THE CORRELATION BETWEEN LEARNING MOTIVATION, PEERS, AND INTENSITY OF LEARNING WITH MATHEMATICS LEARNING OUTCOMES OF GRADE X STUDENTS OF SMA NEGERI 1 TURI

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ABSTRACT

Based on the information from SMA Negeri 1 Turi, student motivation in learning is still lacking, there are students who spoke with the classmate during the teaching and learning activities, as well as some students learning intensity is low. This study aims to determine whether there is a positive and significant relationship between motivation to learn, peers and learning intensity with mathematics learning outcomes in class X SMA Negeri 1 Turi Odd Semester of the school year 2016/2017. The study population was all students in grade X SMAN 1 Turi MIPA odd semester of the school year 2016/2017. The study was taking the X MIPA 2 class as the research sample by random sampling technique toward the class. Data collection techniques in the form of technique tests and questionnaires. The research instrument test was using validity testing, different power testing, and reliability testing. Prasyarat test analysis included a normality test, independent test, linearity test. Analysis of the data for testing hypotheses was using correlation analysis and linear regression analysis. The results showed that there was a positive and significant correlation between motivation to learn, peers and intensity of learning with learning outcomes mathematics, with $r = 0,511$, and the linear regression equation $\hat{Y} = -21,333 + 0,262\,X_1 + 0,343\,X_2 + 0,383\,X_3$. The donations were measured relatively $X_1 = 5,321\%$, $X_2 = 40,861\%$, $X_3 = 38,734\%$ and also effective contribution $X_1 = 5,321\%$, $X_2 = 10,655\%$, $X_3 = 10,101\%$. This indicates that the peers (X_2) have a greater relationship with mathematics learning outcomes compared to the study motivation (X_1) with mathematics learning outcomes and learning intensity (X_3) with mathematics learning outcomes.
Keywords: learning motivation, peers, learning intensity, mathematics learning outcomes.

INTRODUCTION

Education is part of the development and progress of a nation. The education sector is one of the targets of national development that is constantly undergoing renewal that is adjusted to the situation and conditions that exist at that time. The renewal of education is carried out in an effort to meet the demands of the development of science and technology, the arts, and the development of society. Many sciences whose discoveries and developments depend on mathematics. But in reality, mathematics is still considered a difficult subject.

Based on an interview on July 18, 2016, at Turi 1 Public High School which is located in Gununganyar, Donokerto, Turi, Sleman, Mathematics teacher Dra. Retno Kuntari said that most students found it difficult to learn mathematics. Some grade X students say that mathematics is a difficult subject and many formulas. This results in the low learning outcomes of mathematics achieved by students. From interviews with a number of grade X students of SMA Negeri 1 Turi, students' motivation in learning mathematics is still lacking, because mathematics is a difficult subject compared to other subjects. One of Turi's 1 High School students, Achmad Abu Salim, a class X MIPA 1, said that they did not like math, because mathematics had many formulas. In addition, students are also less motivated in learning because of the lack of facilities from parents and support from parents to learn.

Understanding motivation in learning activities can be done as a whole driving force or encouragement within students consciously or unconsciously to take any action that gives rise to learning activities, which ensures that learning activities can be achieved. Hamalik, Oemar (2011: 158) said that "Motivation is a change in energy in a person (person) that is marked by the emergence of feelings and reactions to achieve goals." According to Hamdani (2011: 290), "motivation is the power or actions that encourage a person; action or action is a symptom as a result of the existence of motivation. "According to Hamalik, Oemar (1992: 50-51)," Motivation is encouragement that causes an action or action to occur. "Types of motivation according to Hamalik, Oemar (2011: 162- 163)

a. Intrinsic motivation is motivation that lives in students and is useful in functional learning situations. Intrinsic motivation is real and real motivation is called the term sound motivation.
b. Extrinsic motivation is motivation that is caused by factors from outside the learning situation, such as credit scores, diplomas, level of prizes, medal of contradictions, and negative competition which are sarcasm, ridicule, and punishment.

