

## THE RELATIONSHIP OF PERCEIVED USEFULNESS (PU) AND ATTITUDE TOWARDS USING (ATU) IN STUDENTS OF SCOLA USERS LEARNING BIOLOGY AT DEDIKASI EDUKASI KUALIVA SENIOR HIGH SCHOOL

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### Abstract

*The material on Biology subjects is broad and abstract concepts, so that online biology learning media such as e-learning are needed. Based on observations, Dedekadasi Edukasi Kualiva (DEK) SHS is one of the private schools in Padang that uses Scola as an e-learning platform in biology learning even though learning is done offline. However, it has never been analyzed the success of the use of Scola in biology learning in high school deck with any instrument so it is not known the relationship of PU with ATU in students using Scola biology learning in DEK high school. The purpose of this study was to determine the relationship of PU with ATU in students using Scola biology learning at DEK high school. This type of research is descriptive correlation with quantitative approach conducted at DEK high school. The sample consisted of 48 students, in Class X Phase E, XI science, and XII science, with sampling techniques, namely total sampling techniques. Analysis of the data used is Pearson product moment correlation test and t test after knowing the normal distribution of data. The results of the study using Pearson product Moment correlation test showed a positive correlation with the value of  $r = 0.7587$  (strong correlation) and the value of the count (7.899) > table (1.679). These results indicate that the hypothesis is accepted. Therefore, PU has a significant positive relationship to the Attitude towards Using (ATU) in students who use Scola biology learning at DEK high school..*

**Keywords :** ATU, Biology learning, PU, Scola

### INTRODUCTION

Learning biology-based e-learning is one of the innovations that play a major role to improve the ability of learners. Learning biology using e-learning will make it easier for teachers and students to share, as well as obtain the right information or knowledge within the scope of broad biological materials from various sources with the help of computers and the Internet (Saparuddin, 2022). The process of learning biology can be done using a variety

of e-learning, including the following, Quipper School, Atutor, Moodle, Edmodo, Scola, and others (Buntoro et al., 2018).

Scola is an online learning medium. Scola has various advantages, including ease of classroom administration, teacher discussion space with students or learners with other learners, evaluate the performance of learners, monitor the results and achievements of learners, and provide content for learners (Khaerani, 2022). Scola has been applied by 20,000 users in 80 schools spread throughout Indonesia, including SHSN 1 Tualang in Riau, Santo Aloysius in Bandung, BPK Penabur in Bandung, Al Azhar Syifa in Parahyangan, SHS Dedekasi Edukasi Kualiva (DEK) in Padang, and other excellent schools (Imtiyaz, 2020).

Based on an interview with the head of DEK high school on November 24, 2022, that biology learning at DEK high school uses e-learning even though learning is done offline. The use of e-learning in the learning process at DEK high school has been going on for 3 years, but the use of Scola as an e-learning platform when the learning process is only used for 1 year. The change of e-learning used in the learning process according to the head of DEK high school because of the factors that affect the acceptance of the use of e-learning. The use of Scola is already integrated in the system and is already running normally, not in the test phase.

Response students Scola users on learning biology in DEK high school, feel happy because Scola has many features. Learners can access Scola easily as well as use it actively. Learners find the use of Scola helpful for online discussions, acquiring materials, collecting assignments, and conducting exams online. However, some students experience obstacles such as difficulty logging in due to errors, unstable networks, hard-to-remember login codes, and other obstacles. According to Park (2009), these constraints can affect the successful use of e-learning at the time of learning biology.

The use of e-learning can be said to be successful when there is acceptance by users. The success of e-learning used in biology learning is determined from the response of how learners can receive and utilize e-learning effectively and efficiently when learning biology (Hamid et al., 2020). The acceptance of an information technology can be explained through various theories including, Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Innovation Diffusion Theory (IDT), Technology Acceptance Model (TAM), and other theories (Prmono, 2019). However, King & He (2006) reported the results of his

research that with its simplicity and adaptability, TAM is stated to be a strong and resilient model for predicting user acceptance of an information technology.

TAM is an information technology acceptance analysis model introduced by Fred D. Davis in 1986. TAM can be used as a foundation to study and understand how usage behavior affects the utilization and acceptance of Information Technology (Wijaya & Negara, 2021). TAM aims to provide an explanation of a determinant of acceptance or rejection of an information technology (Davis et al., 1989). Tam Model there is a variable perceived usefulness or Perceived Usefulness (PU) which can affect the user's attitude or Attitude towards Using (ATU) (Santi & Sudiasmo, 2020).

