THE CORRELATION BETWEEN THE INTEREST OF LEARNING AND FACILITIES LEARNING WITH THE STUDENT'S MATHEMATICS LEARNING OUTCOME

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ABSTRACT

Students are learning mathematics results to relate to many factors. Interest in learning, learning independence, and learning a facility are some of the factors suspected to be related to learning outcomes. This study aims to determine whether there is a positive and significant relationship between interest in learning and learning facilities with the results of a learning mathematics students grade VIII SMP in odd semester of the year 2017/2018 academic. The population in this study are all students of class VII odd semester of State Junior High School (SMP Negeri) 3 Pajangan Bantul in the academic year 2017/2018, consisting of four classes with 131 students. Samples were taken by random sampling technique and obtained class VIII C consisting of 33 students. Data collection techniques used questionnaires and test techniques. Test of research instrument using validity test, reliability test, and test of different power. Existence prerequisite tests include normality tests, independent tests, and linearity tests. To analysis the data, the researcher using correlation analysis and linear regression analysis. The results showed that there was a positive and significant correlation between learning interest (X_1) and learning facility (X_2) with students' mathematics learning result with $F_{count} > F_{table}$ ie 4.7837> 3.32 with R = 0.4917 and R2 = 0.2418 with Y = -1,8047 + 0,1724X_1 + 0,5499X_2, and RC (X_1) = 18,9191 % and RC (X_2) = 81,0809%, EC (X_1) = 04,4309% and EC (X_2) = 18.9891%.

Keywords: Interest in learning, learning facilities, mathematics learning outcomes.

INTRODUCTION

Education is one of the main things in human life. Education is not a static thing, but a dynamic thing that demands continuous change or improvement. Thus, it is necessary to have a comprehensive process of improving education at every level of education. In Indonesia, many educational institutions have been established, both formal and non-formal educational institutions. One of the formal education institutions in Indonesia is the school.

Mathematics becomes the basis of developing science at this time. James and James in Suherman (2003: 16-17), in his mathematical dictionary, say that mathematics is the science of logic about the form, composition, magnitude, and concepts related to one another, which is divided into three fields, namely algebra, analysis, and geometry. According to Suherman (2003: 55-61) argues that School mathematics is mathematics taught in schools, namely mathematics taught in Primary Education and Secondary Education. It was explained that school mathematics consists of selected mathematical parts to develop abilities and shape students' personalities and be guided by science and technology development. This shows that school mathematics still has mathematics characteristics; that is, it has an abstract event object and is consistently deductive in mind. However, many seventh-grade students at SMP Negeri 3 Pajangan, Bantul Regency, do not like mathematics. Their mathematics learning outcomes are still low. Based on the data collection results, the poor student learning outcomes can be seen from the Even Semester Final Examination score in mathematics that students have achieved. The following are the UAS results obtained by the VII grade students of SMP Negeri 3 Pajangan, Bantul Regency, shown in Table 1.

Table 1. The average score of Final Semester Test in Even Semester Mathematics for Class VII Students of SMP Negeri 3 Pajangan Academic Year 2016/2017

Class	Average	MCC	Total Student		Percentage	
			Complete	Not Complete	Complete	Not Complete
VII A	33,75	70	0	32	0%	100%
VII B	29,06	70	0	32	0%	100%
VII C	30,75	70	0	33	0%	100%
VII D	30,80	70	0	34	0%	100%

Source: SMP Negeri 3 Pajangan Bantul District

Based on the table above, it can be seen that the average grade of all classes in the Final Examination of Even Grade VII grade SMP Negeri 3 Pajangan Bantul Regency is still low.

Students' ability to learn mathematics can be measured through mathematics learning outcomes. According to Abdurahman in Jihad and Haris (2009: 14-16), learning outcomes are obtained by children after learning activities. The results of learning mathematics show how the level of student mastery of mathematics subjects. Several factors influence the poor learning outcomes. According to Slameto (2010: 54), Factors that influence learning of many types but can be classified into two groups, namely internal factors, and external factors. Based on the results of interviews and observations with several students, most students consider mathematics to be a complicated subject. The interest in learning some students' mathematics is low, and not all students have adequate learning facilities at home.

