

## THE RELATIONSHIP BETWEEN PEERS INTERACTION, TIME MANAGEMENT, AND INTEREST LEARNING WITH MATHEMATICS LEARNING OUTCOMES IN STUDENTS CLASS VIII

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### ABSTRACT

The low of students' mathematics learning outcome is associated with many factors. Not all peers support students' achievement. The lack of time management and the lack of studying interest are several factors that were assumed to have a relation with mathematics learning. Therefore, this study aimed to determine whether there is a positive and significant relationship between peers interaction, time management, and interest learning with mathematics learning outcomes in students class VIII of State Junior High School (SMP Negeri) 2 Banjarnegara in even semester in the academic year of 2016/2017. This research population was the students of VIII grade in SMP Negeri 2 Banjarnegara in 2016/2017, consisting of class VIIB, VIIE, VIIF, VIIG, VIIEH, totaling 165 students. Samples were taken from VIIF as the research sample class and with the random sampling technique. The writer uses the questionnaire method to collect peer interaction, time management, and interest learning and test methods to get the resulting math results. The research instrument: validity test, different power test, and reliability test. Test requirement analysis includes a test of normality, a test of linearity, and independence. The writer uses product-moment correlation analysis and multiple linear regression analysis to analyze the data. The results showed a positive and significant relationship between peer interaction, time management, and interest learning with mathematics learning outcomes in students class VIII in even Semester of SMP Negeri 2 Banjarnegara in the academic year of 2016/2017. It is showed by  $F_{count} \geq F_{table}$  is  $2,9232 \geq 2,92227$  with  $R = 0,4756$  and  $R^2 = 0,2262$  with  $\hat{Y} = -28,3268 + 0,2276 X_1 + 0,2806 X_2 + 0,3259 X_3$ , with  $RC X_1 = 30,5615\%$ ,  $RC X_2 = 37,2199\%$  and  $RC X_3 = 32,2185\%$ ,  $EC X_1 = 6,9131\%$ ,  $EC X_2 = 8,4192\%$  and  $EC X_3 = 7,2879\%$ .

**Keywords:** Peers Interaction, Time Management, Interest Learning, Mathematics Learning Outcomes.

### INTRODUCTION

Education is a process to help humans develop their potential to face every change that occurs. Quality education will produce quality human resources, superior, and able to compete. Education aims to foster human potential to become mature, civilized, and normal human beings. Education is expected to form competent individuals in their fields to be in line with education and technology development. Mathematics is one of the keys to mastering other sciences; it is. Suherman, Erman, et al. (2003: 25) stated that mathematics is a source of other sciences. In other words, success in learning various sciences is marked by success in studying mathematics. As an illustration, when conducting research, especially quantitative research, it cannot be denied that mathematics is needed, namely mastering statistics. Without the correct use of statistical science, research results can be said to be less valid. Therefore, mathematics as a source of various other sciences, good mathematical mastery is a determinant of student learning success. Based on the above opinion, it can be concluded that the learning outcome is the level of knowledge achieved by a person against the material received when following and doing assignments and learning activities.

Based on the results of interviews with eighth-grade students of SMP Negeri 2 Banjarnegara on December 16, 2015, they said that mathematics was a complicated subject, so mathematics became a subject that students disliked. Based on information from one of the school's mathematics teachers, Wiwit Herawati, S.Pd, said that some students had very little interest in learning mathematics. Another cause is the peer factor. Not all students' peers behave positively in their relationships at school and

support student learning success. Students provide information that they prefer to discuss things other than lessons, such as planning play events when they gather with their friends. There are still noisy peers in class and do not pay attention to lessons during the teaching and learning process. The learning process becomes disrupted, and they also play truant when there are peers who skipped school.

He also said that students were less able to manage their study time. Free time is not used maximally, whereas many results can be achieved if every student can use it. A lot and a little time do not affect, but managing time is the most important. Also, mathematics learning is less attractive, so most students consider mathematics to be a difficult subject. The lack of student interest in learning mathematics makes student learning outcomes less satisfying.

