THE RELATIONSHIP BETWEEN LEARNING INTEREST AND LEARNING AREA IN THE HOME WITH MATHEMATICS LEARNING OUTCOMES IN STUDENTS CLASS VII

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ABSTRACT

The low interest in student learning can be seen from students paying less attention when math lessons are taking place. The noisy home situation makes it difficult for students to concentrate on learning mathematics at home. This study aims to determine the presence or absence of a positive and significant relationship between interest in learning and the learning environment at home with the learning outcomes of mathematics in students class VII MTs Muhammadiyah Gedongtengen Yogyakarta semester in the academic Year Of 2017/2018. This study's population was all students of class VIII odd semester at State Junior High School (MTs) Muhammadiyah Gedongtengen Yogyakarta in 2017/2018, consisting of 2 classes. The sample was taken from class VII B, which consisted of 21 students—the data collection ware test techniques and non - test. The data collection instruments were collected using a questionnaire and test methods. Test research instruments used were validity tests, different power tests, and reliability tests. The prerequisite test used was a normality test, linearity test, and independent test. Analysis of data used product-moment correlation analysis and multiple linear regression analysis. The results showed that there was a positive and significant relationship between interest in learning and the learning environment at home with the results of learning mathematics with F_{count} = 5,3828 dan F_{table}= 3,55 so that $F_{count} > F_{table}$, the double correlation coefficient of (R) 0,6118 and the coefficient of determination double (R^2) 0,3742. While the double regression equation $\hat{Y} = 16,57 + 0,35 X_1 + 0,42 X_2$ and obtained too RC X_1 = 40,15% and RC X_2 = 59,85% and EC X_1 = 15,03% and EC X_2 = 22,4%.
Keywords: Learning Interest, Learning Area In The Home, Learning Outcomes.

INTRODUCTION

One effort to advance the life of the nation is through education. Education is an essential element in all aspects of life. Education is dynamic and will continue to grow over time. Education is a conscious effort and aims to develop human qualities (Djamarah, Syaiful Bahri 2010: 22). Education also becomes an important means for the progress of a country. Everyone must need education in their lives as capital to get a better standard of living in the future because competition for life is getting tougher with the difficulty of finding work. So that through education, it is hoped that a more professional generation will be formed and grow to become more qualified human beings. In facing the era of globalization accompanied by science and technology (IPTEK), which is very rapid, someone is expected to use information well and quickly. For this reason, it requires high quality and reasoned Human Resources (HR) and the ability to process information so that it can be used to develop science and technology. Similarly, standards in educational attainment, among others, can be seen if a nation can utilize science and technology whose development is so rapid and will be primarily determined by the success of the development of education at all levels.

The government emphasized 9-year compulsory education, starting from Elementary School (SD) / Madrasah Ibtidaiyah (MI). It continued with Junior High School (SMP) / Madrasah Tsanawiyah (MTs) to deal with education problems. With this policy's existence, it has become our right as citizens to participate in educational programs, informal institutions such as schools used for learning places, and places of knowledge seeking in the learning process. In school, many subjects must be taught every level of education, one of which is mathematics. According to James. L, and James. R in Suherman, Erman, et al. (2003: 16-17) Mathematics is the science of logic regarding forms, structures, quantities,

and concepts interconnected with one another, which is divided into three fields, namely algebra, analysis, and geometry. Mathematics is also one of the sciences that underlies other sciences and plays an important role in various aspects of life. Many problems and activities in our lives must be solved using mathematical sciences such as counting, measuring, processing data, etc. Mathematics also has an important role in efforts to improve the quality of education in Indonesia. Mastery of mathematics in supporting the success of education development is very important. Because mastery of mathematics for students, both in basic education and in secondary education, will be a powerful basis for learning other subjects, both at the same level of education and a higher level of life. This means that someone who understands math subjects will have a considerable opportunity to learn other subjects. Thus, mastery of mathematics subjects for students needs to be improved, both at the primary and secondary education level to tertiary education.

