THE RELATIONSHIP BETWEEN INDEPENDENT, DISCIPLINE AND LEARNING MOTIVATION WITH STUDENTS MATHEMATIC LEARNING OUTCOMES IN CLASS VII

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ABSTRACT

Low student learning outcomes are associated with several factors, including learning of independence, the discipline of learning, and motivation to learn. This research aims to determine whether or not a positive and significant relationship independent, discipline, and motivation to learn with the results of learning mathematics lessons for the student grade VII in Muhammadiyah Junior High School 2 Gamping (SMP Muhammadiyah 2 Gamping) Sleman district second semester in academic year 2016/2017. The population in this research comprises all of the students of grade VII SMP Muhammadiyah 2 Gamping Sleman district second semester in the academic year 2016/2017, consisting of 3 classes with a total of 108 students. The sample of this research is grade VIIC, 37 students, and the research experiment is grade VIIA which is 36 students and uses the random sampling technique to the class. The data collection technique is done by questionnaire and test method. Test of questionnaire instrument using a reliability test during the test of test instrument use validity test, a test of different power, and reliability test. Test prerequisite analysis is a test of normality, independent test, and linearity test. The data analysis for hypothesis testing using simple correlation analysis, multiple regression analysis, regression analysis of three variables. The results showed a positive and significant relationship between independent, discipline, and motivation to learn with the results of learning mathematics with F_{count} = 5,0523 and F_{table} = 2,8916, so obtained $F_{count} > F_{table}$. The double correlation coefficient (R) is 0,5610 with regression equation $\hat{Y} = 33{,}1471 + 0{,}1338 + 0{,}2949\,X_2 + 0{,}1081\,X_3$ relative contribution X_1=23,624%, X_2=64,488%, and X_3 =11,888% with the coefficient of determination (R^2) is 0,3147 and effective contribution X_1 = 7,435%, X_2=20,297%, and X_3=3,742%.

Keywords: Learning of Independent, Discipline of Learning, Motivation to Learn, Mathematics Learning Outcomes

INTRODUCTION

Education is one important element in the progress of a nation. Education carried out by the nation, will increase the intelligence of someone. With intelligence, one's thinking ability will increase. This can be seen from a person's actions in advancing the Indonesian nation such as learning activities carried out at school and at home, which can develop one's level of thinking both in calculations and knowledge. As stated in RI Law No.20 of 2003 concerning the National Education System chapter, I Article 1 states that: Education is a conscious and planned effort to create an atmosphere of learning and learning process so that students actively develop their potential to have religious-spiritual power, self-control, personality, intelligence, noble character, and the skills needed by himself, society, nation, and country (Depdikbud: 2003). One of the sciences is mathematics. Mathematics as the basis of science that is developing nowadays, because mathematics plays a role in the way students think. However, mathematics is one of the subjects that are not liked by most students, because mathematics is considered as a boring, scary, even difficult subject. Students who do not learn mathematics early can regard mathematics as a difficult subject because there is no intention for students to want to learn mathematics well. Mathematics is not difficult if students want to learn it and try to solve every problem. Things that can make students difficult in learning mathematics because the lessons are abstract. Also, mathematics uses various formulas, symbols, and symbols that students cannot easily understand. Students do not want to learn mathematics so that students' learning outcomes in mathematics are low. This is shown in the

average mathematical value of Final Examinations in the VII grade of Odd Semester SMP Muhammadiyah 2 Gamping Sleman Regency, shown in table 1.

Table 1. List of Mathematics Values for Grade VII Odd Semesters SMP Muhammadiyah 2 Gamping Sleman Regency Academic Year 2016/2017

Class	Maximum score	Minimum score	Average score
VII A	55,00	25,00	34,44
VII B	37,50	12,50	23,89
VII C	57,50	17,50	31,55

(Source: SMP Muhammadiyah 2 Gamping Kabupaten Sleman)

Table 1 shows that the average grade of mathematics subjects in grade VII Odd Semester SMP Muhammadiyah 2 Gamping Sleman Regency is still low.

