptance and use of the technology. The better students' understanding, the more effectively they can use information systems in academic activities.

The term "understanding" is derived from the word "understand," which means to grasp or comprehend accurately, while "understanding" refers to the process of acquiring knowledge or comprehension. According to the General Dictionary of Indonesian Language (Poerwadarminta, 2006, as cited in Lestari & Dewi, 2020), understanding is defined as the ability to be knowledgeable and comprehend correctly, while it also denotes the process, method, or act of comprehending or making sense of something.

2. Learning Motivation

"Motivation to learn is an internal drive that encourages individuals to engage in the learning process or achieve academic targets. It involves an interest, desire or determination to improve understanding and achieve in an educational context. Motivation to learn can come from various sources, such as the desire to achieve personal goals, satisfaction in learning, curiosity, encouragement from the environment, or other intrinsic and extrinsic motivational factors." (Nia Afrilda Nasution et al., 2024)

According to (Sardiman 2016 in Journal of Education and Teaching et al., 2024a), "learning motivation is the overall driving force within students that gives rise to

learning activities, which ensures the continuity of learning activities and gives direction to learning activities, so that the desired goals of the subject can be achieved."

3. **Use of Computer-Based Information Systems**

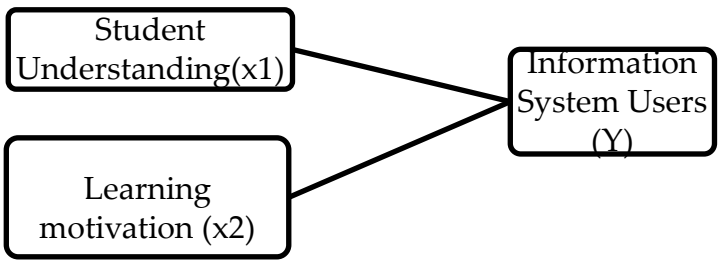
The use of computer-based information systems refers to the application of information technology in managing data and information to support the decision-making process has an important role. According to (Pranoto et al., 2024) "Information systems are a collection of integrated components to collect, process, store, and disseminate information to support decision making, coordination, supervision, analysis, and visualization within the organization. Information systems consist of three main components: input, process, and output. Inputs are the resources that are fed into the information system, such as data or information. Processes are the activities performed to process inputs into useful information. Output is the result of the process, such as a report or analysis."

"Information technology is the study of the design, implementation, development, support or management of computer-based information systems, especially hardware and software." (According to ITTA (Information Technology Association of America) in Journal of Education and Teaching et al., 2024b) "the definition of information technology is the study, design, implementation, development, support or management of computer-based information systems, specifically computer hardware and software applications. Information technology utilizes electronic computers and computer software to transform, store, process, protect, transmit and obtain information securely."

4. **Relationship between Understanding, Learning Motivation, and Information System Usage**

Based on the aforementioned theories, there is a significant relationship between students' understanding, learning motivation, and the use of computer-based information systems. Strong understanding enhances students' confidence in utilizing technology, while high learning motivation drives them to be more proactive in using information systems. Therefore, this study seeks to empirically investigate the impact of these two variables on the use of computer-based information systems among UNPAB students.

Conceptual framework



Methods

"Slovin Method The slovin formula is one of the formulas studied in statistics. This slovin formula is applied in determining the minimum sample size required in a study. The slovin formula is as follows:

$$n = \frac{N}{1+N\,e^2}$$

Figure 1. Slovin's formula

Description:

n = Sample size/number of respondents

N = Population size

E = Percentage of allowance for accuracy of sampling error that can still be tolerated; e = 0.1

In the Slovin formula there are the following provisions: The value of e = 0.1 (10%) for large populations The value of e = 0.2 (20%) for small populations.

So the sample range that can be taken from the slovin technique is between 10-20% of the research population. Population is the entire target object, namely all UNPAB students. The retrieval method used is a questionnaire, which is a data collection technique carried out by asking questions. To determine the number of samples, use the following slovin formula:

$$n = \frac{310}{1+10\,(0{,}1)^2}$$

$$n = 31$$

Based on the above calculations, a sample size of 31 respondents was obtained. Furthermore, in this study, these 31 samples will be distributed and obtained data in the form of questionnaires to UNPAB students." (sumantri, 2024)