Based on interviews with mathematics teacher Dra. Retno Kuntari said that there were still students who talked to their peers when the learning process took place. But according to Nabila Putri, a class X MIPA 2 student, peers in the school environment are clustered together, because they prefer discussions with friends rather than asking questions directly with the teacher when they don't understand the lesson.

Peers are expected to have a positive influence on any activity at school. Peers are all people who have the same age level who provide information about the world outside the family to receive feedback about their abilities. In this case peers in the school environment. According to Santrock (2003: 219) "Peers (peers) are children or adolescents with the same level of age or maturity." According to Hetherington & Parke in Desmita (2010: 145) "Peers (peers) as a social group often defined as all people who have social similarities or who have similar characteristics, such as age level similarity. While according to Lewis & Rosenblum in Desmita (2010: 145) "definition of peers is more emphasized on the similarity of behavior or psychological." peers according to Desmita (2012: 227-228):

The function of peer friendship is as follows:
a. As a friend (companionship), where friendship gives children a close friend, friends who are willing to spend time with them and join in doing joint activities.
b. A stimulation (stimulation), where friendship gives children interesting information, excitement and entertainment.
c. As physical support (physical support), where friendship gives time, abilities and help.
d. As ego support, where friendship provides hope or support, encouragement and feedback that can help children maintain an impression of themselves as capable, attractive, and valuable individuals.
e. As a social comparison (social comparison), where friendship provides information about how to relate to others, and whether the child is doing well.
f. As a friend of intimacy/affection, where friendship gives children a warm, close, trusting relationship with other children, which is related to self-expression.

Mathematics teacher Dra. Retno Kuntari said that students still lacked readiness to study before attending the lesson. The intensity of student learning at SMA Negeri 1 Turi is still low because some students prefer to study only when there will be a test compared to studying regularly.

The intensity of learning is one of the principles of learning in order to get maximum results with effective use of time. Students are expected to learn more regularly so that learning outcomes increase. According to Ali, Muhammad (2010: 9-12) "Learning intensity is the ability, seriousness of students in learning or active learning that students do in an effort to gain better understanding, knowledge, and behavior through training procedures and experiences conducted both at school and at home. "Learning intensity can take many forms:
a. Learning discipline (discipline in keeping the learning schedule, discipline in overcoming all temptations that will delay learning time, discipline in maintaining physical condition to always be healthy and fit).
b. Regularity in learning (regularly in following lessons, regularly in learning at home by repeating lessons, regularly in having lesson books, regularly in arranging equipment used for learning eg stationery).
c. Concentration in learning (concentration of the mind).

The results of exposure to the state of Turi 1 high school students above are supported by data on daily math scores of odd semester 2016/2017 school tests which explain that the mathematics

learning outcomes of grade X students of SMA Negeri 1 Turi are still low. The number of students with an average grade below the KKM is 75 students out of 124 students.

From the background stated above, the researcher intends to examine "The Relationship between Learning Motivation, Peers and Learning Intensity with Mathematics Learning Outcomes in Class X Students of SMA 1 Turi Odd Semester 2016/2017 Academic Year." The aim of this research is to find out whether there is a positive and significant relationship between learning motivation, peers and learning intensity with the mathematics learning outcomes of students of class X SMA 1 Turi Odd Semester 2016/2017 Academic Year.

METHODS

The research design used is as follows:
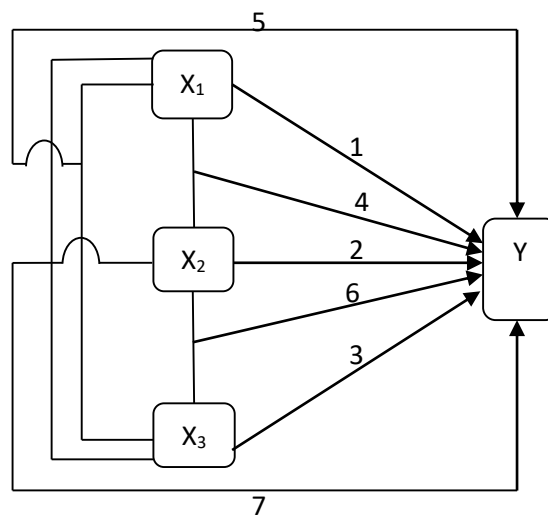
Picture 1. Schema of Relationships between Variables in Research