Various efforts have been made to improve student success in studying mathematics and improving mathematics in general. These efforts include improving teaching materials, improving curriculum, optimizing the learning process, and using teaching aids. However, in reality, students' success in learning mathematics is still below average and has not met the minimum completeness standards. Same to (2010: 54) states that A success of learning is influenced by many factors but can be classified into two groups, namely internal factors and external factors. Internal factors are factors contained in students that include interest, intelligence, talent, independence, motivation, etc. External factors exist outside the student, including the environment, facilities and infrastructure, and others.

Based on observations and information from grade VII teachers of MTs Muhammadiyah Gedongtengen on October 12, 2017, about how students think about mathematics, that students are generally less interested in mathematics because they think that mathematics is complicated in understanding and resolving problems in it. . Some students also pay less attention when the teacher explains in front of the class during the lesson. Therefore, many students learn mathematics results that have not reached the Minimum Completion Criteria (MCC). This can be seen in the value of class VII Middle Semester Test (UTS) MTs Muhammadiyah Gedongtengen Yogyakarta, which can be seen in Table 1 below.

Table 1. Values of Midterm Deuteronomy (UTS) Odd Semester Class VII Mts Muhammadiyah Gedongtengen Yogyakarta

No	Class	MCC	the number of students	Percentage of completeness	
				Complete (%)	Not complete (%)
1	A	75	15	13,33%	86,67%
2	B	75	21	28,57%	71,43%

Source:MTs Muhammadiyah Gedongtengen Yogyakarta 2017

Besides, mathematics is a difficult subject to understand, another factor that influences the learning outcomes of mathematics is the interest in learning and the learning environment at home. According to Slameto (2010: 180), interest is a feeling of being more like and feeling interested in something or activity, without anyone telling. Interest is the acceptance of a relationship between yourself and something outside of yourself—the stronger or nearer the relationship, the greater his interest. According to Slameto (2010: 2), learning is a business process carried out by a person to obtain a change in behavior as a whole, as a result of his own experience in interaction with his environment. So the interest in learning is the feeling of love, attention, and interest students feel certain subjects. Students who have an interest in learning mathematics will be more serious and diligent in learning mathematics. Based on interviews with several students regarding the interest in learning mathematics, some students claimed to be happy with mathematics. Some students claimed to be unhappy with mathematics because they considered mathematics a difficult subject to understand. In addition to interest in learning, other factors that influence class VII MTs Muhammadiyah Gedongtengen Yogyakarta students who are still lacking are external factors, namely the home's learning environment. According to Hamalik, Oemar (2003: 195), the environment has certain meanings and influences on individuals. Then Hamalik, Oemar (2003: 195) also argued that the

environment as the basis of teaching is a conditional factor that affects individual behavior and is an important learning factor. The home's learning environment is everything in the house that has meaning or influence on individuals' learning process at home. Students who have a conducive and supportive learning environment for learning will more quickly understand and absorb the material learned because they have studied the material at home, so they tend to be more concentrated and focused on the learning process. Based on interviews with several students about the learning environment at home, some students claimed it was difficult to concentrate on learning because of the house's noisy condition, so they were lazy to learn at home. Some parents are busy working, so there is no time to remind their children to study. Some students also claim to often do homework (homework) at school.

Based on the description above, the researcher was interested in researching the relationship between interest in learning and the learning environment at home with the learning outcomes of mathematics in students class VII MTs Muhammadiyah Gedongtengen Yogyakarta odd semester in the academic Year Of 2017/2018.

The objectives of this study are as follows:

1. To determine whether there is a positive and significant relationship between interest in learning outcomes of class VII students of MTs Muhammadiyah Gedongtengen Yogyakarta even semester 2017/2018 academic year.
2. To determine whether there is a positive and significant relationship between the home learning environment and the learning outcomes of class VII students of MTs Muhammadiyah Gedongtengen Yogyakarta in the even semester of the academic year 2017/2018.
3. To determine whether there is a positive and significant relationship between interest in learning and the home learning environment with class VII students' learning outcomes of MTs Muhammadiyah Gedongtengen Yogyakarta even semester 2017/2018 academic year.

