THE CORRELATION BETWEEN LEARNING ENVIRONMENT IN SCHOOL AND THE INDEPENDENCE OF LEARNING WITH MATHEMATICS LEARNING OUTCOMES

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ABSTRACT

Many factors cause poor student learning outcomes. The learning environment in school and the independence of learning are some factors that correlate with learning outcomes. This study aims to determine a positive and significant correlation between the learning environment at school and the independence of learning with the results of learning mathematics for eight grade students of State Junior High School (SMP Negeri) 11 Yogyakarta year of 2017/2018. This study's population was all of SMP Negeri 11 Yogyakarta's eighth-grade students in the academic year 2017/2018. The number of students was 130 students. The experimental class and the sample class were taken by random sampling technique to each class. It was obtained of VIII C as the experimental class and VIII B as the sample class. The data collecting technique was done by test and questionnaire method. There are several types of instruments used in this research. There are validity tests, different power tests, and reliability tests. Analysis prerequisite tests were normality test, independent test, and linearity test. Data analysis for hypothesis tests were using correlation analysis and linear regression analysis. The first results showed a positive and significant correlation between the learning environment in school with the learning mathematics results by $t_{count} = 8,2836$ and $t_{table} = 2,0423$, so obtained $t_{count} > t_{table}$. The second results showed a positive and significant correlation between the independence of learning with the results of learning mathematics by $t_{count} = 7,2928$ and $t_{table} = 2,0423$, so obtained $t_{count} > t_{table}$. The third results showed a positive and significant correlation between the learning environment in school and the independence of learning with learning mathematics by $F_{count} = 52,1944$ and $F_{table} = 3,3277$, so obtained $F_{count} > F_{table}$. Double correlation coefficient (R) amount 0,8861 and coefficient of determination (R^2) amount 0,7852 with the linear regression equation ie $\hat{Y} = 0,3684 + 0,5060X_1 + 0,4305X_2$. Relative contribution of X_1 is equal to 57,1280%, and X_2 amount 42,8720% and relative contribution of X_1 is equal to 44,8545% and X_2 is equal to 33,6613%.

Keywords: the learning environment in school, the independence of learning, the results of learning mathematics.

INTRODUCTION

Education to form high quality and dedicated human resources require a supporter, namely, education quality. The development of education in Indonesia has been good. The Ministry of National Education has established various policies by improving all education components, both curriculum, improving teachers' quality, and facilities and infrastructure that support teaching and learning activities to improve education quality. However, improvements must always be made in the education process to get a better quality of education. The success of the learning process is the main thing coveted in implementing education in schools. In the learning process in the classroom, the main components are the teacher and students. Many factors influence schools' learning process, leading to boredom, so students are not motivated to learn.

The learning process can be influenced by two critical factors, namely, factors from within students (internal) and outside students (external). Students' factors include intelligence, interest, talent, discipline, motivation, independence, and others. At the same time, outside students' factors include facilities and infrastructure, learning facilities, family environment, parents' attention, school environment, student associations, etc.

One internal factor that affects student learning outcomes in this study is learning independence. Learning independence is the students' attitude (behavior) to not depend on others in the learning process. According to Seifert and Hoffnung in Desmita (2009: 185) defines autonomy or independence as the ability to govern and regulate one's thoughts, feelings, and actions freely and responsibly while overcoming feelings of shame and doubt. Knowles in Nurhayati, Eti (2011: 140) mentions the independence of learning with self-directed learning, which is a process where individuals take the initiative with or help others in diagnosing learning needs, formulating learning goals, identifying learning resources, selecting and implementing learning strategies and evaluating learning outcomes. Learning independence is an initiative that arises from within students to learn without relying on others, can control themselves and be responsible for all the decisions they make themselves.

