THE RELATIONSHIP BETWEEN LEARNING INTEREST AND HOME STUDY FACILITIES WITH MATHEMATICS LEARNING OUTCOMES OF STUDENT GRADE VIII

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ABSTRACT

The result of a student's mathematics learning is related to many factors. Learning interest and home study facilities are some of the factors that allegedly relate to learning outcomes. This study aims to determine whether there is a positive and significant relationship between the interest of learning and home study facilities with the results of learning mathematics students of class VIII State Junior High School (SMP Negeri) 2 Pandak Bantul District Even Semester Year Teaching 2017/2018. This type of research is classified as quantitative research. This study's population is all students of class VIII SMP Negeri 2 Pandak Bantul District, even semester 2017/2018 academic year consisting of 5 classes with 155 students. Samples were taken by random sampling technique to the class and obtained class VIII A, consisting of 31 students. Data collection techniques used questionnaires and test techniques. Test the research instrument using validity test, reliability test, and different power test. The prerequisite analysis test includes the normality test, independent test, and linearity test. Data analysis using correlation analysis and linear regression analysis. The results showed that there was a positive and significant correlation between learning interest (X_1) and home study facility (X_2) with mathematics learning result with $F_{count} = 3,6046 > F_{table} = 3,34$ is with $R = 0,4525$ and $R_2 = 0.2048$ with $Y = 15,4039 + 0,2336X_1 + 0,3336X_2$ and (RC X_1) = 31,9745%, (RC X_2) = 68,0255%, (EC X_1) = 6,5469%, and (EC X_2) = 13.9284%.

Keywords: Interest Learning, Home Study Facilities, Mathematics Learning Outcomes.

INTRODUCTION

Mathematics is the center of all science. If you want to master all the knowledge, then first learn mathematics. This is consistent with the opinion of Erman Suherman et al. (2003: 25) that, Mathematics as the queen or mother of science is intended that mathematics is as a source of other sciences. In other words, many sciences whose discovery and development depend on mathematics. However, based on interviews with several eighth-grade students of SMP Negeri 2 Pandak, many students still had difficulty learning mathematics. Based on information from mathematics teachers at SMP Negeri 2 Pandak, most students' learning outcomes are still low and are still below the MCC.

In learning activities, some factors influence student success in learning. According to Slameto (2015: 54), the factor is divided into two, namely internal factors and external factors. Internal factors are factors that originate from within individuals. At the same time, external factors are factors that are outside the individual self. One internal factor that affects student learning is an interest in learning. According to Slameto (2015: 57), interest is a sense of preferability and a sense of attachment to a thing or activity, without anyone asking. Interest is the acceptance of a relationship between oneself and something outside of oneself. The stronger or closer the relationship, the greater the interest. Interest in learning will impact learning outcomes, such as the research results by Eka Indah Wahyuni (2013) and Muhammad Fais (2017). Based on observations made by researchers in class VIII of SMP Negeri 2 Pandak, it can be seen that many students lack attention and lack concentration on the material delivered by the teacher. The indicators used in the preparation of the questionnaire instrument of interest in learning in this study are by those proposed by Slameto cited in Suyono and Hariyanto (2015: 177), namely: pay attention, there are likes and feelings of interest, feelings of pleasure and gain satisfaction, interest and motivated, and manifested through participation.

Learning facilities at home is one of the external factors that affect students ' learning. In Arikunto, S, and Lia (2016: 143), Learning facilities are all facilities needed in the teaching and learning process, both moving and not moving so that the achievement of goals runs smoothly, regularly, effectively, and efficiently. Learning activities will run smoothly if supported by adequate learning facilities. Learning facilities at home will influence learning outcomes, such as the research results conducted by Wira Susanti (2015) and Putri Dewi Ratna (2014). Based on interviews with some students, it was found that learning facilities at home were incomplete, such as lack of study space, incomplete stationery, lack of supporting books to study at home, lack of lighting, and little study time due to more time which is used for playing and watching television. The indicators used in preparing the questionnaire instrument for learning facilities at home in this study are revealed by Slameto (2015: 63): a place of learning, adequate lighting, learning resources, and learning support equipment.

In this study, the problem was formulated as follows: Is there a positive and significant relationship between learning interest and learning facilities at home with mathematics learning outcomes of Grade VIII students of SMP Negeri 2 Pandak, Bantul Regency even semester of the 2017/2018 school year?

From the main problems that have been formulated above, the purpose of this study is to find out whether or not there is a positive and significant relationship between learning interest and learning facilities at home with mathematics learning outcomes of Grade VIII students of SMP Negeri 2 Pandak, Bantul Regency even semester of the 2017 school year. / 2018.

METHODS

This research was conducted in class VIII SMP Negeri 2 Pandak Bantul Regency in 2017/2018. The test class was class VIII E and the sample class being VIII A, where class VIII E and class VIII A consisted of 31 students each. In this study, three variables are consisting of two independent variables, namely learning interest (X_1), learning facilities at home (X_2), and one dependent variable, namely mathematics learning outcomes (Y). Based on the research variables above, the research design used in this study is as follows in Figure 1.