PU is a person's level of confidence that using a particular technology will bring benefits to its users. Users are likely to use or not use the technology to the extent that they believe that the technology will be beneficial to the user, and can improve user performance (Davis, 1989). PU can be used as a strong determinant to explain the reasons for the acceptance of an information technology, adoption, can predict user attitudes or attitudes towards Using (ATU) (Adawiyah, 2022).

ATU is a person's initial response to an object that is pleasant or unpleasant. In theory, ATU is a reflection of feelings towards an object that is good or bad (Rahayu et al., 2017). ATU can be used as a parameter of acceptance or rejection of the technology used because through ATU will display positive or negative feelings towards the acceptance of technology. ATU will have a great influence on the success of the technology used (Islami, 2021).

The relationship of PU with ATU can explain the acceptance of e-learning by learners in biology learning. E-learning received by students is e-learning that brings benefits so that students can easily obtain knowledge within the scope of fairly broad and abstract material in biology learning, thus students will show an attitude of acceptance towards the e-learning used (Saparuddin, 2022). This is supported by previous research that states when a e-learning users benefit from the information system, so as to increase the effectiveness and efficiency of users when solving academic affairs, then users will have an attitude of acceptance towards the use of e-learning (Rahayu et al., 2017).

Based on an interview with a biology teacher at DEK High School on November 24, 2022, he stated that the use of Scola in biology learning is always used for at least 15 minutes in every meeting. The use of Scola is considered useful which makes learning biology more

effective and flexible. The use of Scola in biology learning in SHS DEK has been going on for 1 year, but has never been analyzed using acceptance factors by learners, so it is not known the success rate of using Scola in biology learning. In addition, the relationship of PU with ATU in students of Scola users of biology learning in high school deck is also unknown.

Based on the previous description, the researchers were interested in conducting research on the relationship of PU with ATU in students using Scola Biology learning at SHS Dedicatasi Edukasi Kualiva.

## METHODS

This type of research is descriptive correlation research with quantitative approach. The sampling technique in this study is total sampling technique. Samples in this study are students of Class X Phase E, Class XI mathematics and Natural Sciences, and Class XII mathematics and natural sciences with a total sample of 48 samples.

Data collection in this study is by using a questionnaire (questionnaire) on the relationship of PU with ATU in pesesrta didik Scola users of the results of research development Davis et al. (1989) Determination of the scale of measurement of the answers to the questionnaire using a Likert scale.

**Table 1.** Instrument Indicator Variables

Instrument	Indicator
<i>Perceived Usefulness (PU)</i>	X1 = Work More Quickly
	X2 = Improve the Performance
	X3 = Increases Effectiviness
	X4 = Increases Productivity
	X5 = Make Job Easier
	X6 = Useful
<i>Attitude Toward Using (ATU)</i>	Y1 = Hppy Feeling
	Y2 = Cornfortable feeling/enjoying
	Y3 = Boring Feeling
	Y4 = Dislike

Before distributing the questionnaire, first conduct a instrument test. Test instruments that will be conducted in the study are validity test and reliability test. The validation test was conducted to 2 Lecturers of Biology Department, FMIPA, UNP.

Data analysis techniques in this study as follows.

### 1) Score Distribution

The steps taken are by calculating the average score using the following formula:

$$p = \frac{\sum S}{SM} \times 100\%$$

Description:

P = score sought

$\sum S$  = total score

SM = maximum score

The results of the calculation of the percentage of PU and ATU are grouped by percentage assessment criteria that can be seen in the following table:

**Table 2.** Percentage Assessment Criteria

Criteria	P (%)
Very high	81 – 100
High	61 – 80
Medium	41 – 60
Low	21 – 40
Very low	0 – 20

### 2) Normality Test

Normality test in this study using Liliefors test. The results of the  $L_0$  value obtained will be compared with the critical value of  $L_{table}$  obtained from the Lilifors test for  $n$  as many as the number of samples and the real level  $\alpha = 0.05$ . If  $L_0$  is smaller than  $L_{table}$ , the data is normally distributed.

### 3) Correlation Test

The correlation coefficient is denoted by the letter ( $r$ ). The condition for the value of  $r$  is no more than +1 and no less than -1. The value of  $r = -1$  means perfect negative

correlation,  $r = 0$  means there is no correlation, and  $r = +1$  means Positive perfect correlation.

Table 3. Guidelines For Interpretation Of Correlation Coefficients

interval coefficient	relationship level
0,00 – 0,199	Very low
0,20 – 0,399	Low
0,40 – 0,599	Enough
0,60 – 0,799	Strong
0,80 – 1,00	Very strong

Correlation test that will be used in this study is to use the Formula Person product Moment test (if the data is normally distributed) and Spearman Rank test formula (if the data is not normally distributed).

a) Person Product Moment.