In addition to learning independence, there are also external factors that affect student learning outcomes. One of these external factors is the learning environment at school. The learning environment at school is what influences student learning processes. According to Sartain, quoted by Purwanto, Ngalim (2014: 28), Environment includes all conditions in this world which in specific ways affect our behavior, growth, development, or life processes except for genes and even genes. Genes are seen as preparing the Environment for other genes. According to Hamalik, Oemar (2006: 195-196), the environment as a basis for teaching is a conditional factor that influences individual behavior and is an important learning factor. According to Dalyono, Mohammad (2012: 59), the quality of the teacher, the teaching methods, the suitability of the curriculum with the ability of children, the state of facilities/equipment in schools, and so on, all also influence the success of children's learning. According to Slameto (2015: 64-69) the school environment is one of the external factors that affect children's learning activities. The learning environment at school is a place of student learning that influences student behavior, student achievement, student development, which includes the state of the school, teacher quality and teaching methods, student relations with teachers, student relations with students, the state of the building, the school community, order, school facilities, and school infrastructure.

The problems in this study are: 1) Is there a positive and significant relationship between the learning environment at school and the mathematics learning outcomes of students of class VIII of SMP Negeri 11 Yogyakarta in the odd semester of the Academic Year 2017/2018? 2) Is there a positive and significant relationship between learning independence and mathematics learning outcomes of students of class VIII of SMP Negeri 11 Yogyakarta in the odd semester of the Academic Year 2017/2018? 3) Is there a positive and significant relationship between learning environment at school and learning independence with mathematics learning outcomes of students of class VIII of SMP Negeri 11 Yogyakarta in the odd semester of the Academic Year 2017/2018?

The purpose of this study is to find out: 1) Whether there is a positive and significant relationship between the learning environment at school and the mathematics learning outcomes of Grade VIII students of SMP Negeri 11 Yogyakarta odd semester of Academic Year 2017/2018, 2) Whether there is a positive and significant relationship between learning independence with Mathematics learning outcomes for eighth-grade students of SMP Negeri 11 Yogyakarta in the odd semester of Academic Year 2017/2018, 3) Whether or not there is a positive and significant relationship between learning environment at school and learning independence with mathematics learning outcomes of VIII grade students of SMP 11 Yogyakarta in the odd semester of 2017 Academic Year / 2018.

METHODS

This research is classified as quantitative research. The research subjects were carried out in SMP Negeri 11 Yogyakarta with research subjects in class VIII odd semester of 2017/2018. The population in this study were all eighth-grade students of SMP Negeri 11 Yogyakarta in the odd semester of the academic year 2017/2018, which continued from class VII of SMP Negeri 11 Yogyakarta in the even semester of the 2016/2017 school year consisting of 4 classes, namely classes

VIIIA, VIIIB, VIIIC, VIIID. Simultaneously, the sample in this study uses random sampling of classes, taking one class at random. Here, students of class VIIIB were obtained with a total of 32 students as sample classes. The variables used in this study include the independent variables and the dependent variable. The independent variable (independent) consists of the learning environment at school (X_1) and learning independence (X_2). 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. The questionnaire technique is used for collecting data on the learning environment in schools and learning independence. In contrast, the test technique is used for collecting data on student mathematics learning outcomes. The questionnaire test uses the content validity test by the reviewers and the instrument reliability test using the Cronbach alpha formula. In contrast, the test instrument questions use the reviewers' content validity test and the test reliability test questions with the Kuder-Richardson formula (KR-20).

The analysis prerequisite test is the normality test with the Chi-squared formula, the F-test formula's linearity test, and the Chi-squared formula independence test. The research hypothesis test uses a simple correlation test and multiple regression analysis tests. Research hypothesis testing using a simple correlation test is performed to determine the presence or absence of positive and significant relationships between 1) the learning environment in schools with student mathematics learning outcomes, 2) learning independence with student mathematics learning outcomes. Furthermore, the research hypothesis test uses multiple regression analysis tests to determine the presence or absence of a positive and significant relationship between the learning environment and learning independence with student mathematics learning outcomes.

RESULTS AND DISCUSSION

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	Info.
X_1	2,8313	9,4877	5	Normal
X_2	7,4795	9,4877	5	Normal
Y	2,1210	7,8147	4	Normal

From the normality test at a significant level of 5%, it is seen $\chi^2_{count} \leq \chi^2_{table}$. This means that the distribution of data obtained on each variable is normally distributed. The summary of independence test results can be seen in Table 2.