METHODS

This research is classified as quantitative research. This research was conducted at the MTs Muhammadiyah Gedongtengen in Yogyakarta. Time of study in May, even semester 2017/2018 academic year. According to Sugiyono (2008: 117), the population is a generalization area consisting of objects/subjects with specific qualities and characteristics determined by researchers to be studied and then drawn conclusions. This study's population were all seventh-grade students of MTs Muhammadiyah Gedongtengen Yogyakarta, which consisted of 2 classes, namely class VII A and VII B, amounting to 36 students. According to Sugiyono (2008: 118), Samples are part of the population's number and characteristics. In this study, the sampling used random sampling techniques for the two existing classes and obtained class B as a sample class taken randomly, and class A was used as a trial class. According to Sugiyono (2008: 60), Variables are everything in the shape of what is determined by researchers to be studied to conclude. This study consisted of 3 variables, namely two independent variables and one dependent variable, including independent variables, namely interest in learning (X_1) and home learning (X_2). While the dependent variable at-home learning environment (Y).

This study uses two data collection techniques in data collection, namely test techniques and questionnaires. Menutut Arikunto, Suharsimi (2012: 46) Tests are a series of questions or exercises or other tools used to measure skills, intelligence, knowledge, abilities, or talents possessed by individuals or groups. The test in this study was used to collect data on the dependent variable, namely the learning outcomes of class VII mathematics. According to Arikunto, Suharsimi (2012: 42), a Questionnaire or questionnaire is a list of questions that must be filled by someone who will be measured (respondent). With this questionnaire, people can know the situation/data themselves, experience, knowledge of attitudes or opinions, etc. In this study, the questionnaire was used to obtain data on learning interest and learning environment at home. The data analysis technique in this study is descriptive data analysis. To test the analysis prerequisites using a hypothesis test with requirements to meet the normality test, linearity test, and independent test. Then test the hypothesis using regression analysis. Regression analysis is a mathematical instrument that states the functional relationship between the independent

variable and the dependent variable. There is also in this study to test the hypothesis used a simple linear analysis and multiple linear regression tests. Information on the normality test, linearity test, and independent test are as follows:

a. The normality test of the data serves to test whether the correctness of the data used comes from the normal distribution or not. The normality test is carried out on the two variables used as research, namely the independent and dependent variables. The formula used is the chi-square formula as follows:

$$\chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i}$$

b. The linearity test aims to determine whether between the independent variable and the dependent variable has a linear relationship or not. To test linearity, use the following formula:

$$F_{count=} \frac{KT_{TC}}{KT_G}$$

c. This independent test was used to determine the relationship between learning interest (X_1) and the home learning environment (X_2) independent or not. The formula used is Chi Squares as follows:

$$\chi^2 = \sum_{i=j}^{b} \sum_{j=1}^{k} \frac{\left(O_{ij} - E_{ij}\right)^2}{E_{ij}}$$

Then the simple linear analysis and multiple linear regression test steps are as follows:

1. Determine whether there is a correlation between each independent variable with the dependent variable using the product-moment correlation coefficient test as follows:

$$r_{xy} = \frac{n \sum_{i=1}^{n} x_i y_i - (\sum_{i=1}^{n} x_i)(\sum_{i=1}^{n} y_i)}{\sqrt{\left\{n \sum_{i=1}^{n} x_i^2 - \left(\sum_{i=1}^{n} x_i\right)^2\right\}\left\{n \sum_{i=1}^{n} y_i^2 - \left(\sum_{i=1}^{n} y_i\right)^2\right\}}}$$