Many factors determine student success in learning both internal and external factors. Internal factors include interests, talents, motivation, independence. While external factors cover the learning environment at school, friends hang out, the learning environment at home. The critical success factor in learning is students as principals in learning activities. Without awareness and will, the learning process will not succeed. Learning independence is a learning activity that makes students learn to be independent. During the learning process, student independence is low. This can be seen when following the teaching and learning process is passive; even some students, if given a problem, do not want to solve it independently but by looking at other friends' work. Also, the existence of a low student learning discipline factor influences student learning outcomes. The existence of discipline in school, can train and form a student who always complies with applicable rules. According to Tu'u (2004: 32 in Munawaroh et al., 2013: 10), discipline is an attempt to control oneself and the mental attitude of an individual or society in developing compliance and obedience to rules and orders encouragement and awareness that arise from the heart.

Knowing what activities indicate student discipline in school, for example, collecting homework assignments on time, completely uses school attributes. This assumes that learning discipline is closely related to student motivation. With motivation, student discipline will be formed. Motivation as a motivator to influence a person's behavior. An educator must foster student motivation so that students have the nature of independence and discipline in learning to improve student learning outcomes. Independence, discipline, and student motivation are important because they encourage students to get better learning outcomes, so they will continue to study hard. Independent attitude, discipline, and motivation are very important to have students directed and organized in learning. So that student learning outcomes in mathematics will increase. Based on observations on Grade VII students of SMP Muhammadiyah 2 Gamping, Sleman Regency on Saturday, October 22, 2016, independence, discipline, and student motivation can be identified as:

1. some students do not collect homework given by the teacher on time
2. Some students do homework while at school, there are even students who cheat their friend's homework
3. Students do not want to open books on their own
4. Students do not want to record material delivered by the teacher
5. Students cheat on exams, both asking friends and using paper thrown
6. When the teacher is not in a class, students enter and leave the classroom.

Based on the observations above, independence, discipline, and student motivation need to be improved. By being independent, disciplined, and highly motivated, students will seriously take lessons in class, arrive on time, take notes, think deeply about the material they get. So that student learning outcomes will increase.

Based on the background of the above problems, other problems can be identified: 1) The discipline of class VII students of SMP Muhammadiyah 2 Gamping is still low. 2) Learning independence

grade VII students of SMP Muhammadiyah 2 Gamping are still low. 3) The motivation for the learning of VII graders of SMP Muhammadiyah 2 Gamping is still low. 4) Learning outcomes of VII grade students of SMP Muhammadiyah 2 Gamping are still low. 5) Some students are not honest when taking an exam. 6) Lack of teacher interaction with students, so students enter and exit the classroom

Based on the background of the problem, it can be formulated the problem to be investigated is: 1) Is there a positive and significant relationship between learning independence and mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year? 2) Is there a positive and significant relationship between discipline, learning, and mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year? 3) Is there a positive and significant relationship between learning motivation and mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year? 4) Is there a positive and significant relationship between independence and discipline of learning and mathematics learning outcomes for students of class VII of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year? Is there a positive and significant relationship between independence and learning motivation with mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year? 5) Is there a positive and significant relationship between discipline and motivation to learn with mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year? 6) Is there a positive and significant relationship between independence, discipline, and motivation to learn with mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year?

The objectives of this research are 1) To determine whether or not there is a positive and significant relationship between learning independence and mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year. 2) To determine whether or not there is a positive and significant relationship between learning discipline and mathematics learning outcomes for Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year. 3) To find out whether or not there is a positive and significant relationship between learning motivation and mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year. 4) To find out whether or not there is a positive and significant relationship between independence and discipline of learning and mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year. 5) To find out whether or not there is a positive and significant relationship between independence and learning motivation with mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year. 6) To find out whether or not there is a positive and significant relationship between discipline and learning motivation with mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year. 7) To find out whether or not there is a positive and significant relationship between independence, discipline, and motivation to learn with mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year.

METHODS

This research is classified as quantitative research. The place of research was carried out at SMP Muhammadiyah 2 Gamping, Sleman Regency. While the research was conducted in the even semester of the 2016/2017 school year. This study population was seventh-grade students in the even semester of SMP Muhammadiyah 2 Gamping, Sleman Regency, which consisted of 3 classes. Based on the average grade VII UTS so that the population in this study consisted of 3 classes. In this study, samples were taken at random using a random sampling technique for class. It is said to be random because sampling classes are carried out randomly from existing classes. After all, each class's ability in the population is the same, and what is taken as a sample class is VIIC, and the test class is VIIA. According to Sugiyono (2010: 2), the research variable is everything in the form of whatever is determined by the researcher to be studied to obtain information about it, and then conclusions are drawn. In this study, there are three independent variables and one dependent variable, namely:

1. Learning independence as an independent variable (X_1)
2. Learning discipline as an independent variable (X_2)
3. Learning motivation as an independent variable (X_3).
4. Mathematical learning outcomes as the dependent variable (Y).