"Research is defined as a process of collecting and analyzing data that is carried out systematically and logically to achieve certain goals. Data collection and analysis use scientific methods, both quantitative and qualitative, experimental or non-experimental, interactive or non-interactive. These methods have been developed intensively, through various trials so that they have standardized procedures. Quantitative research is a systematic scientific study of parts and phenomena and their causality. Quantitative research is defined as a systematic investigation of phenomena by collecting data that can be measured by performing statistical, mathematical or computational techniques. Quantitative research is largely conducted using statistical methods used to collect quantitative data from research studies." (Rustamana et al., 2024)

"This research is a quantitative descriptive research. Because in this study, researchers analyzed data on self-confidence and learning motivation on the level of

understanding of accounting computers using a questionnaire and tried to reveal a phenomenon using the basis of numerical calculations." This is in accordance with Sugiyono's opinion (2008: 14), quantitative descriptive research is research with the intention of obtaining data in the form of numbers or graded qualitative data.

"The research was conducted at Universitas Pembangunan Panca Budi (UNPAB) from various study programs that use computer-based information systems. The sampling technique is a random sampling technique from the population. The data collection technique uses a questionnaire, the variables in this study consist of independent variables and dependent variables. The independent variable is the level of student understanding of the use of computer-based information systems (Y) and the dependent variable is the understanding of UNPAB students (X1) and Learning Motivation (X2).

This study used an instrument in the form of question items in the form of a questionnaire which had previously been tested on test subjects totaling 30 students. The results of the instrument trial were analyzed using the validity test and reliability test. The results of data collection were then tested using the prerequisite analysis test consisting of normality test and linearity test. Furthermore, data analysis techniques use multiple linear regression analysis, t test, F test, coefficient of determination, relative contribution and effective contribution." (Giyarni, 2014).

Table 1. Size of Research Variables

NO	VARIABLES	QUESTION
1	Student Understanding (x1)	Knowledge of the basic workings of computer-based information systems
		ability to understand the features of computer-based information systems
		basic engineering problem-solving skills
		ease of understanding and using the system
		Effectiveness of using computer-based information systems for learning activities
2	Learning motivation (x2)	Interest in learning new things about information technology
		Curiosity related to information technology and systems
		the importance of using the system for self-development
		interest in technology-assisted learning
		favorability in using computer-based information systems
3	Information system users (Y)	Frequency of use of computer-based information systems for academic activities.
		Comfort in using computer-based information systems.
		Effectiveness of the computer-based information system provided.
		Utilize the system to find additional learning resources.

		The effect of using the system on understanding lecture material.

Results and Discussion

1. Normality Test

The normality test is an essential component of the data analysis prerequisites. Its purpose is to assess whether the data distribution follows or approximates a normal distribution. In this study, the normality test is conducted using the Liliefors method or the SPSS for Windows Version 11 software. The criterion for normality is that the data is considered normally distributed if the significance value is greater than 0.05.

Table 2. One Sample Kolmogorov-smirnov Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		31
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	1,20325334
Most Extreme Differences	Absolute	,088
	Positive	,085
	Negative	-,088
Test Statistic		,088
Asymp. Sig. (2-tailed)		,200[c,d]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Based on the table above, the significance value is 0.200, the significance value of the research data exceeds 0,05. So it can be stated that the date is normally distributed.

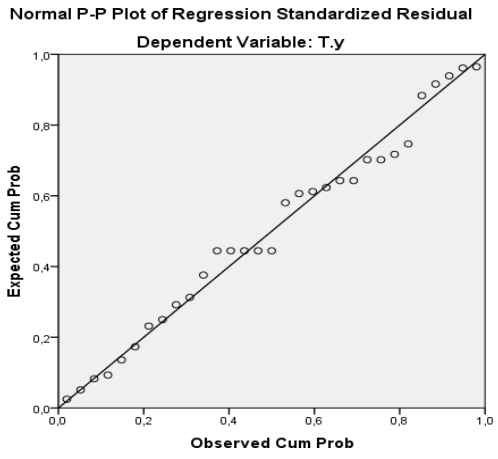


Figure 2. Normality Probability Plot Graph

Based on the graph above, the distribution of data in the probability plot follows and is parallel to the diagonal line with the distribution of data not forming a horizontal line perpendicular to the diagonal line on the probability plot. So it is known that the data distribution is normal.

