RELATIONSHIP BETWEEN LEARNING INDEPENDENCE, INTERACTION OF FRIENDS AND ATTENTION OF PARENTS WITH MATHEMATICAL RESULTS OF CLASS VIII STUDENTS IN MUHAMMADIYAH TEMPURAN, MAGELANG DISTRICT

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ABSTRACT

In this research less of the result of the study mathematic of students are thought with many factors such as independent learning, peer interaction and attention from their parents. This study aims to determine whether there is a positive and significant relationship between independent learning, peer interaction, and attention parents with math learning outcomes eighth-grade students of SMP Muhammadiyah Tempuran Magelang in odd semester in academic year 2016/2017. The populations of this study were all students of class VIII consisted of 4 classes with a total of 90 students. Samples were taken using a random sampling technique. The data collection techniques used the non-test technique by a questionnaire and tests. The test research instruments were: validity tests, different power tests, and reliability tests. The test requirements analysis consisted of a normality test, linearity test, and independence test. The data analysis used product moment analysis and multiple linear regression analysis. The results of the study showed that there was a positive and significant correlation between learning independence, peer interaction, and parents' attention to the math learning outcomes with $R^2 = 0,26965$, $F_{countt} = 3,19982$ while $F_{table} = 2,98$ thus obtained $F_{coun} > F_{table}$ and multiple regression equation $\hat{Y} = -7.88455 + 0.38834X_1 + 0,28759X_2 + 0,13935X_3$ and SR $X_1 = 57,51$ %, SR $X_2 = 30,39\%$, SR $X_3 = 12,10\%$ and SE $X_1 = 15,51\%$, SE $X_2 = 8,19\%$ and SE $X_3 = 3,26\%$.

Keywords: learning independence, peer interaction, parents' attention, learning outcomes.

INTRODUCTION

The rapid development of science and technology has led to competition in various fields of life, one of which is the field of education. Education has an important role in efforts to develop the potential of human resources (HR) through learning activities. Learning activities are held at all levels of education ranging from elementary to tertiary institutions. Education for the life of mankind is an absolute necessity that must be fulfilled throughout life. There are three components involved in implementing education, namely education from parents, education from the community and education from the government. But formally, the education of a nation takes place in schools because formal education is a structured education pathway. Both the poor quality of education seen in student learning outcomes.

According to Slameto (2010: 54), learning outcomes are influenced by many factors, but can be classified into two groups, namely internal factors and external factors. The first factor is an internal factor which is a factor contained in students which include health, intelligence, attention, interests, talents, motivation and others. The second factor is an external factor that is a factor that does not originate from within the student but from outside himself includes family, friends, school and society.

Based on the results of an interview with one of the mathematics teachers at Muhammadiyah Tempuran Middle School on August 5, 2016, it was stated that the students' learning independence was still lacking, in the learning process in the classroom, some students acted passively and did not dare to ask questions when experiencing difficulties. Some students just wait for the results of friends' work without any attempt to practice the questions themselves. This shows that some students lack an attitude of independence in learning mathematics. Holstein, Herman (1986) said: "Independence is an important element in every learning and it can clearly improve quality because it involves student initiative." In addition to the lack of learning independence, student interaction with peers is still lacking in learning

mathematics. "One can be seen from students who talk to their peers during the lesson, this is one of the evidence that the interactions of peers created tend to be negative. Pierre in Asrori, Tulus and Arista (2009) said "peer interaction is the relationship of individuals in a small group with an average age that is almost equal. Each individual has different levels of ability. They use several different ways to understand one another by exchanging ideas. In addition, based on information from a number of eighth-grade students of Muhammadiyah Tempuran Middle School, he said that his parents paid less attention to their children's learning problems. Whereas for students who live in dormitories student learning problems are supervised by the person in charge of the hostel.

Understanding of parents according to the Big Indonesian Dictionary (2005) biological mother, father who is considered old, people who are respected. Slameto (2010) says the way parents educate their children has a great influence on their children's learning." According to Ahmadi, Abu and Supriyono, Widodo (2004) "Parents who do not pay attention to their children's education, maybe indifferent, do not pay attention to their child's learning progress will be the cause of learning difficulties." In the learning process, children need to get encouragement and attention from parents or guardians of the student. With the encouragement of parents, children will feel cared for so that they are more motivated to get maximum results.

