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CORRELATION STUDY: STUDENT PERCEPTIONS OF THE USE OF LEARNING TECHNOLOGY WITH LEARNING OUTCOMES

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Abstract—This research aims to determine student perceptions on the use of learning technology on learning outcomes at Setia Budhi Rangkasbitung University. This type of research is quantitative with a correlational approach. Perception data collection in the form of a questionnaire was carried out online via Google Form for 97 students who were taking adaptive physical education courses at Setia Budhi University Rangkasbitung. Learning outcome data collection used final semester exam scores, determining the sample using purposive sampling techniques. The data analysis technique uses Pearson Correlation Product Moment analysis. The results of the research show that there is a significant relationship between student perceptions of the use of learning technology and learning outcomes, with r calculated 0.552 > r table (df 96; 5%) 0.199 and a significant value of 0.000 < 0.05. Student perceptions on the use of learning technology have a relationship with learning outcomes of 30.50%. These results show that if students' perceptions of the use of learning technology are better, then learning outcomes will be better.

Keywords— *Learning Technology; student perceptions; learning outcomes.*

I. INTRODUCTION

In today's increasingly globalized world, the rapid development of information technology is unavoidable, and its impact on the world of education today, lecturers and students are trying to adapt to the existence of learning

technology. Global needs require the world of education to always adjust technological developments with efforts to improve the quality of education, and especially adjust the use of information and communication technology with the world of education in the learning process.

The existence of technology today is considered very important in human life as a support in carrying out various activities both in doing work and in education. Educators can utilize technology as a learning medium or mediator in conveying knowledge to students through several applications, such as zoom, google classroom, google meeting or via whatsapp group [1]. By using the learning media above, educators can create interesting and non-monotonous material explanations so that students are interested and remain enthusiastic in participating in these learning activities.

Learning is the interaction between teachers and students in the classroom. that learning is the process of interaction between students and educators and learning resources in a learning environment that includes teachers and students who exchange information [2]. The teaching and learning process involves learning and teaching activities to determine student success and achieve educational goals. Learning is the process of seeking knowledge for someone through training, learning to change oneself. The learning process is a system that involves various components that are interrelated and interact with each other [3]. Learning has the benefit of gaining knowledge and experience that can be developed [4].

The interaction between lecturers and students that is done consciously, planned both inside and outside the classroom to

improve student abilities is determined by learning outcomes. Learning achievement is the basis for measuring and reporting student academic achievement, and is the key to developing more effective subsequent learning designs that have harmony between what students will learn and how they will be assessed [5]. Student learning outcomes are essentially changes in behavior. Behavior as a learning outcome in a broad sense includes cognitive, affective, and psychomotor fields [6].

Learning outcomes are generally measured using a set of measurement tools called tests. Learning outcomes are obtained after measurements are taken using a set of tests which are then scored and assessed, the results of which are expressed in the form of numbers or other symbols. Based on the test results, it can be seen how high or low the learning achievement of students is in each field of study. Learning outcomes are influenced by several factors. These factors can be classified into two factors, namely internal factors and external factors [7]. Internal factors are factors that exist within the individual, while external factors are factors that exist outside the individual. Internal factors include physical factors, psychological factors, and fatigue factors. Meanwhile, external factors which are factors/causes from outside the student include the social environment and non-social environment, where the social environment includes the school environment, home environment, and community environment. Meanwhile, the non-social environment includes the distance between home and school, learning facilities, climate/weather and study time.

One of the external factors that affect learning outcomes is learning facilities. Learning facilities are all devices, equipment, materials, and furniture that are directly used in the learning process that can facilitate students in learning. Learning facilities include all facilities needed in the teaching and learning process, both mobile and non-mobile, so that the achievement of educational goals can run smoothly, regularly, effectively and efficiently, so that students can achieve optimal learning outcomes [8]. Based on where learning activities are carried out, learning facilities are grouped into two, namely: (1) learning facilities at school, and (2) learning facilities at home [9].

Learning facilities that support students' learning activities will cause the learning process to be enjoyable and achieve the expected learning outcomes. Learning facilities are very important to facilitate and facilitate the learning process, especially physical education using learning technology. Adequate learning facilities will support students in achieving maximum learning outcomes. Learning facilities are often also called facilities and infrastructure, with the fulfillment of good learning facilities can support the learning process, so that learning activities take place effectively and efficiently.

The ability to use learning facilities is greatly influenced by perception. Perception is a process that begins with the user of the five senses in receiving stimulus, then organized and interpreted so that they have an understanding of what is sensed. Perception is the process by which we organize and interpret stimulus patterns in the environment [10]. The

application of learning technology in reality still has many pros and cons, as well as field results, as well as previous studies that state, among other things, the lack of effective use of media which causes the absorption of the material obtained to be less than optimal [11], or the appearance or usage procedures are less attractive which causes students to be less enthusiastic.