Based on observations, mathematics learning outcomes for eighth-grade students of SMP Negeri 2 Banjarnegara are still in the low category. This can be seen from the average mathematics scores in the Middle Semester Examination class VIII, even semester of SMP Negeri 2 Banjarnegara 2015/2016 academic year shown in Table 1.

**Table 1.** Mathematics Middle School Semester Test Grade VIII SMP Negeri 2 Banjarnegara Semester Even Academic Year 2015/2016

No	Class	Number of students	MCC	Complete (%)	No Complete (%)
1.	A	34	78	38,24	61,67
2.	B	33	78	42,42	57,58
3.	C	32	78	0	100
4.	D	32	78	0	100
5.	E	34	78	0	100
6.	F	31	78	0	100
7.	G	30	78	6,67	93,33
8.	H	32	78	3,13	96,87

(Data Source: SMP Negeri 2 Banjarnegara)

The many factors that influence student learning outcomes, especially in mathematics, are peer, time management, and interest in learning. Therefore, it is necessary to research The Relationship Between Peers, Time Management, and Learning Interest with Mathematics Learning Outcomes in Class VIII Students of SMP Negeri 2 Banjarnegara Academic Year 2016/2017.

Based on the background description of the problem, the following research problems can be formulated: 1) Is there a positive and significant relationship between peers and mathematics learning outcomes of VIII grade students of SMP Negeri 2 Banjarnegara even semester of the 2016/2017 school year? 2) Is there a positive and significant relationship between time management and mathematics learning outcomes of VIII grade students of SMP Negeri 2 Banjarnegara in the even semester of the 2016/2017 school year? 3) Is there a positive and significant relationship between interest in learning with mathematics learning outcomes in class VIII SMP Negeri 2 Banjarnegara even semester 2016/2017 school year? 4) Is there a positive and significant relationship between peers and time management with mathematics learning outcomes of students of class VIII SMP Negeri 2 Banjarnegara even semester 2016/2017 school year? 5) Is there a positive and significant relationship between peers and interest in learning with mathematics learning outcomes of students of class VIII SMP Negeri 2 Banjarnegara even semester 2016/2017 school year? 6) Is there a positive and significant relationship between time management and interest in learning with mathematics learning outcomes of eighth grade students of SMP Negeri 2 Banjarnegara even semester 2016/2017 school year? 7) Is there a positive and significant relationship between peers, time management, and interest in learning with mathematics learning outcomes of eighth grade students of SMP Negeri 2 Banjarnegara even semester 2016/2017 school year?

Based on the formulation of the problem, the research objectives to be achieved are as follows: 1) To find out whether or not there is a positive and significant relationship between peers and mathematics learning outcomes of VIII grade students of SMP Negeri 2 Banjarnegara even semester 2016/2017 school year. 2) To determine whether there is a positive and significant relationship between

time management at school and mathematics learning outcomes of eighth grade students of SMP Negeri 2 Banjarnegara even semester 2016/2017 school year. 3) To determine whether there is a positive and significant relationship between interest in learning at school with mathematics learning outcomes in class VIII SMP Negeri 2 Banjarnegara even semester 2016/2017 school year. 4) To determine whether there is a positive and significant relationship between peers and time management with mathematics learning outcomes of eighth grade students of SMP Negeri 2 Banjarnegara even semester 2016/2017 school year. 5) To determine whether there is a positive and significant relationship between peers and interest in learning with mathematics learning outcomes of eighth-grade students of SMP Negeri 2 Banjarnegara even semester 2016/2017 academic year. 6) To determine whether there is a positive and significant relationship between time management and interest in learning at school with mathematics learning outcomes for students of class VIII SMP Negeri 2 Banjarnegara even semester 2016/2017 school year. 7) To determine whether there is a positive and significant relationship between peers, time management, and interest in studying at school with mathematics learning outcomes for eighth grade students of SMP Negeri 2 Banjarnegara even semester 2016/2017 academic year.