The Person Product Moment Test is one way to find the relationship between two variables and data in the form of intervals or ratios. The formula used is :

$$r = \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{(n\sum X^2 - (\sum X)^2)(n\sum Y^2 - (\sum Y)^2)}}$$

Description:

$r$  = Relationship between variable X and variable Y

X = Independent Variable

Y = Dependent variable

n = Amount of data

b) Spearman Rank test

Spearman Rank test is a nonparametric statistical test used to find the relationship of two variables. Spearman Rank test formula as follows:

$$r_s = 1 - \left[ \frac{6 \sum_{i=1}^n d_i^2}{n(n^2 - 1)} \right]$$

Description:

$r_s$  = Spearman correlation coefficient

$d_i$  = Ranking difference

$n$  = Amount of data

c) The significance test

After finding the value of  $r$ , then determine the interpretation of the correlation coefficient means or significant, for it is necessary to dilakuakn significant test by comparing the results of the test  $t_{hitung}$  with  $t_{table}$  at degrees of freedom ( $dk$ ) =  $(n-2)$  and significance 5%. If the value of  $t_{hitung} > t_{table}$ , then the correlation coefficient is declared meaningful or significant. Formulas and calculations with the t test is:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

Description :

$t_{count}$  = Calculated value

$r$  = Relationship of variable X and variable Y

$n$  = Amount of data

## RESULTS

Based on research that has been conducted on students Scola users learning biology at SHS dedication Education Kualiva, obtained primary data in the form of PU and ATU. The Data was obtained through a closed questionnaire distribution to 48 learners. Data presented in the form of raw data processed using descriptive statistical analysis techniques.

Validity test results for each variable PU and ATU are on valid criteria. Reliability test results for each variable PU and ATU are on very high criteria.

### 1) Decryptive Statistical Analysis

#### a) A standard test

Normality test results with a significant level of  $\alpha = 0.05$  obtained  $L_0 < L_{table}$ . This means that the questionnaire distribution in the population is normally distributed. Normality test results can be seen in Table 4.

**Table 4.** Normality Test Results Of Research Variables

Variable	$L_0$	$L_{table}$	Criteria
PU	0,099	0,128	Normal
ATU	0,074	0,128	Normal

## b) Perceived Usefulness (PU)

Variable PU on students Scola users learning biology in DEK high school consists of 17 questions. The highest score is 61 of the maximum score that may be achieved by  $(4 \times 17) = 68$  and the lowest score obtained is 34 of the minimum score  $(1 \times 17) = 17$ . To determine the acceptance of students to the use of Scola biology learning in high school deck, it can be seen through the level of perceived usefulness (PU) in Table 5.

**Table 5.** Perceived Usefulness (PU)

value range (%)	Frek.	P (%)	Criteria
81 – 100	5	10,41	Very high
61 – 80	35	72,92	Low
41 – 60	8	16,67	Enough
21 – 40	-	-	Low
0 – 20	-	-	Very low
Total	3386,765		
Rata-rata	70,5576 %		High

## c) Attitude Towards Using (other)

Variable Atu in students Scola users learning biology in DEK high school consists of 13 questions. The highest score is 48 of the maximum score that may be achieved by  $(4 \times 13) = 52$  and the lowest score obtained is 21 of the minimum score  $(1 \times 13) = 13$ . To determine the acceptance of students to the use of Scola in high school biology learning DEK, it can be seen through the user's Attitude Towards Using (ATU) in Table 6.

**Table 6.** Attitude towards use (ATU)

value range (%)	Frek.	P (%)	Criteria
81 – 100	8	16,67	Very low
61 – 80	34	70,83	High
41 – 60	5	10,42	Medium
21 – 40	1	2,08	Low
0 – 20	-	-	Very low
Total	3392,3077		
Rata-rata	70,67%		High

## d) The relationship between Perceived usefulness (PU) and Attitude Toward use (ATU)

Analysis of the relationship of PU variables with ATU using Pearson Product Moment Formula. The results of the data analysis with a total sample of 47 people of learners obtained, namely,  $\sum X = 3386,76$ ;  $(\sum X)^2 = 242605,97$ ;  $\sum X^2 = 11470175,17$ ;  $\sum Y = 3392,31$ ;  $\sum Y^2 = 245251,48$ ;  $(\sum Y)^2 = 11507751.48$ ;  $\sum XY = 242751,70$ ;  $\sum X\sum Y = 11488947,96$ ; and  $r_{xy} = 0,7587$  (strong correlation).