Heteroscedasticity Test

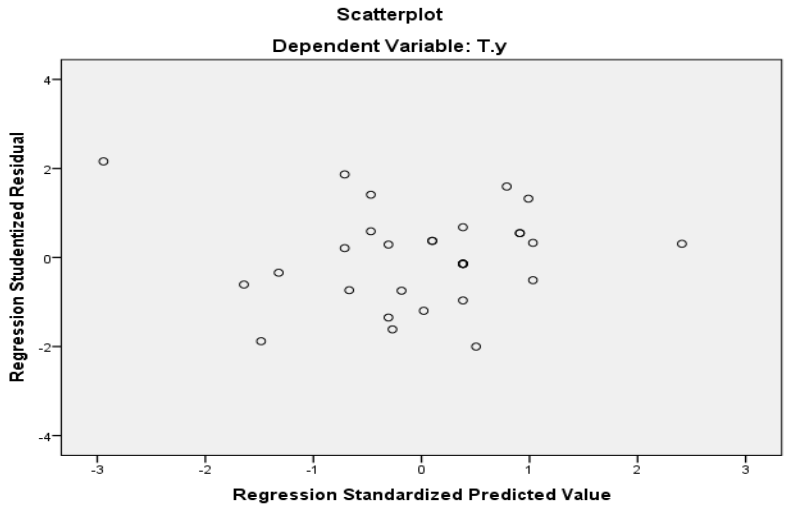


Figure 3. Heteroscedasticity Test Results

Based on the table above, it can be seen that the distribution of residual data is random and does not make a certain pattern. The distribution of data is also around 0 on the scatterplot. Then the data is declared not to have heteroscedasticity. Conversely, if the dots form a certain pattern, then this indicates a problem with the regression model.

2. Linearity Test

Linearity test is a satatistical method used to test whether there is a relationship between two variables in a research method. There is also a summary of the results of the linearity test conducted using the SPSS For Windows Vesri 11 program.

Table 3. Linearity Test Results

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
T.y * T.x1	Between Groups	(Combined)	164,374	10	16,437	12,453	,000
		Linearity	138,545	1	138,545	104,959	,000
		Deviation from Linearity	25,829	9	2,870	2,174	,071
	Within Groups		26,400	20	1,320		
	Total		190,774	30			

T.y*T.x1

Table 4. Linearity Test Results

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
T.y * T.x2	Between Groups	(Combined)	122,377	10	12,238	3,578	,007
		Linearity	76,880	1	76,880	22,480	,000
		Deviation from Linearity	45,497	9	5,055	1,478	,223
	Within Groups		68,397	20	3,420		
	Total		190,774	30			

T.y*T.x2

It is known from the test results above that there is a substantial linearity relationship between the UNPAB student understanding variable (X1) and the level of use of computer-based information systems (Y), as shown in the table description above, which is 0.071> 0.05 and learning motivation data (X2) with the level of use of computer-based information systems (Y), which is 0.223> 0.05.

3. Multiple linear regression analysis

Multiple linear analysis is a statistical technique used to assess the strength and direction of the relationship between a dependent variable and two or more independent variables. Based on the results of a multiple linear regression analysis conducted using the SPSS for Windows Version 11 software, the following findings were obtained:

Table 5. Multiple Linear Regression Analysis Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,209	2,009		1,100	,281
	T.x1	,630	,093	,717	6,740	,000
	T.x2	,268	,113	,253	2,381	,024

a. Dependent Variable: T.y

Based on the table above, it can be seen that the regression equation is:

Y=2.209 + 0.630T.x1 + 0.268T.x2

Based on this equation, it can be explained:

A. A= 2.209 means that if T.x1 and T.x2 are equal to zero, then the average value of the dependent variable T.y is estimated at 2.209.

B. Coefficient b1 = 0.630, meaning that the variable T.x1 has a positive effect. If the T.x1 score increases by one point, the T.y level is estimated at 0.630.
C. Coefficient b2 = 0.262, meaning that the T.x2 variable has a positive effect. If the T.x2 score increases by one point, the T.y level is estimated at 0.262.

4. T-test

The t-test is a statistical method used to test the significance of coefficients in linear regression. This test aims to determine whether the independent variable (predictor) significantly affects the dependent variable (response).

Table 6. Results of the t-test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,209	2,009		1,100	,281
	T.x1	,630	,093	,717	6,740	,000
	T.x2	,268	,113	,253	2,381	,024

a. Dependent Variable: T.y

According to the table above, it is known that the significance value is 0.000 and the value of f count is 47.491, with the value of f (table) of 3.34 (df1 = 28 & df2 = 2), it is known that the value of f count exceeds f table 47.491 > 3.34. So it is stated that student understanding and learning motivation towards the use of computer-based information systems, H 3 is accepted.