Based on these problems, this researcher aims to find out students' responses in the use of learning technology and also aims to find out the relationship between students' perceptions of the use of learning technology and learning outcomes. With this research, it is hoped that it can help lecturers and students in improving learning outcomes.

II. METHOD

This type of research is a correlational research. The method used in this study is the survey method, while the technique and data collection use questionnaires and learning outcomes. The survey method is an investigation conducted to obtain facts from existing symptoms and find deficiencies factually [11]. The population in this study were students of the physical education and health study program totaling 356 students, the sampling technique used was purposive sampling with the following criteria: a. students of the physical education and health study program; b. students who are active in lectures; c. Taking adaptive physical education courses. Based on these criteria, the sample used in this study was 97 students.

There are two variables in this study, namely Student Perception on the use of learning technology measured using a questionnaire and Learning outcomes seen based on the final semester exam scores. The instrument or tool used to measure Student Perception on the use of learning technology in the form of a closed questionnaire [12], states that "a closed questionnaire is a questionnaire presented in such a way that respondents only need to provide a checklist (✓) in the appropriate column or place, with the questionnaire directly using a graduated scale". The variables used in the study were first described into indicators which were ultimately used to compile a list of statements. The statements compiled consist of two item components, namely favorable (positive statements) and unfavorable (negative statements). Each item in these statements has four answer choices. The score for each answer choice on each item in detail can be seen in Table 2 as follows:

TABLE I. SCORE OF ANSWER CHOICES FOR EACH ITEM

Answer Options	Favourable (F)	Unfavorable (UF)
Strongly Agree (SS)	4	1
Agree (S)	3	2
Disagree (TS)	2	3
Strongly Disagree (STS)	1	4

The instrument in this study is based on the theory of Slameto (2013) [13] and adopted from the research of Ratnawati, D., & Vivianti, V. (2020) [14]. The grid is as follows:

TABLE II. SCORE OF ANSWER CHOICES FOR EACH ITEM

Variables	Factor	Indicator	Item No.	
			F	UF
Student perceptions on the use of learning technology	Infrastructure	Availability of online learning materials	1	2
		Availability of learning tools	3,4	
	Lecturer's Ability	The presence of lecturers in online lectures	5	6
		Explanation of the objectives of the lecture	7	8
		Opportunity for questions and discussion	9,10	
		Level of understanding	11	12
		Manners	13	14
		Teaching and learning process	Ease of access to online lectures	15,16
	Punctuality of online lectures			17,18
	Ease of theory and skills		19	20
	Compliance of material with RPS		21,22	
	Ease of submitting assignments		23	24
Amount			24	

Data analysis techniques using Pearson Correlation Product Moment analysis. determination of the correlation coefficient using the Pearson Product Moment correlation analysis method using the following formula:

$$r_{xy} = \frac{N\sum XY - (X)(Y)}{\sqrt{N\sum X^2 - \sum X^2 N\sum Y^2 - \sum Y^2}}$$

Information:

r_{xy} = Pearson correlation coefficient

x = Independent variable

y = Dependent variable

n = Many samples

The correlation coefficient significance test was conducted using the r calculation method consulted with the r table using a 5% error rate. Hypothesis testing was assisted by the SPSS 23 for Windows program. The closeness of the relationship can be interpreted using the interpretation of the correlation coefficient obtained.

III. RESULTS AND DISCUSSION

The results of the descriptive analysis are intended to describe the data of Student Perceptions on the Use of Learning Technology with Learning Outcomes. The results are explained as follows.

TABLE III. STUDENT PERCEPTION ASSESSMENT NORMS ON THE USE OF LEARNING TECHNOLOGY

No	Interval	Category	Frequency	Percentage
1	$74 < X$	Very good	17	17.53%
2	$67 < X \leq 74$	Good	56	57.73%
3	$52 < X \leq 67$	Enough	22	22.68%
4	$46 < X \leq 52$	Not enough	2	2.06%
5	$X \leq 46$	Very less	0	0.00%
Amount			97	100%

Based on the Assessment Norms in Table III above, students' perceptions of the use of learning technology can be presented in Figure I as follows.

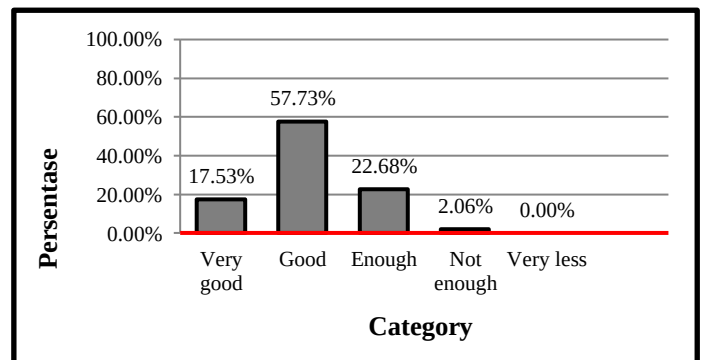


FIGURE I. STUDENT PERCEPTION ASSESSMENT BAR DIAGRAM ON THE USE OF LEARNING TECHNOLOGY

Based on Table III and Figure I above, it shows that students' perceptions of the use of learning technology are in the category of "very good" at 17.53% (17 students), "good" at 57.73% (56 students), "sufficient" at 22.68% (22 students), "less" at 2.06% (2 students), and "very less" at 0.00% (0 students).