Based on information from a number of Muhammadiyah Tempuran Middle School students, the majority of students view mathematics as a science full of complicated and confusing formulas and formulas. Therefore, mathematics is one of the subjects that is hated and considered difficult. This is indicated by the Middle Semester Deuteronomy scores obtained by students of class VIII of SMP Muhammadiyah Tempuran Magelang Regency 2016/2017 Academic Year as follows:

Table 1. Value of Middle Tests for Semester VIII Odd Semester of Muhammadiyah Middle School Combat Academic Year 2016/2017

Class	A	B	C	D
Average	59,07	47,07	36,93	59,09
Lowest	25,00	22,00	20,00	25,00
The highest	96,00	94,00	61,00	90,00
CCM	75,00	75,00	75,00	75,00
Number of students <CCM	21	29	28	16
Number of students ≥CCM	9	1	0	6
Total students	30	30	28	22

Data source: SMP Muhammadiyah Tempuran

Based on Table 1, it can be seen that student mathematics learning outcomes are still low. Mathematics value is still below the Minimum Mastery Criteria (CCM) which is 75 and the percentage of completeness values in each class is still below 50%. The data obtained from the mathematics teacher as mentioned in Table 1 shows that most students still have difficulty in learning and understanding mathematics. From the description above, researchers are interested in conducting research on "The Relationship between Learning Independence, Peer Interaction and Parents' Attention and Mathematics Learning Outcomes of Class VIII Students of SMP Muhammadiyah Tempuran, Magelang Regency, Odd Semester, 2016/2017 Academic Year."

The purpose of this study is to determine whether or not there are:
1. A positive and significant relationship between learning independence and mathematics learning outcomes in VIII grade of SMP Muhammadiyah Tempuran Magelang Regency Odd Semester 2016/2017 Academic Year.

2. A positive and significant relationship between peer interaction with mathematics learning outcomes in VIII grade of SMP Muhammadiyah Tempuran Magelang Regency Odd Semester 2016/2017 Academic Year.
3. A positive and significant relationship between parents' attention and mathematics learning outcomes for VIII grade of SMP Muhammadiyah Tempuran, Magelang Regency, Odd Semester, Academic Year 2016/2017.
4. A positive and significant relationship between learning independence and peer interaction with mathematics learning outcomes for VIII grade SMP Muhammadiyah Tempuran Magelang Regency Odd Semester 2016/2017 Academic Year.
5. A positive and significant relationship between learning independence and parental attention with mathematics learning outcomes for VIII grade of SMP Muhammadiyah Tempuran Magelang Regency Odd Semester 2016/2017 Academic Year.
6. A positive and significant relationship between peer interaction and parents' attention with mathematics learning outcomes of class VIII of SMP Muhammadiyah Tempuran Magelang Regency Odd Semester 2016/2017 Academic Year.
7. A positive and significant relationship between learning independence, peer interaction and parents' attention with mathematics learning outcomes of class VIII of SMP Muhammadiyah Tempuran Magelang Regency Odd Semester 2016/2017 Academic Year.

METHODS

This research is classified as quantitative research. The research site was conducted at Muhammadiyah Tempuran Middle School, Magelang Regency. While the research was conducted in the odd semester of the 2016/2017 school year. The population in this study were all students of class VIII odd semester of SMP Muhammadiyah Tempuran Magelang Regency which consisted of 4 classes, all homogeneous because classes were arranged randomly without leading classes. In this study, samples were taken two classes randomly using random sampling techniques to the class. It is said random because the sample class taking is done randomly from the existing class. After all, the preparation of the class is random and the sample class is VIII B with 30 students and class VIII A as a trial class with 30 students. In this study, there are two variables, namely the independent variable and the dependent variable. The independent variable (independent) consists of learning independence (X_1), peer interaction (X_2) and parents' attention (X_3), while the dependent variable (dependent) is the result of learning mathematics (Y). Data collection techniques used questionnaires and test methods. In this study, the questionnaire method was used to obtain data on learning independence, peer interaction and parents' attention. The test method is used to obtain data about mathematics learning outcomes of students of class VIII at SMP Muhammadiyah Tempuran Magelang Regency. The questionnaire test uses the content validity test by the reviewers and for the test results of learning outcomes according to Arikunto, Suharsimi (2012) product-moment correlation techniques, for the reliability test of the questionnaire instruments according to Arikunto, Suharsimi (2012) uses the alpha Cronbach formula, while the difference power test and test instrument reliability questions in Arikunto, Suharsimi (2012) using the KR-20 formula. After the data is collected, the analysis prerequisite tests that must be met include normality test, linearity test and independent test. Data analysis using product-moment correlation analysis and multiple linear regression analysis.