## METHODS

This research is classified as quantitative research. This research was conducted at SMP Negeri 2 Banjarnegara. The implementation time is in the even semester of the 2016/2017 school year. This study's population were all students of class VIII SMP Negeri 2 Banjarnegara, amounting to 165 students. According to Sugiyono (2011: 81), the sample is part of the population's number and characteristics. In this study, the sample was taken randomly using a random sampling of the class. The sample class was taken as class VIIIF, and the test class was class VIIIE.

The variables used in this study include the independent variable and the dependent variable. The independent variable (independent) consists of peers ( $X_1$ ), time management ( $X_2$ ), and interest in learning ( $X_3$ ). 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. The questionnaire technique is for obtaining peer data, time management, and learning interest, while the test technique is for obtaining data about student mathematics learning outcomes.

The questionnaire test uses the reviewers' content validity test and the instrument reliability test with the alpha formula. In contrast, the test instrument questions use the content validity test by the reviewers and product-moment correlation techniques, different power tests, and reliability tests with the KR-20 formula (Arikunto, Suharsimi, 2012: 115). After the data is collected, an analysis prerequisite test is carried out with the normality test, linearity test, and independence test. In this study, the hypothesis test used was regression analysis.

## RESULTS AND DISCUSSION

A normality test is done to test the distribution of data obtained by each variable with a normal distribution. A summary of the results of the normality tests of the four variables can be seen in Table 2.

**Table 2.** Summary of Normality Test Results

Variable	$\chi^2_{\text{count}}$	$\chi^2_{\text{table}}$	df	Info.
Peers ( $X_1$ )	3,999	5,9915	2	Normal
Time management ( $X_2$ )	5,865	7,815	3	Normal
Interest to learn ( $X_3$ )	0,083	7,815	3	Normal
Mathematical Learning Outcomes ( $Y$ )	2,559	9,448	4	Normal

The linearity test is used to determine whether the independent variable and the dependent variable have a linear relationship or not. A summary of the results of the linearity test can be seen in Table 3.

**Table 3.** Summary of Linearity Test Results

Variable	F <sub>count</sub>	F <sub>table</sub>	Info.
X <sub>1</sub> to Y	1,277	2,636	Linear
X <sub>2</sub> to Y	0,642	2,636	Linear
X <sub>3</sub> to Y	1,029	2,471	Linear

The independence test is used to find out whether or not there is a relationship between independent variables. A summary of the results of the independence test can be seen in Table 4.

**Table 4.** Independence Test Results Summary

Variable	$\chi^2_{\text{count}}$	$\chi^2_{\text{table}}$	df	Info.
X <sub>1</sub> and X <sub>2</sub>	37,651	37,652	25	Independent
X <sub>1</sub> and X <sub>3</sub>	31,347	37,625	25	Independent
X <sub>2</sub> and X <sub>3</sub>	25,962	37,625	25	Independent

Based on the analysis of research data, the following research conclusions can be drawn:

