THE RELATIONSHIP BETWEEN STUDENT'S PERCEPTIONS ON THE USE OF ANDROID-BASED LEARNING MEDIA AND SCIENCE LEARNING OUTCOMES IN 5TH GRADE OF SDN HARJATANI SERANG REGENCY

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Abstract

The purpose of this research was to describe and analyze the relationship between student's perceptions on the use of android-based learning media and science learning outcomes of 5th-grade students at SDN Harjatani, Serang Regency. The method used is a survey method with a quantitative approach, data collection by distributing questionnaires to students. The sample in this research was 32 students at SDN Harjatani, Serang Regency. Based on the results of the analysis, it can be seen that: There is a positive relationship between student's perceptions of the use of android-based learning media with learning outcomes at SDN Harjatani Serang Regency, this is proven by the value of $r_{count} > r_{table}$ (0.897 > 0.3388). This shows that the better student's perceptions of the use of android-based the learning media, the higher the learning outcomes and vice versa, the worse student's perceptions of the use of android-based learning media, the lower student learning outcomes.

Keywords: Student's Perception; Learning Outcomes; Science

A. Introduction

Learning is a human process to achieve various kinds of competencies, skills, and attitudes. Learning starts from the human birth until the end of life. The human ability to learn is an important characteristic that distinguishes humans from other living things. Learning has advantages, both for individuals and for society. For individuals, the ability to learn continuously will contribute to the development of their life quality. Learning is a process that occurs in every person from the time he was born until the end of his life. The learning process can occur anytime and anywhere. This can be proven by changes in a person's behavior that can occur at the level of knowledge, skills, or attitudes.

The teacher has an important role in the development of learning and the progress of students, a teacher is required to be able to do his duties with full responsibility. In doing their duties, a teacher must be able to use effective and efficient learning methods (Nasution, 2018).

According to Sarlito Wirawan Sarwono (2000:102) Perception is the ability to discriminate, classify, focuses, and so on. Perception is the result of someone's observation of something that in the surrounding environment through the five senses.

Learning media continues to develop, followed by technological advances in presenting learning that is interesting and easily understood by students so it produce the fun learning. According to Yaumi (2018:7) learning media is also seen as the physical equipment used to send messages to students and stimulate them to learn.

The use of learning media is inseparable part and is already the integration of the learning methods used. The position of the learning media has an important role because it can help the students' learning process.

According to Yuniar Supardi (2017:1) Android is a Linux-based mobile device that includes an operating system and applications. One example of learning media that can be concreted by utilizing the technological developments in the education field is android-based learning media. Android is also currently being popular and used by all levels of society, whether in education, entertainment, and so on (Muyaroah and Fajartia, 2017).

The teaching and learning process and the learning outcomes are related to each other and will produce even better goals. According to Hidayat and S (2017:

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47), learning outcomes are changes in behavior that will occur after participating in learning that in accordance with educational goals in the cognitive, affective, and psychomotor domains. According to Wahyuningsih (2020:65), Learning outcomes are the abilities possessed by students and they receive the learning experiences in the learning process.

To improve the learning process in order to create active and effective learning, the function of learning media becomes a very important part in the learning process aimed to increase insight and easy to understand the material provided by the teacher to students in the learning process (Nurrita, 2018; Sulfemi and Kamalia, 2020; Putra and Milenia, 2021)

One of the learning media used in 5th grade of SDN Harjatani is android-based learning media. According to Kuswanto and Radiansah (2018:16), Android is an operating system for Linux-based mobile devices that includes an operating system, middleware, and applications.

Science education is very important and must be understood by students in order to realize the nation as a whole, as stated in the goal of national education, namely the intellectual life of the nation. In other words, science learning aims to develop

students' potential through providing experience by exploring and understanding the natural surroundings scientifically (Andriana, et al, 2017; Wahyu, et al, 2020; Fitria, et al, 2021)

The purpose of science learning in 5th grade at SDN Harjatani on the material of the human digestive system has not been achieved optimally, seen from the average daily test results of the science learning that have not achieved maximum results, from 32 students, the 58% of students were still under the minimum completeness criteria (MCC/KKM) set by the school is 70.

The real situation of the 5th grade students of SDN Harjatani, are having several problems, namely as follows:: (1) Students are not enthusiastic in learning and do not pay attention to the teacher (2) The ongoing learning still uses student worksheets (3) The learning media used are less varied and there are no teachers who use Android-based learning media in learning (4) Students find it difficult to understand the material presented by the teacher, this can be seen when the teacher asks questions to students (5) The learning outcomes obtained in the science learning that the average value of daily tests in science learning has not achieved the maximum results, from 32 students, the 58% of students were still under the

minimum completeness criteria (KKM) set by the school of 70 (Awang, 2015; Waskitoningtyas, 2016; Alwi, 2017; Negara, et al, 2019).