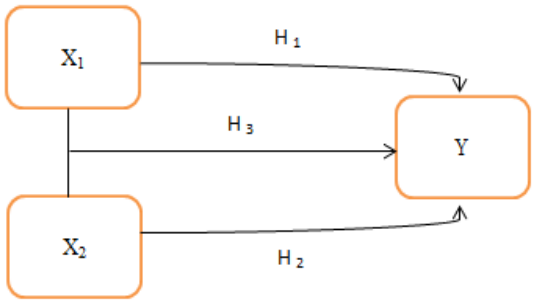

Figure I. Research Design X_1, X_2 with Y

Information:
X_I: Interest in Learning
X_2: Learning Facilities at Home
Y: Mathematics Learning Outcomes

(Sugiyono, 2015:68)

Data collection techniques used a questionnaire method to obtain data on learning interests and learning facilities at home and a test method to obtain data on mathematics learning outcomes. The research instrument tests conducted were validity, different power tests, and reliability tests. Analysis prerequisite tests include normality test, linearity test, and independence test. Data analysis uses product moment analysis and multiple linear regression analysis.

RESULTS AND DISCUSSION

The score of interest in learning is obtained from a questionnaire given to students, amounting to 20 statements. The highest score of 87 and the lowest score of 55 obtained an average value of 74.5323 and a standard deviation of 8.7768. From these criteria, a grouping of interest scores in learning is obtained as follows in Table 1.

Table 1. Distribution of Number of Students by Learning Interest Score Categories

Category	Score	f	%
High	$X > 83{,}3091$	5	16,1290
Medium	$65{,}7555 \leq X \leq 83{,}3091$	20	64,5161
Low	$X < 65{,}7555$	6	19,3548
Amount		31	100

From the results of the categorization in the table above, it can be seen that most of the VIII A class of SMP Negeri 2 Pandak, Bantul Regency in the academic year of 2017/2018 has a level of frequency of learning interest which is located at intervals of $65.7555 \leq X \leq 83.3091$ with the medium category that is as many as 20 students or 64.5161%.

The score of learning facilities at home was obtained from a questionnaire given to students totaling 18 statements, with the highest score of 76 and the lowest score of 43, an average value of 60.5968, and a standard deviation 10.0245. From these criteria, the grouping scores for learning facilities at home are obtained as follows Table 2.

Table 2. Distribution of Number of Students by Category Score Learning Facilities at Home

Category	Score	f	%
High	$X > 70{,}6213$	5	16,1290
Medium	$50{,}5723 \leq X \leq 70{,}6213$	18	58,0645
Low	$X < 50{,}5723$	8	25,8065
Amount		31	31

From the results of the categorization in the table above, it can be seen that the majority of class VIII A of SMP Negeri 2 Pandak, Bantul Regency in the academic year of 2017/2018 has a frequency level of learning facilities at home which is located at intervals of $50.5723 \leq X, 70{,}623$ with medium category, namely as many as 18 students or 58.1645%.

The value of mathematics learning outcomes is obtained from a test of learning outcomes, amounting to 25 questions with the highest value of 83.33 and the lowest value of 33.33, an average value of 55.2444, and a standard deviation of 10.8835. From these criteria, the grouping of mathematics learning outcomes is obtained as follows inTable 3.

Table 3. Distribution of Students by Mathematical Learning Outcomes Category

Category	Score	f	%
High	$X > 66{,}1279$	6	19,3548
Medium	$44{,}3608 \leq X \leq 66{,}1279$	16	51,6129
Low	$X < 44{,}3608$	9	29,0323
Amount		31	31

From the results of the categorization in the table above, it can be seen that the majority of class VIII D of SMP Negeri 2 Sedayu, Bantul Regency in the academic year of 2017/2018, including 16 students in the medium category or 51.6129%.

The analysis prerequisite tests are carried out to provide an overview of how the data's planned technical analysis can meet the prerequisites' assumptions. This study's prerequisite test analysis is the normality test, independent test, and linearity test.

A normality test is used to test the distribution of data obtained on each variable that is customarily distributed. The normality test in this study uses the chi-square formula (χ^2). The decision making criteria is the distribution of data obtained on each variable with normal distribution if $\chi^2_{count} \leq \chi^2_{table}$ with a significant level of 5% and the degree of freedom k-1. Where k is the number of interval classes. The normality test results are presented in the following Table 4.