Data collection techniques using questionnaires and tests. According to Arikunto, Suharsimi (2013: 42), a questionnaire is a list of questions or statements that must be filled in by the person to be measured (respondent). The questionnaire method used to obtain data on independence, discipline, and motivation to learn. Meanwhile, according to Bukhori, Muchtar in the book Evaluation Techniques (in Arikunto, Suharsimi, 2013: 46), the test is an experiment conducted to find out the presence or absence of certain learning outcomes in a student or group of students. The test method used to obtain data on mathematics learning outcomes of students of class VII at SMP Muhammadiyah 2 Gamping, Sleman Regency.

Validity test. Arikunto, Suharsimi (2013: 72), validity is a noun. So, valid data is data that does not differ between the research results and the actual situation on the research object. The summary of results for valid questions is 18 questions, while there are 12 questions out of 30 questions. A summary can be seen in table 1.

Table 1. Summary of Test Results of Research Instrument Validity

Variable	Number of Items	Total of Items for Fall	Number of Items for Fall	Number of Items Valid
Mathematical Learning Outcomes	30	12	2,4,7,9,12,14,15,17,20,22,26,29	18

Differential Power Test. The ability of a matter to distinguish between smart students (high ability) with stupid (low ability). A summary can be seen in table 2.

Table 2. Summary of the Test Distinguishing Results of Research Instruments

Research Instruments	Question Criteria				
	Very Good	Good	Enough	Less	Very Less
Question Number	-	3	15	-	-

Reliability Test. To calculate the statement of the questionnaire (questionnaire) of independence, discipline, and motivation to learn, the Cronbach Alpha formula is used, and to test the reliability of the learning outcomes test the Kuder-Richardson formula, KR-20 is used. The reliability test summary is seen in table 3.

Table 3. Summary of Instrument Reliability Test Results

No	Variable	r_{count}	r_{table}	Number of items	Status
1	Self-Reliance Learning (X_1)	0,89	0,32	25	Reliable
2	Learning discipline (X_2)	0,88	0,32	25	Reliable
3	Learning Motivation (X_3)	0,68	0,32	25	Reliable
4	Mathematics Learning Results (Y)	0,74	0,32	18	Reliable

Once the data has been collected, the required analysis prerequisite tests include the normality test, the linearity test, and the independence test. Data analysis uses simple correlation analysis, double regression analysis, and 3-variable regression analysis.

RESULTS AND DISCUSSION

In this section, further discussion of the results of the research analyzed in correlation. This study found that the seventh hypothesis test results were a positive and significant relationship between independence, discipline, and motivation to learn with the results of learning mathematics. The higher the independence, discipline, and learning motivation, the higher the mathematics learning outcomes. In this study also uses analysis prerequisite tests which include:

A normality test is used to test the distribution of data obtained on each variable normally distributed or not. A summary can be seen in table 4.

Table 4. Normality Test Results

No	Variable	χ^2_{count}	χ^2_{table}	df	Information
1	Self-Reliance Learning (X_1)	2,8637	7,8147	3	Normal
2	Learning discipline (X_2)	0,3756	5,9915	2	Normal
3	Learning Motivation (X_3)	9,0449	9,4877	4	Normal
4	Mathematics Learning Results (Y)	1,5641	7,8147	3	Normal

Independence test is used to find out whether or not there is a relationship between independent variables. The summary can be seen in table 25

Table 5. Independence Test Results

Variable	χ^2_{count}	χ^2_{table}	df	Info.
(X_1) and (X_2)	43,4306	52,1923	25	Independent
(X_1) and (X_3)	38,7864	52,1923	25	Independent
(X_2) and (X_3)	39,7332	52,1923	25	Independent

Linearity test is used to find out between independent variables and variables, whether they require a linear relationship or not. Can be seen in table 26.