Normality test

The data normality test in this study used the Kolmogorov-Smirnov method. The results of the data normality test carried out on each analysis group were carried out using the SPSS version 20.0 for Windows software program with a significance level of 5% or 0.05. The data summary is presented in Table IV as follows.

TABLE IV. NORMALITY TEST RESULTS

No	Variables	p	Sig	Information
1	Student perceptions on the use of learning technology	0.659	0.05	Normal
2	Learning outcomes	0.338	0.05	Normal

Based on the statistical analysis of the normality test that has been carried out using the Kolmogorov-Smirnov test in Table IV, on the variables Student perceptions on the use of learning technology and the learning outcomes obtained normality test results with a significance value of $p > 0.05$, which means the data is normally distributed.

Linearity Test

Testing the linearity of the relationship is done through the F test. The relationship between the variables Student perceptions on the use of learning technology and learning outcomes are

stated as linear if the sig value > 0.05. The results of the linearity test can be seen in Table V below:

TABLE V. LINEARITY TEST RESULTS

Functional Relationship	p	Sig.	Information
Student Perceptions on the Use of Learning Technology* Learning Outcomes	0.056	0.050	Linear

From Table V above, it can be seen that the significance value (p) > 0.05. So, the relationship between the variables Student perceptions on the use of learning technology and learning outcomes are stated linearly.

Hypothesis Test Results

The analysis technique used to test the hypothesis uses the product moment correlation test. The significance test of the correlation coefficient is carried out by consulting the r table. r count is consulted with r table using a 5% error rate. If r count > r table then the hypothesis is accepted and r count < r table then the hypothesis is rejected. If r count is greater than r table, then there is a positive and significant relationship between the variables being tested. The results of the hypothesis test are presented as follows.

TABLE VI. CORRELATION TEST RESULTS

Correlation	r count	r table (df 96)	Sig.	Information
Student Perceptions on the Use of Learning Technology with Learning Outcomes	0.552	0.199	0,000	Significant

Based on Table VI above, the calculated r coefficient is 0.552 and the r table value (df 96; 5%) is 0.199, while the significance value is 0.000. The calculated r value is 0.552 > r table (df 96; 5%) 0.199 and the significance value is 0.000 < 0.05, so H_0 is rejected. The alternative hypothesis which states "There is a significant relationship between students' perceptions on the use of learning technology and the learning outcomes of adaptive physical education" is accepted. The correlation coefficient is positive, meaning that if students' perceptions on the use of learning technology are getting better, then the learning outcomes of adaptive physical education will also be better.

Coefficient of Determination

The Determination Coefficient (R^2) is essentially used to measure how far the regression model's ability to explain the variation of the dependent variable. The results of the analysis in Table VII are as follows.

TABLE VII. RESULTS OF DETERMINATION COEFFICIENT ANALYSIS (R^2)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.552a	0.305	0.298	4.69183
a. Predictors: (Constant), Learning Facilities (X1)				

The value of the determination coefficient R Square or the contribution of student perception on the use of learning technology with adaptive physical education learning outcomes is 0.305 or 30.50%. This means that the variable of student perception on the use of learning technology has a relationship to adaptive physical education learning outcomes of 30.50%, while the rest is influenced by other factors of 69.50% outside this study. Other variables that affect adaptive physical education learning outcomes include learning motivation, interest, talent, learning environment, and others.

Based on the research results, it shows that there is a significant relationship Student perceptions on the use of learning technology with adaptive physical education learning outcomes. Student perceptions on the use of learning technology have a relationship with adaptive physical education learning outcomes by 30.50%. These results show that if Student perceptions on the use of learning technology the better, then adaptive physical education learning outcomes will also be better. The results of this study are in line with several previous studies, including studies conducted by Tehupuring, P., & Gundo, AJ (2022) [15]; Abi Yodha, S., et al. (2019) [16]; Desrani, A., et al. (2022) [17]. showed that there is a positive and significant relationship between student perceptions and learning outcomes.

IV. CONCLUSIONS

The development of technology in learning has influenced the world of education today, the influence has had a significant impact on increasing students' knowledge, the results of this research show that the use of technology helps students quickly understand the learning material being presented, the more positive the students' perception of learning technology, the higher the learning outcomes obtained.

Various obstacles experienced during the learning process using learning technology include the internet network used by students which is not very supportive during learning which causes the learning process to be less than optimal, therefore it is hoped that further research will provide further research into learning technology outside of student perception variables.

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