Table 4. Summary of Normality Test Results

No	Variable	χ^2_{count}	χ^2_{table}	df	Info.
1.	Interest to learn (X_1)	1,3804	5,9915	2	Normal
2.	Home Learning Facilities (X_2)	7,2793	7,8147	3	Normal
3.	Mathematical Learning Outcomes (Y)	1,5463	5,9915	2	Normal

After the normality test, an independent test is conducted. An Independent test is used to determine the presence or absence of a relationship between the independent variables, namely the variable of interest in learning (X_1) with the variable learning facilities at home (X_2), using the chi-square formula. The decision making criteria are variable X_1 and variable X_2 are independent if $\chi^2_{count} \leq \chi^2_{table}$, at 5% and degrees of freedom $df = (B - 1)(K - 1)$. Where B is the number of rows, and K is the number of columns. The independent test results are presented in the following Table 5.

Table 5. Summary of Independent Test Results

Variable	χ^2_{count}	χ^2_{table}	df	Info.
X_1 with X_2	24,9342	37,6525	25	Independent

The next prerequisite test is the linearity test. The linearity test is used to determine whether the independent variable and the dependent variable have a linear relationship or not by using the linear regression formula (F test). The decision-making criteria are the relationship between variables X and Y linear if $F_{count} \leq F_{table}$ is at a significant level of 5%. The numerator $df = k - 2$ and the denominator $db = n - k$. In this study, for X_1 with Y and X_2 with Y db, the numerator $= 18$, the denominator $db = 11$. The summary of the linearity test results of the independent variables and the dependent variable can be seen in the following Table 6.

Table 6. Summary of Linearity Test Results

No.	Variable	F_{count}	F_{table}	Info.
1	X_1 with Y	1,85	2,67	Linear
2	X_2 with Y	0,70	2,67	Linear

The purpose of the discussion of the results of this study was to determine the relationship between interest in learning (X_1) and learning facilities at home (X_2) with mathematics learning outcomes (Y) grade VIII students of SMP Negeri 2 Pandak, Bantul Regency in the academic year of 2017/2018. In this section, further discussion of the results of the research analyzed in correlation.

In the first hypothesis test, a simple correlation coefficient (r) of 0.3391 was obtained. The coefficient of determination (r^2) is obtained for 0.1150, which can be explained that 11.50% of learning outcomes are influenced by an interest in learning, while other factors influence the rest. There is a variation in mathematics learning outcomes (Y) explained by learning interest (X_1) through a linear line $\hat{Y} = 24{,}4665 + 0{,}4104X_1$, with a regression coefficient of 0.4104. This means that every increase of one unit X_1 results in a 0.4104 increase in Y. The first hypothesis test results are accepted that there is a positive and significant relationship between learning interest with learning outcomes in mathematics. In other words, the higher the student's learning interest, the better the student's learning outcomes.

In the second hypothesis test, a correlation coefficient (r) of 0.4133 is obtained. The coefficient of determination (r^2) is obtained by 0.1708, which can explain that 17.08% of learning outcomes are influenced by learning facilities at home, while other factors influence the rest. There is a variation in

mathematics learning outcomes (Y) explained by home learning facilities (X_2) through a linear line $\hat{Y} = 28{,}2805 + 0{,}4442X_2$ with a regression coefficient of 0.4442. This means that every increase of one unit X_2 results in a 0.4442 increase in Y. The second hypothesis test result is a positive relationship between learning facilities at home with mathematics learning outcomes.

The multiple correlation analysis obtained the value of the multiple correlation coefficient (R) of 0.4454. This study also obtained a coefficient of determination (R^2) of 0.1984, meaning that an interest influences 19.84% of learning outcomes in learning and learning facilities at home. Other factors influence the rest. There is a variance in mathematics learning outcomes (Y) that can be explained by an interest in learning (X_1) and home learning facilities (X_2) through a linear line $\hat{Y} = 17{,}0244 + 0{,}2269X_1 + 0{,}3505X_2$. This means an increase in one unit (X_1) resulted in a 0.2269 increase in Y. An increase in one unit (X_2) resulted in a 0,3505 increase in Y. While for relative contributions, X_1 amounted to 32,0493% and X_2 amounted to 6.79507% and effective contribution of X_1 amounted to 6.3589% and X_2 of 13.4820%, it can be concluded that the learning facilitation variables at home make the most significant contribution to learning outcomes than the variable interest in learning. The third hypothesis test results accept a positive and significant relationship between learning interests and learning facilities at home with mathematics learning outcomes.

CONCLUSION

Based on the results of research and discussion as described, it can be concluded that there is a positive and significant relationship between learning interest and learning facilities at home with the mathematics learning outcomes of Grade VIII students of SMP Negeri 2 Pandak, Bantul Regency even semester of the academic year 2017/2018. This is indicated by the F-test that is $F_{count} \leq F_{table}$ or $3.4653 > 3.34$. The multiple correlation coefficient (R) between learning interest and learning facilities at home with mathematics learning outcomes of 0.4454 and (R^2) of 0.1984 with a double linear regression equation $\hat{Y} = 17{,}0244 + 0{,}2269X_1 + 0{,}3505X_2$. The relative contribution of X_1 is 32.0493%, and the relative contribution of X_2 is 679507%. The effective contribution of X_1 is 6.3589%, and the effective contribution of X_2 is 13.4820%.

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