RESULTS AND DISCUSSION

In this section further discussion of the results of research analyzed in correlation. This research found that:
1. Discussion of the results of the first hypothesis test
    The first hypothesis test result is that there is a positive and significant relationship between learning independence and student mathematics learning outcomes. In other words, the higher the independence of student learning, the better the results of student mathematics learning.

In this study, a simple correlation coefficient (r) of 0.49722 was obtained at a significant level of 5%. So that the determinant coefficient (r^2) of 0.24723 can be obtained which can be explained that 24.723% of learning outcomes are influenced by learning independence while the rest is influenced by other factors. There is a variation in mathematics learning outcomes (Y) which is explained by learning independence (X_1) through linear lines $\hat{Y} = 4{,}09687 + 0{,}61923\,X_1$, with a regression direction coefficient of 0.61923. This means that every increase of one unit X_1 results in a 0.61923 increase in Y.

2. Discussion of the results of the second hypothesis test

The second hypothesis test result is that there is a positive and significant relationship between peer interactions with mathematics learning outcomes. In other words, the better the peer interactions that are created, the higher the mathematics learning outcomes of students. In this study, a simple correlation coefficient (r) of 0.47054 was obtained at a significant level of 5%. In order to obtain a determinant coefficient (r^2) of 0.22140 which can be explained that 22.140% of learning outcomes are influenced by peer interactions while the rest is influenced by other factors. There are variations in mathematics learning outcomes (Y) which are explained by peer interactions (X_2) through linear lines $\hat{Y} = 0{,}29408 + 0{,}77702\,X_2$, with the coefficient of regression direction of 0.77702. This means that every increase of one unit X_2 results in a 0.77702 increase in Y.

3. Discussion of the results of the third hypothesis test

The third hypothesis test result is that there is a positive and significant relationship between parents' attention and mathematics learning outcomes. In other words the better the parents' attention to their children's learning process, the math learning outcomes will also be good. In this study, a correlation coefficient (r) of 0.37307 was obtained. So that obtained (r^2) of 0.13918 which can explain that 13.918% of learning outcomes are influenced by the attention of parents while the rest is influenced by other factors. There are variations in mathematics learning outcomes (Y) which are explained by parents' attention (X_3) through linear lines $\hat{Y} = 13{,}45300 + 0{,}59420\,X_3$ with the coefficient of regression direction of 0.59420. This means that every increase of one unit X_3 results in a 0.59420 increase in Y.

4. Discussion of the fourth hypothesis test results

The fourth hypothesis test result is that there is a positive and significant relationship between learning independence and peer interaction with student mathematics learning outcomes. In other words, the higher the independence of learning and the better the peer interaction of students, the better the results of student mathematics learning. From the multiple correlation analysis, it is obtained the value of the multiple correlation coefficient (R) of 0.51485. In this study also obtained a coefficient of determination (R^2) of 0.26507 meaning 26.507% of learning outcomes are influenced by learning independence and peer interaction while the rest is influenced by other factors. There are variations in mathematics learning outcomes (Y) that can be explained by learning independence (X_1) and peer interactions (X_2) through linear lines $\hat{Y} = -4.18992 + 0.41367\,X_1 + 0{,}35065\,X_2$. This means an increase of one unit (X_1) results in 0.41367 increase in Y, and an increase in one unit (X_2) results in 0.35065 increase Y. As for the relative contribution of X_1 by 62.31% and X_2 by 37.69% and the effective contribution of X_1 by 16.52% and X_2 by 9.99%.