5. F test

The F test is a statistical method used in regression analysis to determine whether the overall regression model is significant. In other words, the F test assesses whether the independent variables collectively (simultaneously) have a significant impact on the dependent variable.

Table 7. F Test Results

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	147,340	2	73,670	47,491	,000[b]
	Residual	43,435	28	1,551		
	Total	190,774	30			

a. Dependent Variable: T.y

b. Predictors: (Constant), T.x2, T.x1

Based on the table above, it is clear that the significance value is 0.000, with an F-calculated value of 47.491 and an F-table value of 3.34 (df1 = 28, df2 = 2). Since the F-calculated value is greater than the F-table value (47.491 > 3.34), it can be concluded that student understanding and learning motivation have a significant influence on the use of computer-based information systems, thereby confirming that H3 is accepted.

6. Coefficient of Determination

The coefficient of determination indicates the extent to which variations in the dependent variable Y are explained by the independent variable X, or, in other words, the degree to which X influences Y.

Table 8. Coefficient of Determination Test Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,879[a]	,772	,756	1,245

a. Predictors: (Constant), T.x2, T.x1

According to the table above, the R^2 value is 0.772, indicating that the total effect of UNPAB students' understanding on the use of computer-based information systems is 0.772 or 77.2% when considered simultaneously. The remaining 22.8% (100% - 77.2%) is influenced by other variables not included in the linear regression equation.

7. Relative Contribution and Effective Contribution

Relative contribution and effective contribution are two essential concepts in statistical analysis, particularly in multiple linear regression. These concepts are used to assess the degree to which each independent variable (predictor) contributes to the variation in the dependent variable (outcome). Based on the calculations of relative and effective contributions, the variable "understanding among UNPAB students" accounted for a relative contribution of 79.1% and an effective contribution of 61.1%, while "learning motivation" accounted for a relative contribution of 20.9% and an effective contribution of 16.1%. Together, these two variables contributed a total of 77.2% to the utilization of computer-based information systems.

Discussion

The Effect of Understanding UNPAB Students (X1) on the Use of Computer-Based Information Systems

The test results regarding the relationship between UNPAB students' understanding and the use of computer-based information systems indicate a significant and positive

influence. This is evidenced by the comparison between the t-calculated value and the t-table value (6.740 > 2.048) with a significance value of 0.000 < 0.05, leading to the acceptance of H1. These findings demonstrate that the level of understanding among UNPAB students is a critical factor in promoting the use of computer-based information systems. The better students understand an information system, the more likely they are to use it effectively and efficiently.

Effect of Learning Motivation (X2) on the Use of Computer-Based Information Systems

The test results between learning motivation and the use of computer-based information systems show a significant and positive influence which can be seen from the comparison of the t calculated value and the t (table value 2.381> 2.048) with a significance of 0.000 <0.005, then the decision H 2 is accepted. These results prove that the effect of learning motivation is a very important factor in encouraging students to utilize information technology in their learning process.

The Effect of UNPAB Student Understanding (X1) and Learning Motivation (X2) on the Use of Computer-Based Information Systems

The test results examining the relationship between UNPAB students' understanding, learning motivation, and the use of computer-based information systems show a significant and positive influence. This is evident from the comparison of the F-calculated value and the F-table value (47.491 > 3.34) with a significance value of 0.000 < 0.05, leading to the acceptance of H3. These findings demonstrate that the higher the level of understanding among UNPAB students of an information system, and the greater their learning motivation, the more likely they are to actively use the system in their learning activities.

Conclusion

This study highlights the significance of students' understanding and learning motivation in utilizing computer-based information systems at Universitas Pembangunan Panca Budi (UNPAB). The findings indicate that students' understanding significantly impacts the use of these systems, contributing effectively at 61.1%. This demonstrates that the better students comprehend information technology, the more efficiently they utilize the system in their academic activities.

Learning motivation is equally significant, contributing 16.1% to the effective utilization of computer-based information systems. Greater motivation encourages students to be more proactive and innovative in leveraging information technology, leading to a more dynamic and efficient learning experience. Together, these two factors account for 77.2% of the effective use of information systems.

The research underscores the need for universities to focus on enhancing student understanding and learning motivation to optimize the use of information technology in education. Recommended strategies include providing technology training, developing an integrative curriculum, and creating a supportive learning environment that encourages the effective application of computer-based information systems.

