THE RELATIONSHIP BETWEEN LEARNING CYLINES, LEARNING CREATIVITY AND THE ENVIRONMENT OF FAMILY STUDENT WITH MATHEMATICS LEARNING OUTCOMES IN STUDENTS CLASS VII OF SMP

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ABSTRACT

Low student learning outcomes associated with many factors. The relationship between learning cylinders, learning creativity, and family students' environment is possibly related to learning outcomes. This research aims to determine the presence or absence of positive and significant relationships between learning cylinders, learning creativity, and the family student's environment to Mathematics Learning Outcomes in Students Class VII of SMP Negeri 15 Yogyakarta in Even Semester in Academic Year of 2016/2017. The population in this research was the students of VII of SMP Negeri 15 Yogyakarta in the academic year of 2016/2017, consisted of class VII A, VII B, VII C, VII D, VII E, VII F, VII G, VII H, VII I, VII J, totaling 345 students. Samples were taken from VII B as the research sample class and with the random sampling technique. The writer uses a questionnaire method to collect the data of learning cylinders, learning creativity, and the environment of family student and test method to get the resulting learning of math. The research instrument: validity test, different power test, and reliability test. Test requirement analysis includes a test of normality, linearity test, and the test of independence. The writer uses product-moment correlation analysis and multiple linear regression analysis to analyze the data. The results showed that there was a positive and significant relationship between learning cylinders, learning creativity, and the environment of the family student with mathematics learning outcomes in students class VII of SMP Negeri 15 Yogyakarta in Even Semester in Academic Year of 2016/2017. It is showed by $F_{count} > F_{table}$ is $5{,}5522 > 2{,}92$ with $R = 0{,}35708$ and $R = 0{,}3570$ with $\hat{Y} = -60{,}9582 + 0{,}5495X_1 + 0{,}6604X_2 + 0{,}5787X_3$, with relative contribution $X_1 = 41{,}424\%$, relative contribution $X_2 = 37{,}816\%$ and relative contribution $X_3 = 20{,}760\%$, effective contribution $X_1 = 14{,}788\%$, effective contribution $X_2 = 13{,}500\%$ dan effective contribution $X_3 = 7{,}412\%$.

Keywords: Learning Cylines, Learning Creativity, the Environment of Family Student, Mathematics Learning Outcomes.

INTRODUCTION

Education has a vital role in development, especially in improving the quality of human resources. Efforts to improve the quality of education are an integrated part of efforts to improve quality, both aspects of ability and responsibility as citizens. One of the most important and related sciences in human life is mathematics. Mathematics is a universal science that underlies the development of modern technology and can be said to be the basis of all knowledge, has a vital role in various scientific disciplines, and advances human thinking. Therefore, mathematics needs to be taught at every level of education in Indonesia, starting from Elementary Schools to High School levels.

Learning success is caused by several factors but can be classified into two groups, namely internal factors, and external factors. Internal factors are factors contained in students include intelligence, independence, interests, and motivation. In contrast, external factors exist outside of students, inclusive environment, parental attention, interaction, facilities and infrastructure, and others. One internal factor that affects student learning outcomes is a student learning discipline. Learning discipline is very important for every student to have to improve learning outcomes. A student who has good learning discipline will determine the seriousness and self-awareness in learning to adjust their actions to the rules and discipline in learning activities. In addition to learning discipline, learning creativity is one factor in

students that influence learning success. Students who have high learning creativity will determine their thought processes to obtain discoveries so they can solve existing problems. In addition to the internal factors above, there are external factors that will affect student learning outcomes. One of these external factors is the family environment. The family environment is where primary education takes place. All activities that occur in the family are directed and planned so that they can produce quality output.

Student mathematics learning outcomes at Yogyakarta Public Middle School 15 are still low. This is because students assume that mathematics is a tricky subject. This study's problems are: 1) Is there a positive and significant relationship between mathematics learning discipline and mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta even semester 2016/2017 Academic Year? 2) Is there a positive and significant relationship between learning creativity and mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta, even semester 2016/2017 Academic Year? 3) Is there a positive and significant relationship between the family environment and mathematics learning outcomes of VII grade students of SMP Negeri 15 Yogyakarta, even semester 2016/2017 Academic Year? 4) Is there a positive and significant relationship between learning discipline and learning creativity with mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta, even semester 2016/2017 Academic Year? 5) Is there a positive and significant relationship between learning discipline and the family environment with mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta, even semester 2016/2017 Academic Year? 6) Is there a positive and significant relationship between learning creativity and the family environment with the mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta, even semester 2016/2017 Academic Year? 7) Is there a positive and significant relationship between learning discipline, learning creativity, and family environment with mathematics learning results for students of class VII Yogyakarta 15 in the even semester of the 2016/2017 school year?