Information :

X_1 = Student learning motivation

X_2 = Peers

X_3 = Learning Intensity

Y   = Mathematics Learning Outcomes

This research was conducted at SMA Negeri 1 Turi, Sleman Regency. Held during the odd semester of the 2016/2017 school year in class X SMA 1 Turi. The population in this study were all students of class X MIPA 1 Public High School Turi, Sleman in the odd semester of the 2016/2017 academic year consisting of 2 classes, namely class X MIPA 1 and X MIPA 2, each class consisted of 32 students.

In this study, sampling was conducted using random sampling techniques. It is said random because the sampling class is done randomly from the existing class, because the preparation of the class is random and the sample class is taken in class X MIPA 1, with 32 students. Whereas class X MIPA 2 with 32 students as a pilot class. The techniques used to collect data in this study were questionnaires and tests. Before being used to reveal the actual data, the instrument was tested in a pilot class with the aim of knowing the validity and reliability of the instrument or in other words to identify problems that were weak or flawed. According to Suharsimi Arikunto (2013: 211-212), an instrument is said to be valid if it is able to measure what is desired.

The analysis test used in this study is a prerequisite test in the form of a normality test, a linearity test and an independent test, and a hypothesis test. To test the hypothesis, it uses simple linear regression analysis and multiple linear regression tests. After the test requirements analysis is done, then

testing the hypothesis. To test the hypothesis using simple correlation analysis simple correlation test, multiple regression analysis test, regression test and multiple linear correlation.

RESULTS AND DISCUSSION
1. **Descriptive Research Data**
    a. Learning Motivation (X_1)
       Learning motivation data obtained from the instrument score of 18 items given to 32 students in the sample class. From these data obtained the highest score of 113 and the lowest score of 84. The results of categorizing the distribution of the number of students can be known included in the medium category because the greatest frequency lies in the interval $86,864 \leq X \leq 100,761$ namely as many as 20 students or 62.5%.
    b. Peer (X_2)
       Peer data was obtained from a questionnaire instrument with 25 items given to 32 students in the sample class. The results of categorizing the distribution of the number of students are included in the moderate category because the greatest frequency lies in the interval of $89,726 \leq X \leq 108,648$ that is as many as 23 students or 71.875%.
    c. Learning Intensity (X_3)
       Learning intensity data was obtained from a questionnaire instrument with 25 items given to 32 students in the sample class. The results of categorizing the distribution of the number of students can be known to be included in the medium category because the greatest frequency lies in the interval $86,279 \leq X \leq 102,783$ which is as many as 23 students or 71.875%.
    d. Mathematics Learning Outcomes (Y)
       Data on mathematics learning outcomes were obtained from 18 test items given to 32 students in the sample class. The results of categorizing the distribution of the number of students can be known to be included in the medium category because the greatest frequency lies in the interval $63.7992 \leq X \leq 90.3634$, which is 25 students or 78.125%.
2. **Analysis of Prerequisite Analysis**
       This test is conducted to determine learning motivation (X_1), peers (X_2), learning intensity (X_3) and mathematics learning outcomes (Y) are normally distributed or not. Can be seen in Table 1.

Table 1. Summary of Normality Test Results

No	Research variable	χ^2_{stat}	Db	χ^2_{table}	Conclusion
1	X_1 (Motivation to learn)	2,23	2	5.992	Normal
2	X_2 (Friends of the same age)	1,672	3	7,815	Normal
3	X_3 (Learning Intensity)	2,574	2	5.992	Normal
4	Y (Learning outcomes)	3,965	3	7,815	Normal

Linearity test is used to determine whether the independent variables (X_1, X_2, and X_3) and the dependent variable (Y) are linear or not. Can be seen in Table 2.

Table 2. Summary of Linearity Test Results

No	Variable	F_{stat}	F_{table}	Conclusion
1	X_1 and Y	0,963	2,44	Linear
2	X_2 and Y	0,987	2,93	Linear
3	X_3 and Y	-0,621	2,66	Linear

An independent test was conducted to determine whether there was a relationship between the independent variables, namely learning motivation variables (X_1), peers (X_2) and learning intensity (X_3) using the chi-square formula (X^2). Can be seen in Table 3.