5. Discussion of the results of the fifth hypothesis test

The fifth hypothesis test results are that there is a positive and significant relationship between learning independence and parental attention with student mathematics learning outcomes. In other words, the better the independence of student learning and the higher the attention of parents given, the better the results of student mathematics learning. From the multiple correlation analysis, it is obtained the value of the multiple correlation coefficient (R) of 0.50891. In this study also obtained a coefficient of determination (R^2) of 0.25899 meaning 25.899% of learning outcomes are influenced by learning independence and parental attention while the rest is influenced by other factors. There are variations in mathematics learning outcomes (Y) that can be explained by

learning independence (X_1) and parents' attention (X_3) through linear lines $\hat{Y} = -3,73414 + 0,52521X_1 + 0,21047X_3$. This means an increase in one unit (X_1) resulted in a 0.52521 increase in Y, and an increase in one unit (X_3) resulted in 0,21047 an increase in Y. As for the relative contribution of X_1 by 80.96% and X_3 by 19.04% and effective contribution of X_1 of 20.97% and X_3 of 4.93%.

6. Discussion of the results of the sixth hypothesis test

    The sixth hypothesis test results are that there is a positive and significant relationship between peer interaction and parents' attention to student mathematics learning outcomes. In other words, the better the students 'peer interaction and the higher the attention given by the parents, the better the students' mathematics learning outcomes. From the multiple correlation analysis, it is obtained the value of the multiple correlation coefficient (R) of 0.48217. This study also obtained a coefficient of determination (R^2) of 0.23248 meaning that 23.248% of learning outcomes are influenced by peer interactions and parents' attention while the rest is influenced by other factors. There are variations in mathematics learning outcomes (Y) that can be explained by peer interactions (X_2) and parents' attention (X_3) through linear lines $\hat{Y} = -5,77191 + 0,64082X_2 + 0,21299X_3$. This means an increase in one unit of X_2 results in a 0.64082 increase in Y and an increase in one unit of X_3 results in a 0.21299 increase in Y. While for the relative contribution of X_2 by 78.54% and X_3 by 21.46% and effective contribution of X_2 by 18.26 % and X_3 are 4.99%.

7. Discussion of the results of the seventh hypothesis test

    The seventh hypothesis test results are that there is a positive and significant relationship between learning independence, peer interaction and parents' attention with student mathematics learning outcomes. In other words, the better the independence of student learning, the better the interaction of students' peers and the attention of students' parents, the better the students' mathematics learning outcomes. From the multiple correlation analysis, the value of the multiple correlation coefficient R was 0.51928. This study also obtained a coefficient of determination R^2 of 0.26965 meaning 26.965% of learning outcomes are influenced by learning independence, peer interaction and parents' attention while the rest are by other factors not examined in this study. Variations in mathematics learning outcomes Y can be explained by the independence of learning X1, peer interaction X_2, and parents' attention through linear lines $\hat{Y} = -7,88455 + 0,38839X_1 + 0,28759X_2 + 0,13935X_3$. This means an increase in one unit (X_1) resulted in 0.38839 increase in Y, an increase in one unit (X_2) resulted in 0.28759 increase in Y, and an increase in one unit (X_3) resulted in 0,13935 increase in Y. As for the relative contribution of X_1 by 57, 51%, X_2 of 30.39% and X_3 of 12.10% and effective contribution of X_1 of 15.51%, X_2 of 8.19% and X_3 of 3.26%.

    Based on research that has been carried out among the three variables that give the biggest contribution to learning outcomes in mathematics is learning independence. This shows that learning independence provides the most significant relationship to mathematics learning outcomes compared to peer interactions and parents' attention. This research is supported by research that has been carried out by Widiani, Anisa Rahmania (2014) with the result of learning independence giving the biggest effective contribution also among other variables that are equal to 35.73%.

CONCLUSION

Based on the results of research and discussion, the following research conclusions can be taken:

1. There is a positive and significant relationship between learning independence and mathematics learning outcomes of Grade VIII students of SMP Muhammadiyah Tempuran Magelang Regency in the odd semester of the 2016/2017 school year. This is indicated by the t-test is $t_{count} > t_{table}$ or $3,03246 > 1,7011$. The simple correlation coefficient (r) between learning independence and mathematics learning outcomes is 0.49722. And the simple regression equation Y for X_1 is $\hat{Y} = 4,09687 + 0,61923\ X_1$

2. There is a positive and significant relationship between peer interactions with mathematics learning outcomes for students of class VIII of SMP Muhammadiyah Tempuran Magelang

Regency in the odd semester of the 2016/2017 school year. This is indicated by the t-test is $t_{count} > t_{table}$ atau $2,81919 > 1,7011$. Simple correlation coefficient (r) between peer interactions with mathematics learning outcomes of 0.47054. In addition, we also obtain a simple regression equation for Y over X_2 is $\hat{Y} = 0,29468 + 0,77702X_2$.