The purpose of this study was to find out: 1) The presence or absence of a positive and significant relationship between learning discipline and mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta even semester 2016/2017 Academic Year, 2) The presence or absence of a positive and significant relationship between learning creativity and Mathematics learning outcomes of VII grade students of SMP Negeri 15 Yogyakarta even semester 2016/2017 Academic Year, 3) Whether or not there is a positive and significant relationship between the family environment and mathematics learning outcomes of SMP Negeri 15 Yogyakarta students in even semester 2016/2017 Academic Year, 4) The presence or absence of a positive and significant relationship between learning discipline and learning creativity with mathematics learning outcomes for students of class VII SMP Negeri 15 Yogyakarta even semester 2016/2017 Academic Year, 5) Whether or not there is a positive and significant relationship between learning discipline and the family environment with learning outcomes math grade VII students of SMP Negeri 15 Y ogyakarta even semester 2016/2017 Academic Year, 6) Whether or not there is a positive and significant relationship between learning creativity and family environment with the mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta even semester 2016/2017 Academic Year, 7) Whether or not there is a positive relationship and significant between the discipline of learning, learning creativity and the family environment with the results of mathematics learning for eighth grade students of SMP Negeri 15 Yogyakarta even semester 2016/2017 Academic Year.

RESEARCH METHODS

This research is classified as quantitative research. The place of research was carried o

t in Yogyakarta 15 Public Middle School with research subjects in class VII, even semester 2016/2017 academic year. The population in this study was Class VII students of SMP Negeri 15 Yogyakarta in the 2016/2017 school year, with 345 students divided into ten classes. Simultaneously, the sample in this study was a randomly determined sample of class, namely by lottery class. The class taken as a sample class is VII B, with a total of 34 students. The variables used in this study include the independent variables and the dependent variable. The independent variable (independent) consists of

learning discipline (X_1), learning creativity (X_2), and family environment (X_3). In contrast, the dependent variable (dependent) is the result of learning mathematics (Y). In this study, the data collection techniques used were questionnaires and tests. Questionnaire techniques to obtain data on learning discipline, learning creativity, and family environment, while test techniques to obtain data about student mathematics learning outcomes.

The questionnaire test uses the content validity test by the reviewers and the instrument reliability test with the alpha formula. In contrast, the test instrument questions use the content validity test by the reviewers and the product-moment correlation technique, the difference power test, and the reliability test with the KR-20 formula. The analysis prerequisite test is the normality test with the Chi-squared formula, the linearity test of the F-test formula, and the Chi-squared formula independence test. Research hypothesis testing uses a simple correlation test, multiple regression analysis tests, and multiple linear regression test with three independent variables. The research hypothesis test uses a simple correlation test performed to determine the presence or absence of positive and significant relationships between 1) disciplined learning with student mathematics learning outcomes, 2) creativity learning with student mathematics learning outcomes, 3) family environment with student mathematics learning outcomes. Furthermore, the research hypothesis test uses a multiple regression analysis tests conducted to determine the presence or absence of a positive and significant relationship between learning discipline and learning creativity with student mathematics learning outcomes, learning discipline and family environment with student mathematics learning outcomes, learning creativity and family environment with student mathematics learning outcomes. Whereas the multiple linear regression test with three independent variables was carried out to determine the presence or absence of a positive and significant relationship between learning discipline, learning creativity, and the family environment with student mathematics learning outcomes.

RESULT AND DISCUSSION

1. Test Prerequisite Regression Analysis

The summary of normality test results can be seen in Table 1.

Table 1. Summary of Normality Test Results

Variable	χ^2_{count}	χ^2_{table}	df	Information
X_1	0,2140	7,8147	3	Normal
X_2	1,7319	9,4878	4	Normal
X_3	2,3000	7,8147	3	Normal
Y	2,4843	7,8147	3	Normal

The normality test at a significant level of 5% seen $\chi^2_{count} \leq \chi^2_{table}$ means that the distribution of data obtained in each variable is normally distributed.

The summary of independence test results can be seen in Table 2.

Table 2. Summary of Independence Test Results

Variable	$\chi^2_{\textbf{count}}$	χ^2_{Table}	Df	Information
X_1 and X_2	23,214	37,652	25	Independent
X_1 and X_3	25,686	37,652	25	Independent
X_2 and X_3	21,471	37,652	25	Independent

From the normality test at a significant level of 5% (α=0,05) and degree of freedom (dk)= k-1)(b-1) seen $\chi^2_{\text{count}} \leq \chi^2_{\text{table}}$, this means that the distribution of data obtained on each variable is mutually independent.

The summary of linearity test results can be seen in Table 3.