Table 3. Summary of Independent Test Results

No	Research variable	χ^2_{stat}	χ^2_{table}	Conclusion
1	X_1 and X_2	31,448	37,652	Independent
2	X_1 and X_3	31,801	37,652	Independent
3	X_2 and X_3	35,106	37,652	Independent

DISCUSSION

The distribution of the amount based on the category of learning motivation is in the medium category because the greatest frequency lies in the interval of $86,864 \leq X \leq 100,761$ ie as many as 20 students or 62.5%. The average student asks about material that is not yet understood, does not easily give up completing assignments, is bored with monotonous teaching, and pays attention to lessons from the teacher. The distribution of numbers based on the category of peers belongs to the medium category because the greatest frequency lies in the interval of $89,726 \leq X \leq 108,648$ which is as many as 23 students or 71.875%. The average student will ask peers when they don't understand the material taught by the teacher, encourage each other to learn mathematics, discuss math lessons with peers, and work on math problems as a group discussion. The distribution of the number based on the category of learning intensity is classified in the medium category because the greatest frequency is located at an interval of $86.279 \leq X \leq 102.783$ which is as many as 23 students or 71.875%. The average student is diligent in recording mathematics subject matter, preparing learning equipment before going to school, and students feel bored with the repetition of unattractive mathematics material.

The purpose of the discussion of the results of this study was to determine the relationship between learning motivation (X_1), peers (X_2) and learning intensity (X_3) with mathematics learning outcomes (Y) of class X students of SMA Negeri 1 Turi odd semester 2016/2017 school year.

1. The first hypothesis test result is that there is a positive and significant relationship of learning motivation with mathematics learning outcomes, with a simple correlation coefficient (r) = 0.384, at a significant level of 5%. and results first hypothesis test result is that there is a positive and significant relationship of learning motivation with mathematics learning outcomes, with a simple correlation coefficient (r) = 0.384, at a significant level of 5%. and result $t_{stat} = 2,28$ while t_{table} at a significant level of 5%, "v" = 30 which is equal to 1,697. Was obtained $t_{stat} = 2,28$; $t_{table} = 1,697$ so $t_{stat} > t_{table}$, This can be explained through linear relationships $\hat{Y} = 5,491 + 0,726 X_1$. This means that every increase of one unit X_1 results in 0.726 increase in Y, in other words, the higher the motivation to learn, the results of learning mathematics will increase. From the results of this calculation, it can be seen that by increasing motivation to learn mathematics student learning outcomes will be even better, and vice versa.

2. The second hypothesis test result is that there is a positive and significant relationship from peers with mathematics learning outcomes, with a simple correlation coefficient (r) = 0.452, at a significant level of 5%. This can be explained through linear relationships $\hat{Y} = 8,226 + 0,656 X_2$. This means that each increase in one unit of X_2 results in 0.656 increase in Y, in other words, the better the relationship with peers, the results of learning mathematics will increase. From the results of this calculation, it can be seen that by adding peers, the students' mathematics learning outcomes will be even better, and vice versa.

3. The third hypothesis test results are that there is a positive and significant relationship of learning intensity with mathematics learning outcomes, with a simple correlation coefficient (r) = 0.439 at a significant level of 5%. This can be explained through a linear relationship $\hat{Y} = 4,44 + 0,729 X_3$. This means that every increase of one unit X_3 results in a 0.729 increase in Y, in other words, if the intensity of learning increases, the learning outcomes of mathematics will increase. From the results of this calculation, it can be seen that by increasing the intensity of learning the student's mathematics learning outcomes will be even better, and vice versa.

4.   The fourth hypothesis test results are that there is a positive and significant relationship of learning motivation and peers with mathematics learning outcomes, with a multiple correlation coefficient (R) = 0.478 at a significant level of 5%. This can be explained through linear relationships $\hat{Y} = -9{,}829 + 0{,}358\,X_1 + 0{,}501X_2$. This means that every increase of one unit X_1 results in a 0.358 increase in Y and every increase in one unit X_2 results in a 0.501 increase in Y, in other words, if learning motivation and peers are high, the mathematical learning outcomes will increase. From the results of these calculations, it can be seen that by increasing motivation to learn and add peers to mathematics, students' mathematics learning outcomes will be even better, and vice versa.