2. Test the significance of the correlation coefficient (significant test) with the t-test analysis, namely:

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

3. Determine how the equations of each independent variable with the dependent variable using a simple linear regression test as follows:

$$\hat{Y} = a + bX$$

4. Determine how the equations between the two independent variables together with the dependent variable using the linear regression test and multiple correlations as follows:

$$\hat{Y} = b_0 + b_1 X_1 + b_2 X_2$$

5. Test for whether or not there is a correlation between two independent variables simultaneously with the dependent variable using multiple correlation coefficients as follows:

$$R^2 = \frac{JK_{re\,g}}{\sum_{i=1}^{n} y^2}$$

6. Test the correlation is significant or not by using the F test as follows:

$$F = \frac{R^2(n-p-1)}{(1-R^2)p}$$

RESULTS AND DISCUSSION

The first hypothesis test results with t-test analysis obtained a simple correlation coefficient (r) between interest in learning with mathematics learning outcomes of 0.4022, which means that the relationship of variables X_1 and Y are included in the moderate category has a positive relationship. The correlation test is done and obtained t_{count} is 2.0912 while t_{table} at the significant level of 5% and v = 19 is 1.7291 so that $t_{count} > t_{table}$ is obtained, so the first hypothesis has been tested with $H_{0.1}$ rejected and $H_{1.1}$ accepted. There is a positive and significant relationship between interest in learning and mathematics learning outcomes. The relationship between learning interest (X_1) and mathematics

learning outcomes (Y) can be seen in the form of simple linear regression, namely $\hat{Y} = 46.3 + 0.38X_1$, with a direction coefficient of 0.38. This means that each increase of one unit (X_1) results in a 0.38 increase in Y. This study also obtained a correlation coefficient (r^2) of 0.1617 means that variations in the value of Y, which can be explained by the regression line equation obtained is 16.17%. The rest of the Y variable variations are influenced by other variables that are outside the equation. From the results of this calculation, it can be seen that the higher the level of interest in learning, the higher the learning outcomes of mathematics. The interest in learning in this study was obtained from questionnaires consisting of 5 indicators and 25 items of statements given to students of class VII B as a sample class of 21 students. From the questionnaire results, the interest in learning shows that some students are happy with mathematics and can understand the teacher's material. Some students are also enthusiastic about taking mathematics lessons and working on math assignments given by the teacher.

The second hypothesis test results with t-test analysis obtained a simple correlation coefficient (r) between the learning environment at home with mathematics learning outcomes of 0.4849, which means that the relationship between variables X_2 and Y is included in the moderate category and has a positive relationship. Furthermore, the correlation test is done and obtained t_{count} of 2.7638 while t_{table} at the significant level of 5% and v = 19 is 1.7291 so that $t_{count} > t_{table}$ is obtained, so the second hypothesis has been tested with $H_{0.2}$ rejected and $H_{1,2}$ accepted, then there is a positive and significant relationship between the learning environment at home and the learning outcomes of mathematics. The relationship between home learning environment (X_2) and mathematics learning outcomes (Y) can be seen in the form of simple linear regression, namely $\hat{Y} = 41.87 + 0.44 X_2$, with a direction coefficient of 0.44. This means that each increase of one unit (X_1) results in a 0.44 Y increase. This study also obtained a correlation coefficient (r^2) of 0.2352 means that the variation of the Y value that can be explained by the regression line equation obtained is 23.52%. The rest of the Y variable variations are influenced by other variables that are outside the equation. From the results of this calculation, it can be seen that the higher the level of the learning environment at home, the higher the learning outcomes of mathematics. This study's home learning environment was obtained from the learning outcomes of questionnaires consisting of 5 indicators and 25 items of statements given to students of class VII B as a sample class of 21 students. From the results of the distribution of home learning environment questionnaires, it can be seen that some students use a special room to study mathematics at home and can concentrate on learning because of the comfortable study room and good lighting, some students also have complete math textbooks and good stationery at home so that you can learn mathematics well, and students sometimes do math assignments given by the teacher with their friends at home and their parents also help when experiencing difficulties in learning mathematics.