3. There is a positive and significant relationship between parents' attention and mathematics learning outcomes of VIII grade students of SMP Muhammadiyah Tempuran Magelang Regency in the odd semester of the 2016/2017 school year. This is indicated by the t-test is $t_{count} > t_{table}$ or $2,1277 > 1,7011$. Simple correlation coefficient (r) between the attention of parents with mathematics learning outcomes of 0.3731. In addition, a simple regression equation of Y for X_3 is also obtained $\hat{Y} = 13,4530 + 0,5942\,X_3$.

4. There is a positive and significant relationship between learning independence and peer interaction with mathematics learning outcomes of Grade VIII students of SMP Muhammadiyah Tempuran Magelang Regency in the odd semester of the 2016/2017 school year. This is indicated by the F test is $F_{count} > F_{table}$ or $4,86915 > 3,35$. The multiple correlation coefficient (R) between learning independence and peer interaction with mathematics learning outcomes is 0.51485 and the coefficient of determination (R^2) is 0.26507 with linear line equations $\hat{Y} = -4,18992 + 0,41367\,X_1 + 0,35065X_2$. The relative contribution of X_1 was 62.31% and X_2 was 37.69% and the effective contribution of X_1 was 16.52% and X_2 was 9.99%.

5. There is a positive and significant relationship between learning independence and parents' attention with mathematics learning outcomes of Grade VIII students of SMP Muhammadiyah Tempuran Magelang Regency in the odd semester of the 2016/2017 school year. This is indicated by the F test is $F_{count} > F_{table}$ or $4,71839 > 3,35$. The correlation coefficient (R) between learning independence and parental attention with mathematics learning outcomes is 0.50891 and the coefficient of determination (R^2) is 0.25899 with linear line equations $\hat{Y} = -3,73414 + 0,52521X_1 + 0,21047X_3$. The relative contribution of X_1 was 80.96427% and X_3 was 19.03573% and the effective contribution of X_1 was 20.96897% and X_3 was 4.93007%.

6. There is a positive and significant relationship between peer interaction and parents' attention with mathematics learning outcomes of Grade VIII students of SMP Muhammadiyah Tempuran Magelang Regency in the odd semester of the 2016/2017 school year. This is indicated by the F test is $F_{count} > F_{table}$ or $4,08922 > 3,35$. The correlation coefficient (R) between peer interactions and parents' attention with mathematics learning outcomes is 0.48217 and the coefficient of determination (R^2) is 0.23248 with linear line equations $\hat{Y} = -5.77191 + 0.64082X_2 + 0.21299X_3$. The relative contribution of X_2 was 78.54% and X_3 was 21.46% and the effective contribution of X_2 was 18.26% and X_3 was 4.99%.

7. There is a positive and significant relationship between learning independence, peer interaction and parents' attention with mathematics learning outcomes of Grade VIII students of SMP Muhammadiyah Tempuran Magelang Regency in the odd semester of the 2016/2017 school year. This is indicated by the F test is $F_{countt} > F_{table}$ or $3,19982 > 2,98$. Ko correlation coefficient (R) between learning independence, peer interaction and parents' attention with mathematics learning outcomes of 0.51928 and the coefficient of determination (R^2) of 0.26965 with linear line equations correlation coefficient (R) between learning independence, peer interaction and parents' attention with mathematics learning outcomes of 0.51928 and the coefficient of determination (R^2) of 0.26965 with linear line equations $\hat{Y} = -7.88455 + 0.38839X_1 + 0,28759X_2 + 0.13935X_3$. The relative contribution of X_1 was 57.51%, X_2 was 30.39% and X_3 was 12.10% and the effective contribution was 15.51%, X_2 was 8.19% and X_3 was 3.26%.

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