The advantages of Android-based learning media are as follows: (1) Android-based learning media is able to make the learning be more interesting and also motivate students so they are able to understand the material well. (2) Android-based learning media is an innovation in the teaching system because it can be effectively used. (3) The learning media based on Android applications can help the teaching and learning process, 50% of respondents rate this application by saying it is very good. (4) Android-based learning media is ready to be used in the learning process because it provides effectiveness in the learning process (Batubara, 2018; Santoso, et al, 2019; Efriyanti and Annas, 2020). Based on some of the advantages above regarding to the android-based learning media, the authors try to use android-based learning media to solve the problems that occur in the schools that the authors examine. One of the main problems is the low learning outcomes of 5th grade students at SDN Harjatani in science. The use of android-based learning media has been done by Sigit Prasetyo (2017) in his research entitled "Development of Android-based learning media for elementary/MI students". Furthermore by Karim, et al (2020) in his research entitled "Development of Android-based mathematics learning media in grade 4 elementary school"

Based on the description above, it is necessary to conduct a research analysis about "The relationship between students' perceptions of the use of android-based learning media with the science learning outcomes at SDN Harjatani". Regarding to the above description, it is necessary to do a research on the android-based learning media in relation to the students' perceptions of android-based learning media with the student learning outcomes.

B. Research Methodology

This research uses a survey method with a correlation technique, by collecting data through the instruments. The measured variables are stated by the independent variable and the dependent variable. In this case, the independent variable is students' perception of the use of android-based learning media, while the dependent variable is student learning outcomes of the science subjects.

The data analysis technique used in this research is descriptive statistics and classical assumption test. Before testing the hypothesis, general statistical tests are carried out in the form of descriptive statistics. Descriptive statistics include the mean, minimum, maximum, and standard deviation which aims to determine the distribution of the data sampled in the research. Classical assumption test includes: 1) The normality test that conducted to know whether the samples taken have met the distribution criteria or normal distribution. The normality test of the data was carried out using the One-Sample Kolmogorov-Smirnov test. A variable is said to be normally distributed if the test results show a significance value above 5%. If the data is not normally distributed, then the data can be normalized by performing data transformations. 2) The linearity test aims to determine whether two variables have a linear relationship or not by significantly. This usually used as a prerequisite in correlation analysis or linear regression. The test on the SPSS using the Test for Linearity with a significance level of 0.05. Two variables are said to have a linear relationship if the significance (linearity) is less than 0.05.

Hypothesis testing in this research uses correlation analysis with SPSS of version 25. Correlation analysis is only to show the magnitude of the relationship between one variable and another. Testing the first and second hypotheses using simple correlation and linear regression of one predictor (significance test).

H_0: ρXY (the relationship between the students' perceptions of the use of android-based learning media) = 0; if there is no relationship between the independent variable students' perceptions of the use of android-based learning media with the dependent variable learning outcomes.

H_0 accepted if the value of $r_{count} < r_{table}$

H_0 rejected if the value of $r_{count} < r_{table}$

H_0: ρXY (relationship between students' perceptions of the use of android-based learning media) $\neq$ 0; if there is a relationship between the independent variable students' perceptions of the use of android-based learning media with the dependent variable learning outcomes.

H_1 accepted if the value of $r_{count} > r_{table}$

H_1 rejected if the value of $r_{count} < r_{table}$

The statistical hypothesis is

H_0 : ρXY = 0

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$H_1 \quad : \rho XY \neq 0$

The subjects of this research were the 5th grade students of SDN Harjatani, Serang Regency, of 32 students.

C. Result and Discussion

To perform the correlation analysis or hypothesis testing, first, the analysis requirements test must be carried out. To test the hypothesis that proves a relationship between variables, there are several prerequisite tests before conducting the analysis test. The analysis requirements in this research are the requirements that must be met so the analysis can be carried out, both for predicting purposes and for hypothesis testing purposes.

Table 1. *Pearson Correlation* Table

Interval	Interpretation
0.00 – 0.199	Very Low
0.20 – 0.399	Low
0.40 – 0.599	Moderate
0.60 – 0.799	High
0.80 – 1.000	Very High

Source: Arikunto (2010: 319)

The normality test is used to determine the data distribution, whether the data is normally distributed or not. The normality test is carried out to know whether the population is normally distributed or not. The normality test of the data in this research uses the One-Sample Kolmogorov-Smirnov Test method, with the significance level used as a rule to accept or reject the normality test of the data distribution is the significance level $\alpha = 0.05$. The data is normally distributed if the significance value is greater than 0.05.

The analysis results of the normality test for each variable based on the output of SPSS are obtained as follows:

Table 2. Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		32
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.85082300
Most Extreme Differences	Absolute	.109
	Positive	.080
	Negative	-.109
Test Statistic		.109
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 Kolmogorov-Smirnov normality test table, the significance value (Sig.) of 0.109 is obtained, this indicates that the value of Sig. = 0.109 > α = 0.05, so it can be concluded that the research data is NORMAL because the value of arithmetic significance > 0.05.

Linearity test is used to determine whether two variables have a significant

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linear relationship or not. The linearity test used in this research is to see the value of Linearity and Deviation from Linearity. If the Linearity value < 0.05 and the Deviation from Linearity value > 0.05; then it can be said that there is a linear relationship between the two variables, the independent variable to the dependent variable.