Internal factors that influence learning outcomes are interest in learning. The low interest in learning can be seen from most students considering mathematics is a complicated subject. Many students complain about mathematics because mathematics is difficult to understand and boring. Hence, students become less interested in learning mathematics. The lack of interest in learning mathematics in students indeed cannot be separated from several problems. The lack of interest in learning shows the attitude of students who do not take notes when the lesson is taking place, the attitude of students who are less active asking and answering teacher questions, the attitude of students who pay less attention to the lesson when the teacher is teaching, the attitude of students who rarely do assignments, and the attitudes of students who do not participate when there is the formation of groups in the distribution of tasks. Slameto argues that (2010: 180) Interest is a sense of preferability and a sense of interest in a thing or activity, without anyone asking. Meanwhile, according to Fathurrohman, Muhammad, and Sulistyorini (2012: 174), The characteristics of interest in learning are attention to learning, enjoy learning, interested in learning, and active in learning.

Apart from internal factors, external factors that affect mathematics learning outcomes are learning facilities. The completeness of learning facilities at school and home dramatically affects student learning activities. However, in this case, the discussion will focus more on learning facilities at home. According to Widoyoko (2009: 208), the notion facility is everything that facilitates the learning process, which includes: a learning room and its furnishings (tables and chairs), learning media, and learning resources. Meanwhile, according to Walgito (2005: 155) argues that tools for learning. Learning does not go well when without useful learning tools. The learning process will be disrupted if the necessary tools are not available. The more complete the tools, the easier it is to learn as well as possible. Also, according to Khairani (2014: 150) about the atmosphere of learning at home is A house that can not create a good learning atmosphere is a house that is always full of noise, the situation of a messy house, or air condition that is. It can be concluded that the characteristics of learning facilities at home are the study room, study furniture, study equipment, and the atmosphere of learning at home.

Some students said that learning facilities in their homes were inadequate, such as some students said that learning facilities in their homes were inadequate, such as the lack of unique study spaces used for learning, places to study without desks and chairs for learning, and stationery that they had were incomplete, does not have a computer or laptop.

Based on the background of the problem can be formulated problems that can be taken in this study are:

1. Is there a positive and significant relationship between interest in learning with mathematics learning outcomes of students of class VIII at SMP Negeri 3 Pajangan Bantul Regency odd semester of 2017/2018?
2. Is there a positive and significant relationship between learning facilities and mathematics learning outcomes of students of class VIII at SMP Negeri 3 Pajangan Bantul Regency odd semester of the academic year 2017/2018?
3. Is there a positive and significant relationship between interest in learning and learning facilities with mathematics learning outcomes for students of class VIII at SMP Negeri 3 Pajangan Bantul Regency odd semester of the academic year 2017/2018?

Several studies that have been conducted and are relevant to this research are the first research conducted by Yuliarini and Khasanah (2015) entitled The Relationship of Numerical Ability, Interest in Learning, and Parents' Attention with Mathematics Learning Outcomes of Class VIII Students in Odd Semester SMP Negeri 1 Sedayu, Bantul Regency, 2014/2015 Academic Year. The second study conducted by Kusbiantara and Khasanah (2014) entitled The Relationship between Teachers' Attention, Study Habits, and Learning Facilities at Home with Mathematics Learning Outcomes of Class VIII Even Semester Students at SMP Muhammadiyah 1 Gamping Sleman Regency, Sleman Academic Year 3013/2014. In the first study above is a quantitative study. This study has the similarity of independent variables (X) relevant to researchers, namely an interest in learning. It has one dependent variable (Y) relevant to researchers, namely mathematics learning outcomes.

Furthermore, the second study is quantitative. This study has the similarity of independent variables (X) relevant to researchers, namely learning facilities. It has one dependent variable (Y) that is relevant to researchers, namely mathematics learning outcomes.

Based on the problem formulation, the objectives of this study are to:

1. To determine whether there is a positive and significant relationship between interest in learning with mathematics learning outcomes for students of class VIII at SMP Negeri 3 Pajangan Bantul Regency, an odd semester of the academic year 2017/2018.
2. To determine whether there is a positive and significant relationship between learning facilities with mathematics learning outcomes for students of class VIII at SMP Negeri 3 Pajangan Bantul Regency odd semester of 2017/2018.
3. To determine whether there is a positive and significant relationship between interest in learning and learning facilities with mathematics learning outcomes of eighth-grade students at SMP Negeri 3 Pajangan Bantul Regency odd semester of the academic year 2017/2018.