The results of the third hypothesis test with F-test analysis obtained a simple correlation coefficient (R) between interest in learning (X_1) and home learning environment (X_2) with mathematics learning outcomes (Y) of 0.6118, which means the relationship of variables X_1 and X_2 with Y included in the moderate category and having a positive relationship. Then the correlation test was conducted and obtained F_{count} of 5.3828. In contrast, F_{table} at the significance level of 5% and v_1 numerator = 2 and v_2 the denominator = 18 at 3.55 so that $F_{count} > F_{table}$ thus, the third hypothesis was tested with $H_{0.3}$ rejected and $H_{1,3}$ accepted, then there is a positive and significant relationship between interest in learning and the learning environment at home with the learning outcomes of mathematics. The relationship between interest in learning (X_1) and home learning environment (X_2) with mathematics learning outcomes (Y) can be seen in the form of double linear regression two predictors, namely $\hat{Y} = 16.57 + 0.35 X_1 + 0.42 X_2$. this means that every increase of one unit (X_1) results in 0.35 Y increase. Every increase of one unit (X_2) results in a 0.42 Y increase. In this study also obtained a correlation coefficient (R^2) of 0.3742 indicating the amount of variable contribution X_1 and X_2 to Y. As for RC, X1 which is equal to 40.15% and RC X_2 that is equal to 59.85% and EC $X_{1,}$ which is equal to 15.03% and EC X_2 that is equal to 22.4%, meaning an interest influences learning outcomes in learning is 15.03% and home learning environment is 22.4%. In contrast, the rest is influenced by other factors not discussed in this study. From the results of this calculation, it can be seen that the higher the level of

interest in learning and the higher the level of the learning environment at home, the higher the learning outcomes of mathematics. The interest in learning can be seen from enthusiastic students about taking mathematics lessons and listening to the teacher's material. Students study earnestly and try to meet the learning schedule, even trying to work on challenging math problems even though it takes time to do it. The home learning environment can be seen from some students who have an environment that supports the learning process and has facilities in the learning room to feel comfortable with the home's atmosphere while learning mathematics. Based on the results and discussion, it is expected that various parties can optimize their role in increasing students' interest in learning and home learning environment because it affects the increase and decreases in student mathematics learning outcomes.

CONCLUSION

From the results of research and discussion, conclusions can be obtained as follows:

1. There is a positive and significant relationship between interest in learning and the mathematics learning outcomes of class VII students of MTs Muhammadiyah Gedongtengen Yogyakarta Academic Year 2017/2018. This can be proven by the results of calculations that show that the $t_{count} > t_{table}$ is 2.0912 > 1.7291 with a correlation coefficient (r) of 0.4022 and the regression equation $\hat{Y} = 46.3 + 0.38\ X_1$ with the coefficient of determination (r^2) amounting to 0.1617.

2. There is a positive and significant relationship between the home learning environment and the mathematics learning outcomes of class VII students of MTs Muhammadiyah Gedongtengen Yogyakarta in the Academic Year 2017/2018. This can be proven by the results of calculations that show that the $t_{count} > t_{table}$ is 2.7638 > 1.7291 with a correlation coefficient (r) of 0.4849 and the regression equation $\hat{Y} = 41.87 + 0.44\ X_2$ with the coefficient of determination (r^2) amounting to 0.2352.

3. There is a positive and significant relationship between the interest in learning at home learning environment and the mathematics learning outcomes of class VII students of MTs Muhammadiyah Gedongtengen Yogyakarta Academic Year 2017/2018. This can be proved by the results of calculations, which show that the magnitude of $F_{count} > F_{table}$ is 5.3828 > 3.55 with the correlation coefficient (R) of 0.6118 and the regression equation $\hat{Y} = 16.57 + 0.35\ X_1 + 0.42\ X_2$ with a coefficient of determination (R^2) of 0.3742. RC $X_1 = 40.15\%$ and RC $X_2 = 59.85\%$ and EC $X_1 = 15.03\%$ and EC $X_2 = 22.4\%$ were obtained.

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