## e) The significance test

Significant test is done by using the t test. The thitung obtained from the relationship of PU with ATU is 7.899. The results of the calculation will be compared with ttable at degrees of freedom (dk) = (n-2) and significance of 5%, obtained value ttable = 1.679. Comparison of significance test obtained is count > table, this means there is a significant relationship between Perceived Usfulness (PU) with Attitude Toward Using (ATU).

The results showed that the hypothesis stating that "Perceived Usefulness (PU) has a significant positive relationship to the Attitude Toward Using (ATU) in students using Scola biology learning in Dedikasi Edukasi Kualiva High School" can be accepted with empirical research evidence. This is evidenced by the value of R correlation shows a strong correlation relationship ( $r = 0.7587$ ) and the value of the count = 7.899 > ttable = 1.679. The results of this study are in line with the theory of Jogiyanto (2007) that PU is a variable in the most dominant Tam significant to influence ATU in using technology compared to other variables.

## DISCUSSION

### 1) Perceived Usefulness (PU)

Davis in 1989, defines PU as “The degree to which a person believes the use of a particular system would enhance his or her job performance”. In this case it can be interpreted that the perception of usability is a level to which a person believes that by using a particular system will improve the performance of its users. This follows the definition of the word useful which is “capable of being used advantageously” or able to be used profitably (Davis, 1989). Based on empirical research studies that have been conducted by previous studies, the PU variable in TAM is the variable that most affects the attitude of use. This statement is reinforced by various research studies that have been conducted by several researchers including, Chabibie & Hakim, (2016), Purnamasari et al., (2021), Frimayasa, (2022), dan Santoso, (2010).

Based on the analysis of research data that has been done, it is known that the level of PU value to students using Scola biology learning in high school deck obtained an average of 70.5576% with high criteria. This means, the trust of students to the perceived usefulness or Perceived Usefulness (PU) at the time of Use Scola during the learning process of Biology in DEK high school.

The perception of PU when using Scola in biology learning in high school DEK is measured through indicators such as using Scola, it is felt that the work is completed faster, can improve performance, increase effectiveness, increase productivity, easier, and more useful. Scola which is designed for online learning is perceived by learners to be more effective and efficient than manual learning. It's like a biology teacher said. at the time of observation through interviews, that in learning biology that uses a lot of images and objects that sometimes can not be seen directly, it will be easier to deliver the biological material. To students by using Scola, and will save time because teachers do not need to draw on the board and will also further clarify the material/image so that it will be better understood by students.

### 2) Attitude Toward Using (ATU)

The attitude is the initial response of users of a technology in the form of acceptance or rejection as an impact on user performance. The positive attitude that users show when using certain technologies, will encourage users to be able to optimize the usefulness or

utilization of these technologies (Islami, 2021). This statement is reinforced by previous research conducted by Chabibie & Hakim, (2016) dan Pertiwi & Sharif, (2019).

Analysis of research data on the level of ATU value to students using Scola biology learning in high school deck obtained an average of 70.67% with high criteria. This means that there is a positive attitude of acceptance by students when using Scola during the biology learning process at DEK high school. The attitude of students when using Scola in biology learning in Dedikasi Edukasi Kualiva high school is measured through indicators such as by using Scola, students will feel more happy, comfortable/enjoy, bored, or show dislike when studying biology using Scola.

c. The relationship between Perceived

PU relationship with ATU illustrates that if the use of an information technology can meet the needs of users or bring benefits to users, then the user's attitude will tend to accept the technology (Muntianah et al., 2012). Based on the literature review, the relationship of perceived usefulness or benefit with the attitude of acceptance of Information Technology shows that there is a strong correlation of empirical support (Salloum et al., 2019). Research conducted by Fathema et al., (2015) said that if users feel the benefits of technology that he found, then the user can develop a positive attitude towards the technology.

Students consider when using e-learning that when an e-learning brings benefits so that it can increase the effectiveness and efficiency when solving academic affairs, such as students can discussing Group material, obtaining material that can be accessed anytime and anywhere, collecting assignments, and conducting online exams, learners will tend to show an attitude of acceptance of the use of Information Systems in the learning process. Many students feel happy and comfortable when using Scola in learning biology because Scola provides benefits according to what students want and need.

## CONCLUSION

Based on the results of research and discussion in the previous description, the conclusion of this study is acceptable research hypothesis. Therefore, Perceived Usefulness (PU) has a significant positive relationship to the Attitude towards Using (ATU) in students who use Scola biology learning at Dedikasi Edukasi Kualiva Senior High School.

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