METHODS

This research is classified as quantitative research, used to examine specific populations or samples, sampling techniques are generally carried out randomly, and data collection uses research instruments. The following research design is shown in Figure 1.
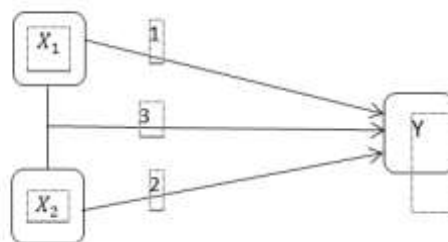
Figure 1. Research Design X_1, X_2, and Y

The research site was conducted at SMP Negeri 3 Pajangan, Bantul Regency. Simultaneously, the study's time was conducted in the odd semester of the 2017/2018 school year. This study's population were all students of class VIII odd semester of SMP Negeri 3 Pajangan, Bantul Regency, consisting of 4 classes. The sampling technique in this study used random sampling techniques to the class. It is said random because the sampling class is done randomly from the existing class. After all, the class's preparation is random, and the sample class taken is class VIII C, with 33 students. In this study, four variables are consisting of two independent variables, namely learning interest (X_1) and learning facilities (X_2) and one dependent variable, namely mathematics learning outcomes (Y).

Data collection techniques used questionnaires and test methods. In this study, the questionnaire method was used to obtain data on learning interests and learning facilities. The test method was used to obtain data on mathematics learning outcomes for students of class VIII at SMP Negeri 3 Pajangan, Bantul Regency. In this study, the class taken as a trial class was class VIII A, with 32 students. The questionnaire instrument's trial used the reviewers' validity test and the alpha formula (Arikunto, Suharsimi, 2012: 122-123). Meanwhile, the test instrument uses a validity test with the product-moment correlation formula (Sugiyono, 2015: 255), a different power test with a discrimination index formula (Arikunto, Suharsimi, 2012: 232), and a reliability test with the KR-20 formula (Arikunto, Suharsimi, 2012: 115). After the data has been collected, descriptive data analysis and analysis of prerequisite tests are carried out. Descriptive data analysis determines the grouping of high, medium, and low student data. The analysis prerequisite tests must be met, namely the normality test, independent test, and linearity test, for data analysis using correlation analysis and linear regression analysis.

RESULTS AND DISCUSSION

Rating Data Description:

a. Learning Interest Data

    Student interest in class VIII of SMP Negeri 3 Pajangan Bantul Regency odd semester of the academic year 2017/2018 is included in the medium category because the most significant frequency lies in the interval $64.3983 \leq x \leq 85.9048$, namely as many as 19 students or 57.5758%.

b. Learning Facility Data

    Class VIII student learning facilities at SMP Negeri 3 Pajangan, Bantul Regency, the odd semester of the academic year 2017/2018, are included in the medium category because the highest frequency is located at intervals $68.4641 \leq x \leq 87.44450$, namely 22 students or 66.6667%.

c. Mathematics Learning Outcomes Data

    Mathematics learning outcomes of Grade VIII students of SMP Negeri 3 Pajangan Bantul Regency odd semester of the academic year 2017/2018 are included in the medium category because the highest frequency is located at intervals $40.7380 \leq x \leq 67.5044$, namely 24 students or 72.7273%.

Based on the normality test, it was found that the variables of interest in learning, learning facilities, and mathematics learning outcomes were usually distributed. The normality test results of the four variables can be seen in Table 2.

Table 2. Normality Test Results

No.	Research Variable	χ^2_{count}	df	χ^2_{table}	Conclusion
1	Interest to learn X_1	0.1739	2	5.9915	Normal
2	learning facilities X_2	2.8814	3	7.8147	Normal
3	learning outcomes X_3	7.5500	3	7.8147	Normal

Based on the independent test, it was found that the variable of interest in learning (X_1) with the variable learning facilities (X_2) was independent. Independent test results can be seen in Table 3.

Table 3. Independent Test Results

Research Variable	χ^2_{count}	χ^2_{table}	df	Conclusion
X_1 and X_2	27.7528	37.6525	25	Independent

Based on the linearity test, it was found that interest in learning by learning outcomes in mathematics and learning facilities with learning outcomes in linear mathematics. The results of the linearity test can be seen in Table 4.