Table 3. Summary of Linearity Test Results

Variable	F_{count}	F_{table}	Information
X_1 and Y	2,2633	2,41	Linear
X_2 and Y	2,1143	2,28	Linear
X_3 and Y	1,2732	2,29	Linear

From the linearity test at a significant level 5% (α=0,05) and the degree of freedom of the numerator $(v_1) = \text{k} - 2$ and denominator $(v_2) = n - k$ seen $F_{count} \leq F_{table}$ (1-α)(k-2,n-k), this means that there is a linear relationship between the independent variable (X) and the dependent variable (Y).

2. Hypothesis Testing

The summary of the results of the first hypothesis test can be seen in table 4

Table 4. Summary of First Hypothesis Test Results

t_{count}	t_{table}	df	Information
3,2040	1,6939	32	H_0 rejected, H_1 accepted

From the first hypothesis test at a significant level 5% and dk = 32 then it can be seen that $t_{count} = 3{,}2040$ and $t_{table} = 1{,}6939$ so that $t_{count} > t_{table}$ which means that there is a positive and significant relationship between learning discipline and mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta in the even semester of the 2016/2017 school year.

The summary of the results of the second hypothesis test can be seen in table 5.

Table 5. Summary of Second Hypothesis Test Results

t_{count}	t_{table}	Df	Information
3,0074	1,6939	32	H_0 rejected, H_1 accepted

From the second hypothesis test at a significant level 5% and dk = 32 then it can be seen that $t_{count} = 3{,}0074$ and $t_{table} = 1{,}6939$ so that $t_{count} > t_{table}$ which means that there is a positive and significant relationship between learning creativity and mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta in the even semester of the 2016/2017 school year.

The summary of the results of the third hypothesis test can be seen in table 6.

Table 6. Summary of Third Hypothesis Test Results

t_{count}	t_{table}	Df	Information
1,9004	1,6939	32	H_0 rejected, H_1 accepted

From the third hypothesis test at a significant level 5% and dk = 32 then it can be seen that $t_{count} = 1{,}9004$ and $t_{table} = 1{,}6939$ so that $t_{count} > t_{table}$ which means that there is a positive and significant relationship between the family environment and mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta in the even semester of the 2016/2017 school year.

The summary of the results of the fourth hypothesis test can be seen in table 7.

Table 7. Summary of Fourth Hypothesis Test Results

t_{count}	t_{table}	Df	Information
6,7911	3,30	$v_1 = 2$ $v_2 = 31$	H_0 rejected, H_1 accepted

From the fourth hypothesis test at a significant level 5%, v_1 numerator = 2 and v_2 denominator = 31 so it can be obtained $F_{count} = 6{,}7911$ dan $F_{table} = 3{,}30$ so that $F_{count} \geq F_{table}$ which means that there is a positive and significant relationship between learning discipline and learning creativity with mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta in the even semester of the 2016/2017 school year.

The summary of the results of the fifth hypothesis test can be seen in table 8.

Table 8. Summary of Fifth Hypothesis Test Results

F_{count}	F_{table}	Df	Information
6,4235	3,30	$v_1 = 2$ $v_2 = 31$	H_0 rejected, H_1 accepted

From the fifth hypothesis test at a significant level of 5%, v_1 numerator = 2 and v_2 denominator = 30 so that it can be obtained $F_{count} = 6{,}5448$ and $F_{table} = 3{,}30$ so that $F_{count} \geq F_{table}$ which means that there is a positive and significant relationship between learning discipline and the family environment with the results of mathematics learning for eighth-grade students of SMP Negeri 15 Yogyakarta even semester 2016/2017 academic year.

The summary of the results of the sixth hypothesis test can be seen in table 9.

Table 9. Summary of Sixth Hypothesis Test Results

F_{count}	F_{table}	Df	Information
6,4235	3,30	$v_1 = 2$ $v_2 = 31$	H_0 rejected, H_1 accepted

From the sixth hypothesis test at a significant level 5%, v_1 numerator = 2 and v_2 denominator = 30 so it can be obtained $F_{count} = 6{,}4235$ and $F_{table} = 3{,}30$ so that $F_{count} \geq F_{table}$ which means that there is a positive and significant relationship between creativity in learning and the family environment with mathematics learning outcomes for students of class VII at SMP Negeri 15 Yogyakarta in the even semester of the 2016/2017 school year.

The summary of the results of the seventh hypothesis test can be seen in table 10.

Table 10. Summary of Seventh Hypothesis Test Results

F_{count}	F_{table}	Df	Information
5,5522	2,92	$v_1 = 3$ $v_2 = 30$	H_0 rejected, H_1 accepted

From the seventh hypothesis test at a significant level 5%, $v_1 = numerator = 3$ and $v_2 = denominator = 30$ so it can be obtained $F_{count} = 5{,}5522$ and $F_{table} = 2{,}92$ so that $F_{count} \geq F_{table}$ which means that there is a positive and significant relationship between learning discipline, learning creativity and the family environment with mathematics learning outcomes for VII Junior High School students 15 Yogyakarta in the 2016/2017 academic semester.