Table 2. Summary of Independent Test Results

Variable	χ^2_{count}	χ^2_{table}	df	Info.
X_1 dan X_2	35,5447	37,6525	25	Independent

From the independent test at a significant level of 5% ($\alpha = 0.05$) and degrees of freedom (df) $= (k - 1)(b - 1)$ seen $\chi^2_{count} \leq \chi^2_{table}$, this means that the data distribution obtained is mutual 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}	v_1	v_2	Info.
X_1 and Y	1,4303	2,5684	18	12	Linear
X_2 and Y	0,6842	2,6581	19	11	Linear

From the linearity test at a significant level of 5% ($\alpha = 0.05$) and the degree of freedom of the numerator $(v_1) = k - 2$ and the denominator $(v_2) = n - k$ can be seen $F_{count} \leq F_{table}(1 - \alpha)(k - 2, nk)$, this

means that there is a linear relationship between the independent variable (X) and the dependent variable (Y).

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	Info
8,2836	2,0423	30	$H_{0.1}$ rejected $H_{1.1}$ accepted

From the first hypothesis test at a significant level of 5% and dk = 30, it can be seen that $t_{count} = 8,2836$ and $t_{table} = 2,0423$ so $t_{count} > t_{table}$ which means there is a positive and significant relationship between the learning environment at school with student mathematics learning outcomes class VIII SMP Negeri 11Yogyakarta odd semester 2017/2018 school year.

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

Table 5. Summary of the Second Hypothesis Test Results

t_{count}	t_{table}	df	Info
7,2928	2,0423	s30	$H_{0.1}$ rejected $H_{1.1}$ accepted

From the second hypothesis test at a significant level of 5% and dk = 30, it can be seen that $t_{count} = 7,2928$ and $t_{table} = 2,0423$ so $t_{count} > t_{table}$ which means there is a positive and significant relationship between learning independence and mathematics learning outcomes of VIII grade students SMP Negeri 11 Yogyakarta odd semester of 2017/2018 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	Info
52,1944	3,3277	$v_1 = 2$ $v_2 = 29$	$H_{0.2}$ rejected $H_{1.2}$ accepted

From the fourth hypothesis test at a significant level of 5%, v_1 numerator = 2 and v_2 denominator = 29 so that it can be obtained $F_{count} = 52,1944$ and $F_{table} = 3,3277$ so $F_{count} \geq F_{table}$ which means there is a positive and significant relationship between learning environments in schools and learning independence with the results of mathematics learning for eighth-grade students of SMP Negeri 11 Yogyakarta in the odd semester of the academic year 2017/2018.

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 school's learning environment and the mathematics learning outcomes of VIII grade students of SMP Negeri 11 Yogyakarta in the odd semester of 2017/2018. This is indicated by the t-test obtained $t_{count} = 8.2836$ while $t_{table} = 2.0423$ with a significance level of 5% and df $= n - 2 = 32 - 2 = 30$. The linear regression equation is $\hat{Y} = 12,2190 + 0,7849X_1$. Because $t_{count} > t_{table}$ shows, the better the school's learning environment, the higher the students' mathematics learning outcomes.

2. There is a positive and significant relationship between learning independence with mathematics learning outcomes for students of class VIII of SMP Negeri 11 Yogyakarta in the odd semester of 2017/2018. This is indicated by the t-test obtained $t_{count} = 7,2928$ while $t_{table} = 2,0423$ with a significant level of 5% and df $= n - 2 = 32 - 2 = 30$. The linear regression equation is $\hat{Y} = 11,6433 + 0,8177X_2$. Because $t_{count} > t_{table}$ shows the higher the learning independence, the higher the students' mathematics learning outcomes.

3. There is a positive and significant relationship between learning environment at school and learning independence with mathematics learning outcomes of students of class VIII of SMP Negeri 11

Yogyakarta in the odd semester of the academic year 2017/2018. This is indicated by the F-test obtained $F_{count} = 52{,}1944$ while $F_{table} = 3{,}3277$ with a significant level of 5% for numerator $= 2$ and for denominator $= 30$. The linear regression equation is $\hat{Y} = 0{,}3684 + 0{,}5060X_1 + 0{,}4305X_2$. Because $F_{count} > F_{table}$ shows, the better the learning environment in school and learning independence, the higher the student mathematics learning outcomes. The relative contribution of X_1 is 57.1280%, and X_2 is 42.8720%, and the effective contribution of X_1 is 44.8545%, and X_2 is 33.6613%.

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