Table 4. Linearity Test Results

No.	Variable	F_{count}	df (v_1, v_2)	F_{table}	Conclusion
1	X_1 and Y	1.7058	(17,24)	2.43	Linear
2	X_2 and Y	1.0567	(16,15)	2.38	Linear

Hypothesis Test Results:
a. The first hypothesis test results are $t_{count} > t_{table}$ or $1.8069 > 1.6955$ then $H_{0,1}$ is rejected, and $H_{1,1}$ is accepted, which means there is a positive and significant relationship between learning interest and mathematics learning outcomes of students of class VIII of SMP Negeri 3 Pajangan, Bantul Regency Odd semester of the academic year 2017/2018.
b. The second hypothesis test results are $t_{count} > t_{table}$ or $2.9772 > 1.6955$ then $H_{0,2}$ is rejected, and $H_{1,2}$ is accepted, which means there is a positive and significant relationship between learning facilities and mathematics learning outcomes of students of class VIII of SMP Negeri 3 Pajangan, Bantul Regency Odd semester of the academic year 2017/2018.
c. The third hypothesis test results are $F_{count} > F_{table}$ or $4.7837 > 3.32$ then $H_{0,3}$ is rejected, and $H_{1,3}$ is accepted, which means there is a positive and significant relationship between learning interest and learning facilities with mathematics learning outcomes of VIII grade students of SMP Negeri 3 Bantul Regency displays odd semester of the academic year 2017/2018.

The results showed that there was a positive and significant relationship between learning interest and mathematics learning outcomes, with a simple correlation coefficient $R = 0.3087$ and $t_{count} = 1.8069$ while t_{table} at a significant level of 5% with df = 31 is equal to 1.6955 then obtained $t_{count} > t_{table}$ or $1.8069 > 1.6955$. This can be explained through the linear relationship $\hat{Y} = 27{,}6228 + 0{,}3529X_1$. Based on the calculation of the questionnaire, it can be concluded that the indicator of the concentration of attention to the lesson is one indicator of learning interest that gets the highest score compared to other indicators of learning interest that is 129, which means that if students can increase attention to subjects in learning mathematics, then students will be able to get results expected learning. Every increase of one unit X_1 results in a 0.3529 increase in Y. In other words, if students' interest in learning towards mathematics is high, it will have a positive impact on mathematics learning outcomes. From the results of this calculation, it can be seen that student mathematics learning outcomes will be better by increasing interest in learning.

The results showed there was a positive and significant relationship of learning independence with mathematics learning outcomes, with a simple correlation coefficient $R = 0.4715$ and the $t_{count} = 2.9772$ while t_{table} at a significant level of 5% with df = 31 is equal to 1.6955 then we get $t_{count} > t_{table}$ or $2.9772 > 1.6955$. This can be explained through the linear relationship $\hat{Y} = 5{,}0316 + 0{,}6263X_2$. Based on the calculation of the questionnaire, it can be concluded that a good study room indicator is one indicator of learning facilities that get the highest score compared to other learning facility indicators, which is 126, which means if students have a good study room in learning mathematics, then students will be able to get learning outcomes which are expected.

Every increase of one unit X_2 results in a 0.6263 increase in Y. In other words, if the learning facilities of students in learning mathematics are high, it will have a positive impact on mathematics learning outcomes. From the results of these calculations, it can be seen that student mathematics learning outcomes will be better by improving learning facilities. The results showed that there was a positive and significant relationship of interest in learning and learning facilities with mathematics learning outcomes,

with multiple correlation coefficients $R = 0.4917$ and $R^2 = 0.2418$ with $F_{count} = 4.7837$ while $F_{table} = 3.32$ at a significant level of 5% with degrees of freedom (dk) numerator ($v_1 = k = 3$) and denominator ($v_2 = \text{nk} - 1 = 33 - 2 - 1 = 30$). So we get $F_{count} > F_{table}$ or $4.7837 > 3.32$. This can be explained through the linear relationship $\hat{Y} = -1.8047 + 0.1724\,X_1 + 0.5499\,X_2$. While the relative contribution of X_1 is 18.9191%, the relative contribution of X_2 is 81.0809%. Effective contribution X_1 is equal to 04,4309%, effective contribution X_2 is equal to 18,9891%.

The learning facility variable (X_2) gave the most significant contribution to the learning interest variable, namely the relative contribution of X_2 by 81.0809% and the effective contribution of X_2 by 18.9891%. From the discussion above, it can be concluded that learning facilities are a factor that significantly influences mathematics learning outcomes. Every increase of one unit X_1 results in a 0.1724 increase in Y; every increase in one unit X_2 results in a 0.5499 increase in Y. From the results of this calculation, it can be seen that by increasing interest in learning and the availability of adequate learning facilities as a means of learning, student mathematics learning outcomes will be better.

CONCLUSION

Based on the results of research and discussion as described above, it can be concluded that there is a positive and significant relationship between learning interest and learning facilities with mathematics learning outcomes of VIII grade students of SMP Negeri 3 Pajangan, Bantul Regency, in odd semester of the academic year 2017/2018.

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