CONCLUSION

Based on the analysis of the experimental data and its discussion, this activity concludes the following:

1. There is a positive and significant relationship between the discipline of learning and the learning outcomes of math students in the seventh grade of Junior High School 15 Yogyakarta in the 2016/2017 academic semester. A t-test indicates this $t_{count} > t_{table}$ or $3{,}2040 > 1{,}6939$. The mean correlation coefficient (r) between study discipline and math learning outcomes was 0.4928. As well as simple regression equations Y on X_1 is $\hat{Y} = 2{,}1600 + 0{,}9025X_1$.
2. There is a positive and significant relationship between the learning creativity and the mathematics learning outcomes of the seventh-grade students of the Junior High School 15 Yogyakarta in the 2016/2017 academic semester. This is indicated by a t-test $t_{count} > t_{table}$ or $3{,}0074 > 1{,}6939$. The simple correlation coefficient (r) between learning creativity and math learning outcomes was 0.4694. In addition, a simple regression equation is obtained Y on X_2 is $\hat{Y} = -8{,}0939 + 1{,}0779X_2$.
3. There is a positive and significant relationship between the family environment and the mathematics results of the Secondary Grade II students of Yogyakarta in the academic year 2016/2017. This is indicated by a t-test $t_{count} > t_{table}$ or $1{,}9004 > 1{,}6939$. The simple correlation coefficient (r)

between the family environment and mathematics learning was 0.3184. In addition, a simple regression equation is obtained Y on X_3 is $\hat{Y} = 11{,}0075 + 0{,}7019X_3$.

4. There is a positive and significant relationship between the learning discipline and the learning creativity with the mathematics learning outcomes of the 7th grade Junior High School State of Yogyakarta in the 2016/2017 academic semester. This is indicated by the F test $F_{count} > F_{table}$ or $6{,}7911 > 3{,}30$. Double correlation coefficient (R) between learning discipline and learning creativity with a mathematical learning outcome of 0.5519 and a determination coefficient (R^2) of 0.3046 with linear equation $\hat{Y} = -24{,}9406 + 0{,}6236X_1 + 0{,}6694X_2$. Great relative contribution X_1 of 55,0836% and X_2 of 44,9164% and effective contributions X_1 of 16,7815% and X_2 of 13,6840%.
5. There is a positive and significant relationship between learning discipline and the family environment with the mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta in the even semester of the 2016/2017 school year. This is indicated by the F test viz $F_{count} > F_{table}$ or $6{,}5448 > 3{,}30$. The correlation coefficient (R) between learning discipline and the family environment with mathematics learning outcomes of 0.5449 and the coefficient of determination (R^2) of 0.2969 with linear line equations $\hat{Y} = -34{,}7894 + 0{,}8235X_1 + 0{,}5878X_3$. Relative contribution X_1 of 74,6460% and X_3 of 25,3540% and effective contributions X_1 of 22,1615% and X_3 of 7,5273%.
6. There is a positive and significant relationship between learning creativity and the family environment with the mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta in the even semester of the 2016/2017 school year. This is indicated by the F test viz $F_{count} > F_{table}$ or $6{,}4235 > 3{,}30$. The correlation coefficient (R) between learning creativity and family environment with mathematics learning outcomes of 0.5413 and the coefficient of determination (R^2) of 0.2930 with linear line equations $\hat{Y} = -52{,}3775 + 1{,}0109X_2 + 0{,}6741X_3$. Relative contribution$X_2$ of 70,536% and X_3 of 29,464% and effective contributionsX_2 of 20,6669% and X_3 of 8,6329%.
7. There is a positive and significant relationship between learning discipline, learning creativity, and family environment with mathematics learning outcomes of Grade VII students of SMP Negeri 15 Yogyakarta in the even semester of the 2016/2017 school year. This is indicated by the F test viz $F_{count} > F_{table}$ or $5{,}5522 > 2{,}92$. The correlation coefficient (R) between learning discipline, learning creativity and family environment with mathematics learning outcomes of 0.5975 and the coefficient of determination (R^2) of 0.3570 with linear line equations $\hat{Y} = -60{,}9582 + 0{,}5495X_1 + 0{,}6604X_2 + 0{,}5787X_3$. Relative contribution X_1 of 41,424%, X_2 of 37,816% and X_3 of 20,760% and effective contributions X_1 of 14,789%, X_2 of 13,500% and X_3 of 7,412%.

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