5.   The fifth hypothesis test results are that there is a positive and significant relationship of learning motivation and learning intensity with mathematics learning outcomes, with a multiple correlation coefficient (R) = 0.480 at a significant level of 5%. This can be explained through linear relationships $\hat{Y} = -17{,}872 + 0{,}422\,X_1 + 0{,}548\,X_3$. This means that every increase of one unit X_1 results in a 0.422 increase in Y and every increase in one unit X_3 results in a 0.548 increase in Y, in other words, if learning motivation and learning intensity are good, the mathematical learning outcomes will increase. From the results of these calculations, it can be seen that by increasing motivation to learn and the intensity of learning in mathematics subjects, student mathematics learning outcomes will be even better, and vice versa.

6.   The sixth hypothesis test results are that there is a positive and significant relationship of peers and the intensity of learning with mathematics learning outcomes, with a multiple correlation coefficient (r) = 0.498 at a significant level of 5%. This can be explained through linear relationships $\hat{Y} = -10{,}483 + 0{,}428\,X_2 + 0{,}437\,X_3$. This means that every increase of one unit X_2 results in a 0.428 increase in Y and every increase in one unit X_3 results in a 0.437 increase in Y, in other words, if peers and student learning intensity are good, the mathematical learning outcomes will also increase. From the results of these calculations, it can be seen that by increasing peers and the intensity of learning in mathematics subjects, students' mathematics learning outcomes will be even better, and vice versa.

7.   The seventh hypothesis test results are that there is a positive and significant relationship between learning motivation, peers and learning intensity with mathematics learning outcomes, with a multiple correlation coefficient (r) = 0.511 at a significant level of 5%. This can be explained through linear relationships $\hat{Y} = -21{,}333 + 0{,}262\,X_1 + 0{,}343\,X_2 + 0{,}383\,X_3$. This means that every increase of one unit X_1 results in 0.262 increase in Y, every increase in one unit X_2 results in 0.343 increase in Y and every increase in one unit X_3 results in 0.383 increase in Y, in other words if learning motivation, peers and learning intensity get better, the learning outcomes the mathematics will increase. From the variable of learning, motivation obtained a relative contribution of 20.405% and an effective contribution of 5.321%. From peers obtained a relative contribution of 40.861% and an effective contribution of 10.655%. From the learning, intensity obtained a relative contribution of 38.733% and an effective contribution of 10.101%. Student mathematics learning outcomes are influenced by learning motivation, peers and learning intensity by 26,077% while 73,923% are influenced by other factors not discussed in this study.

CONCLUSION

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

1.   There is a positive and significant relationship between learning motivation and mathematics learning outcomes of class X students of SMA Negeri 1 Turi in the odd semester of the 2016/2017 school year.

2.   There is a positive and significant relationship between peers and mathematics learning outcomes of class X students of SMA Negeri 1 Turi in the odd semester of the 2016/2017 school year.

3. There is a positive and significant relationship between the intensity of learning with the learning outcomes of students of class X in SMA Negeri 1 Turi in the odd semester of the 2016/2017 school year.

4. There is a positive and significant relationship between learning motivation and peers with the mathematics learning outcomes of class X students of SMA Negeri 1 Turi in the odd semester of the 2016/2017 school year.

5. There is a positive and significant relationship between learning motivation and learning intensity with the mathematics learning outcomes of class X students of SMA Negeri 1 Turi in the odd semester of the 2016/2017 school year.

6. There is a positive and significant relationship between peers and the intensity of learning with mathematics learning outcomes of class X students of SMA Negeri 1 Turi odd semester 2016/2017 academic year.

7. There is a positive and significant relationship between learning motivation, peers, and learning intensity with the mathematics learning outcomes of class X students of SMA Negeri 1 Turi in the odd semester of the 2016/2017 school year.

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