The results of linearity test with SPSS for students' perceptions of the use of android-based learning media (X) with learning outcomes (Y), obtained the following results:

Table 3. Linearity test of students' perceptions of the use of android-based learning media with learning outcomes

Based on the table above, it is known that the Linearity is $0.006 < 0.05$ and the *Deviation from Linearity value is* $0.210 > 0.05$; then it can be stated that between the learning outcomes variables and students' perceptions of the use of android-based learning media there is a linear relationship. With this, the assumption of linearity between the variables the relationship between students' perceptions of the use of android-based learning media with learning outcomes variables is fulfilled.

After the analysis requirements test is carried out, the next step is to test the research hypothesis. Hypothesis testing in this research aims to test the three hypotheses that have been formulated in the previous chapter, namely (1) there is a relationship between students' perceptions of the use of Android-based learning media with science learning outcomes for 5th grade students at SDN Harjatani, Serang Regency.

The statistical technique used to determine the relationship between these variables is a statistical technique of partial correlation and multiple correlations. As to know the level of relationship between variables, the guidelines from the Pearson Correlation table are used as follows:

Hyphothesis: The relationship between students' perceptions of the use of Android-based learning media with learning outcomes. The hypothesis being tested is:

H_0: There is no relationship between the students' perceptions of the use of Android-based learning media with the science learning outcomes of 5th grade students in SDN Harjatani, Serang Regency.

H_1: There is a relationship between the students' perceptions of the use of Android-based learning media with the science learning outcomes of 5th grade

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To answer the proposed hypothesis (reject H_0 or accept H_1), is done in two ways, namely by comparing the Pearson Correlation value or r_{count} with the r_{table} value, and it can also compare the significance probability value with the value of α = 5% (0.05).

The SPSS output results of partial correlation analysis of the relationship between the students' perceptions of the use of android-based learning media and learning outcomes are known as follows:

Table 4. Correlation analysis of students' perceptions of the use of android-based learning media (X) with learning outcomes (Y)

Based on the SPSS output above, the correlation analysis between students' perceptions of the use of Android-based learning media and the learning outcomes of science and learning outcomes obtained a Pearson Correlation (r_{count}) value of 0.897 with the Significance value of 0.000. If compared with the value of r_{table} with df (n-2); 32 – 2= 30, it is known that the value is 0.3388, thus, the value of $r_{count} > r_{table}$ (0.897

> 0.3388). Likewise with the value of Sig. (2-tailed) < value α (0.000 < 0.05). With these results, the null hypothesis (H_0) is rejected and the working hypothesis (H_1) is accepted. Thus, it can be stated that there is a relationship between the students' perceptions of the use of Android-based learning media and the learning outcomes of 5th grade students at SDN Harjatani.

The strength level of the relationship between students' perceptions of the use of android-based learning media and the learning outcomes, seen based on the Pearson Correlation value which then compared to the Pearson Correlation table. Based on the results of table 4 above, the Pearson Correlation value is 0.897, if it is put into the Pearson Correlation table in table 1, the value is in the range of 0.80 – 1.00 so it can be concluded that the correlation between the students' perceptions of the use of android-based learning media and the learning outcomes has a very high correlation. The correlation coefficient value based on table 3 above is positive, it means that students' perceptions of the use of Android-based learning media have a unidirectional relationship with the learning outcomes, so the better students' perceptions of the use of Android-based learning media, the higher the learning outcomes will be, and vice versa.

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Based on the statistical analysis described above, it can be seen the values of the statistical results in each variable and the relationship level between the independent variables and the dependent variable. These results are used as the basis for discussing the relationship between students' perceptions of the use of android-based learning media and the learning outcomes

Based on the results of the correlation analysis between students' perceptions of the use of Android-based learning media and learning outcomes, obtained the Pearson Correlation value (r_{count}) of 0.897 with the Significance value of 0.000. After being compared, it turns out that the value of $r_{count} > r_{table}$ (0.897 > 0.3388). Likewise with the value of Sig. (2-tailed) < the value of α (0.000 < 0.05). With these results, the null hypothesis (H_0) is rejected and the working hypothesis (H_1) is accepted, so it can be concluded that there is a relationship between students' perceptions of the use of Android-based learning media with the science learning outcomes in the 5th grade of SDN Harjatani. The correlation value of 0.897, means that the relationship between students' perceptions of the use of android-based learning media with the learning outcomes has a very high (strong) correlation. This is in line with research conducted by Mulyana, et al (2013), that there is a significant relationship between student perceptions, interests, and attitudes with the student learning outcomes. The same result was also achieved by Badrudin and Wibowo (2014) that there is a positive relationship between students' perceptions of the use of learning media and the learning outcomes.

D. Conclusion

Based on the discussion, the conclusions of this research are as follows: There is a positive relationship between the students' perceptions of the use of android-based learning media with the science learning outcomes of 5ᵗʰ grade students in SDN Harjatani, Serang Regency with a very high correlation. This shows that there is a directly proportional relationship where the better students' perceptions of the use of android-based learning media, the higher learning outcomes will be, and vice versa, the less good students' perceptions of the use of android-based learning media will be followed by lower learning outcome.

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