Limitations

The limitations of this study include several aspects that may affect the validity and generalizability of the results. First, the study only involved 31 students as respondents, so this small sample size limits the representation of the wider population. In addition, the study only examined two independent variables, namely student understanding and learning motivation, without considering other factors such as technological facilities, institutional support, or previous experience that can also affect the use of computer-based information systems. In addition, this study was only conducted at Universitas Pembangunan Panca Budi (UNPAB), so the results may be less relevant to be applied at other universities with different characteristics. Finally, the study used a quantitative approach without any deepening through qualitative methods, thus not providing deeper insight into the reasons or context behind the quantitative findings.

Research Implications

This study provides a valuable contribution to understanding the factors that influence the adoption of computer-based information systems in higher education. The findings indicate that students' comprehension and learning motivation play a significant role in driving the use of information technology, serving as a foundation for further research in the field of educational technology.

In terms of academic policy development, the study suggests integrating digital literacy into the curriculum. This can be achieved through structured training programs, incentivizing technology use, and fostering a learning environment that supports the development of students' IT skills. By doing so, universities can better equip students to meet the challenges of the digital age.

References

Giyarni, G. (2014). The Effect of Self-Confidence and Learning Motivation on the Level of Understanding of Computer Accounting in Accounting Education Study Program Students in Semester VIII of Muhammadiyah Surakarta University in the 2013/2014 Academic Year (Doctoral dissertation, Muhammadiyah Surakarta University).

Hendarmin, R. M. R. (2023). THE EFFECT OF ACCOUNTING UNDERSTANDING ON THE UTILIZATION OF ACCOUNTING INFORMATION SYSTEMS AND ITS IMPLICATIONS FOR THE QUALITY OF ACCOUNTING INFORMATION. Global Ecoment Journal, 8(1), 48-51.

Kristanto, S. B. QUALITY OF INFORMATION SYSTEMS AND LEVEL OF STUDENT UNDERSTANDING IN THE USE OF ACCOUNTING SOFTWARE.

Lestari, N. L. W. T., & Dewi, N. N. S. R. T. (2020). The effect of accounting understanding, utilization of accounting information systems and internal control systems on the quality of financial statements. KRISNA: Collection of Accounting Research, 11(2), 170-178.

Meirina, E. (2017). The Effect of Basic Accounting Understanding and Computer Operating Skills on Accounting Students' Use of Accounting Computers. Pundi Journal, 1 (1).

Nasution, N. A., Ginting, D. A. B., Rambe, I. S., & Syahrial, S. (2024). The Role of Parents in Motivating Children's Learning at Home. Nakula Journal: Center for Education, Language and Social Sciences, 2(3), 25-31.

Pranata, J., Pitoewas, B., & Nurmalisa, Y. (2017). The Effect of Computer-Based National Examination Implementation on Class XII Students' Learning Motivation (Doctoral dissertation, Lampung University).

Pranoto, S., Sutiono, S., & Nasution, D. (2024). Application of UML in the Design of Development Reporting and Evaluation Information System in the Development Administration Section of the Regional Secretariat of Tebing Tinggi City. Surplus: Journal of Economics and Business, 2(2), 384-401.

Pratama, S. Y., Faslah, R., & Marsofiyati, M. (2024). The Effect of Information Technology on Learning Motivation of Smkn 22 Jakarta Students. Cendikia: Journal of Education and Teaching, 2(10), 479-488.

ROMADHONI, I. THE EFFECT OF BASIC ACCOUNTING UNDERSTANDING, COMPUTER KNOWLEDGE AND COMPUTER ANXIETY ON THE SKILLS OF ACCOUNTING STUDENTS AT SRIWIJAYA UNIVERSITY TO OPERATE ACCOUNTING SOFTWARE.

Rosdiana, R. (2013). Computer-based Learning Media Development. Al-Khwarizmi: Journal of mathematics and natural science education, 1(2), 87-100.

Rustamana, A., Wahyuningsih, P., Azka, M. F., & Wahyu, P. (2024). Quantitative Method Research. Sindoro: Cendikia Pendidikan, 5(6), 81-90.

Sumantri, E., & Maulana, Y. (2024). Acceptance of ALODOKTER Public Health Technology Using the Technology Acceptance Model (TAM) Method. INTECOMS: Journal of Information Technology and Computer Science, 7(1), 227-236.

Zabir, A. (2018). The effect of learning technology utilization on the learning motivation of smpn 1 lanrisang Pinrang Regency students (Doctoral dissertation, MAKASSAR STATE UNIVERSITY).