Table 26. Linearity Test Results

Variable	F_{count}	F_{table}	v_1	v_2	Info.
(X_1) with Y	1,7119	2,4379	22	13	Linier
(X_1) with Y	1,0151	2,5139	23	12	Linier
(X_2) with Y	1,1131	2,5139	22	13	Linier

From the simple correlation analysis, the simple correlation coefficient (r) between learning independence (X_1) and learning outcomes (Y) is 0.4897. In addition, a simple regression equation of Y for X_1 is also obtained as $\hat{Y} = 42.5789 + 0.4315\ X_1$. Furthermore, testing the significance of the correlation coefficient by using t-test obtained $t_{count} = 3{,}3227$ while $t_{table} = 2{,}0301$ with a significant level of 5% and $dk = n - 2 = 37 - 2 = 35$, so $t_{count} > t_{table}$. Thus, the first hypothesis test result is obtained that there is a positive and significant relationship between learning independence with mathematics learning outcomes.

From the simple correlation analysis, the simple correlation coefficient (r) between learning discipline (X_2) and learning outcomes (Y) is 0.5415. In addition, we also obtained a simple regression equation for Y over X_2 is $\hat{Y}$ = 42.6869 + 0.4260 X_2. Furthermore, in testing the significance of the correlation coefficient by using the t-test obtained $t_{count} = 3.8102$ while $t_{table} = 2.0301$ with a significant level of 5% and $dk = n - 2 = 37 - 2 = 35$, so $t_{count} > t_{table}$e. Thus, the second hypothesis test result is obtained that there is a positive and significant relationship between learning discipline and mathematics learning outcomes.

From the simple correlation analysis, the simple correlation coefficient (r) between learning motivation (X_3) and learning outcomes (Y) is 0.3981. Also, we obtained a simple regression equation Y for X_3 is $\hat{Y}$ = 40.7394 + 0.4578 X_3. Furthermore, in testing the significance of the correlation coefficient by using the t-test obtained $t_{count} = 2.5673$ while $t_{table} = 2.0301$ with a significant level of 5% and $dk = n - 2 = 37 - 2 = 35$, so $t_{count} > t_{table}$. Thus, the third hypothesis test results are obtained that there is a positive and significant relationship between learning motivation with learning outcomes in mathematics.

With multiple correlation analysis and the F-test, $F_{count} = 9.2715$ and $F_{table} = 3.2759$ are obtained, so $F_{count} > F_{table}$ at 5% significance level, with numerator df = 2 and denominator df = 34. This can be explained through a linear relationship $\hat{Y} = -0{,}4973 + 0{,}4742\ X_1 + 0{,}4415\ X_2$. The relative contribution of X_1 is 46.4445%, and X_2 is 53.5555%, and the amount of effective contribution X_1 is 26.3521%, and X_2 is 30.3868%. Thus, the results obtained by the fourth hypothesis test is that there is a positive and significant relationship between independence and discipline of learning with mathematics learning outcomes.

With multiple correlation analysis and F-test, $F_{count} = 7.3986$ and $F_{table} = 3.2759$ are obtained, so $F_{count} > F_{table}$ at 5% significance level, with numerator df = 2 and numerator df = 34. This can be explained through the linear relationship $\hat{Y} = -0{,}2686 + 0{,}4230\ X_1 + 0{,}5005\ X_3$. The relative contribution of X_1 is 57.5719%, and X_3 is 42.4281%, and the effective contribution of X_1 is 23.5068%, and X_3 is 617.3236. Thus, the results of the fifth hypothesis test are that there is a positive and significant relationship between independence and motivation to learn with the results of learning mathematics.

With multiple correlation analysis and the F-test, $F_{count} = 8.8582$ and $F_{table} = 3.2759$ are obtained, so $F_{count} > F_{table}$ at 5% significance level, with numerator df = 2 and numerator df= 34. This can be explained through the linear relationship $\hat{Y} = -0{,}2778 + 0{,}4184\ X_2 + 0{,}5010\ X_3$. The relative contribution of X_2 is 62.4150%, and X_3 is 37.5850%, and the effective contribution of X_2 is 28.7969%, and X_3 is 17.3409%. Thus, the sixth hypothesis test results are that there is a positive and significant relationship between discipline and learning motivation with mathematics learning outcomes.

With multiple correlation analysis and F-test, the coefficient of determination (R^2) of 0.3147 is obtained, obtained $F_{count} = 5.0523$, and $F_{table} = 2.8916$ so that $F_{count} > F_{table}$ at 5% significance level, with numerator df= three and df denominator = 33. This can be explained through a linear relationship $\hat{Y} = 33{,}1471 + 0{,}1338 + 0{,}2949\ X_2 + 0{,}1081\ X_3$. The relative contribution of X_1 is 23,624%, X_2 is 64,488%, and X_3 are 11,888% and the amount of effective contribution X_1 is 7,435%, X_2 is 20,297%, and X_3 is 3,742%. It means that the independent variable ability to learn independence, learning discipline, and learning motivation have a relationship of 31.47% with learning outcomes. There is 68.53% of the relationship explained by other factors not discussed in this study. Thus, the results of the seventh hypothesis test are that there is a positive and significant relationship between independence, discipline, and motivation to learn with the results of learning mathematics.

CONCLUSION

Based on the results of research and discussion, as described in Chapter IV, several research conclusions can be drawn:

1. There is a positive and significant relationship between learning independence with mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year. This is indicated by the t-test obtained $t_{count} = 3{,}3227$ while $t_{table} = 2{,}0301$ with a significant level of 5% and $dk = n - 2 = 37 - 2 = 35$. Simple correlation coefficient (r) of 0.4897 and a linear regression equation that is $\hat{Y}$ = 42.5789 + 0.4315 X_1
2. There is a positive and significant relationship between learning discipline and mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping, Sleman Regency in the even semester of the 2016/2017 school year. This is indicated by the t-test obtained $t_{count} = 3.8102$ while $t_{table} = 2.0301$ with a significant level of 5% and $dk = n - 2 = 37 - 2 = 35$. The simple correlation coefficient (r) of 0.5415 and a linear regression equation that is $\hat{Y} = 42{,}6869 + 0{,}4260\, X_2$.
3. There is a positive and significant relationship between learning motivation and mathematics learning outcomes of VII grade students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year. This is indicated by the t-test obtained $t_{count} = 2.5673$ while $t_{table} = 2.0301$ with a significant level of 5% and $dk = n - 2 = 37 - 2 = 35$. The simple correlation coefficient (r) of 0.3981 and a linear regression equation that is $\hat{Y} = 40{,}7394 + 0{,}4578\, X_3$
4. There is a positive and significant relationship between independence and discipline of learning with mathematics learning outcomes for students of class VII SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year. This is indicated by the F-test obtained $F_{count} = 9.2715$ and $F_{table} = 3.2759$ with a significant level of 5% for numerator = 2 and for denominator = 34. The linear regression equation is $\hat{Y} = -0{,}4973 + 0{,}4742\, X_1 + 0{,}4415\, X_2$.. The relative contribution of X_1 is 46.4445%, and X_2 is 53.5555%, and the amount of effective contribution X_1 is 26.3521%, and X_2 is 30.3868%.
5. There is a positive and significant relationship between independence and learning motivation with mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year. This is indicated by the F-test obtained $F_{count} = 7.3986$ and $F_{table} = 3.2759$ with a significant level of 5% in numerator = 2 and in denominator = 34. The linear regression equation is linear $\hat{Y} = -0{,}2686 + 0{,}4230\, X_1 + 0{,}5005\, X_3$. The relative contribution of X_1 amounted to 57.5719%, and X_3 amounted to 42.44281%, and the number of effective contribution X_1 amounted to 23.5068 X_3 amounted to 17.3236%.
6. There is a positive and significant relationship between discipline and learning motivation with mathematics learning outcomes of Grade VII students of SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year. This is indicated by the F-test obtained $F_{count} = 8.8582$ and $F_{table} = 3.2759$ with a significant level of 5% for numerator = 2 and for denominator = 34. The linear regression equation is $\hat{Y} = -0{,}2778 + 0{,}4184\, X_2 + 0{,}5010\, X_3$. The relative contribution of X_2 is 62.4150%, and X_3 is 37.5850%, and the effective contribution of X_2 is 28.7969%, and X_3 is 17.3409%.
7. There is a positive and significant relationship between independence, discipline, and motivation to learn mathematics learning outcomes of students of class VII SMP Muhammadiyah 2 Gamping Sleman Regency in the even semester of the 2016/2017 school year. This is indicated by the F-test obtained $F_{count} = 5.0523$ and $F_{table} = 2.8916$ with a significant level of 5% for numerator = 3 and for denominator = 33. The determinant correlation coefficient (R^2) is 0.3147 and the linear regression equation is $\hat{Y} = 33{,}1471 + 0{,}1338\, X_1 + 0{,}2949\, X_2 + 0{,}1081\, X_3$. The relative contribution of X_1 is 23,624%, X_2 is 64,488%, and X_3 is 11,888% and the amount of effective contribution X_1 is 7,435%, X_2 is 20,297%, and X_3 is 3,742%.

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