1. A simple correlation analysis obtained a simple correlation coefficient ( $r$ ) between peers with mathematics learning outcomes of 0.349. The values of the  $r$  product moment can be seen in appendix 61. Furthermore, in testing the correlation coefficient's significance using the t-test, obtained  $t_{\text{count}} = 2.1086$  while  $t_{\text{table}} = 1.6939$  at a significant level of 5% and  $v = n - 2 = 34 - 2 = 3$ . The distribution t-table can be seen in appendix 58. The rejection area used is  $t_{\text{count}} > t_{\text{table}}$ . Then obtained  $2.1086 > 1.6939$ , so  $H_{0,1}$  was rejected, and  $H_{1,1}$  was accepted, so there was a positive and significant relationship between peers and mathematics learning outcomes of Grade VII students of SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester of the 2016 school year / 2017. A simple regression equation of Y for X<sub>1</sub> is also obtained as  $\hat{Y} = 9.0544 - 1.0643 X_1$
2. A simple correlation analysis obtained a simple correlation coefficient ( $r$ ) between time management and mathematics learning outcomes of 0.3252. Furthermore, in testing the significance of the correlation coefficient by using the t-test obtained  $t_{\text{count}} = 1.9455$  while  $t_{\text{table}} = 1.6939$  at a significant level of 5% and  $= n - 2 = 34 - 2 = 32$ . The rejection area used is  $t_{\text{count}} > t_{\text{table}}$ . Then obtained  $1,9455 > 1,6939$ , so  $H_{0,2}$  was rejected, and  $H_{1,2}$  was accepted, so there is a positive and significant relationship between time management and mathematics learning outcomes of class VIII SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester 2016/2017 school year Besides that, also obtained a simple regression equation Y over X<sub>2</sub> is  $\hat{Y} = 13.1812 + 0.3526 X_2$ .
3. A simple correlation analysis was obtained by the simple correlation coefficient ( $r$ ) between learning interest and mathematics learning outcomes of 0.314. Furthermore, in testing the significance of the correlation coefficient by using the t-test obtained  $t_{\text{count}} = 1.8737$  while  $t_{\text{table}} = 1.6939$  at a significant level of 5% and  $= n - 2 = 34 - 2 = 32$ . The rejection area used is  $t_{\text{count}} > t_{\text{table}}$ . Then, it was obtained  $1.8737 > 1.6939$ .  $H_{0,3}$  rejected and  $H_{1,3}$  accepted, so there is a positive and significant relationship between learning interest with mathematics learning outcomes of VIII grade students of SMP Negeri 2 Banjarnegara Banjarnegara Regency 2016/2017 teaching. Also, obtained a simple regression equation of Y over X<sub>3</sub> is  $\hat{Y} = 5.6532 + 0.4421 X_3$ .
4. The double analysis obtained the value of the correlation coefficient (R) double between peers and time management with mathematics learning outcomes of 0.4232. Furthermore, in testing the significance of the correlation coefficient, the F-test obtained  $F_{\text{count}} = 3,3815$  while  $F_{\text{table}} = 3,31$  at a significant level of 5% and  $v_1 = 2$  and  $v_2 = 31$  to obtain  $F_{\text{count}} > F_{\text{table}}$ . Thus  $H_{0,4}$  is rejected, and  $H_{1,4}$  was accepted, so there is a positive and significant relationship between peers and time management with mathematics learning outcomes of eighth grade students of SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester 2016/2017 academic year. In addition also

- obtained a double linear regression equation over  $X_1$  and  $X_2$  are  $Y = (-7.55618424) + 0.2692559325 X_1 + 0.2692559325 X_2$
5. The double analysis obtained the value of the multiple correlation coefficient (R) between peers and learning interest with mathematics learning outcomes 0.4239. Furthermore, in testing the significance of the correlation coefficient using the F-test obtained  $F_{\text{count}} = 3.3946$  while  $F_{\text{table}} = 3,31$  at a significant level of 5% and  $v_1 = 2$  and  $v_2 = 31$  to obtain  $F_{\text{count}} > F_{\text{table}}$ . Thus  $H_{0,5}$  is rejected, and  $H_{1,5}$  was accepted, so there is a positive and significant relationship between peers and interest in learning with mathematics learning outcomes of eighth-grade students of SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester 2016/2017 academic year. In addition, also obtained a double linear regression equation for  $X_1$  and  $X_3$  is  $\hat{Y} = (-10.7976) + 0.3567 X_1 + 0.2755 X_3$ .
  6. The double analysis obtained the value of the multiple correlation coefficient (R) between time management and interest in learning with mathematics learning outcomes of 0.4408. Furthermore, in testing the significance of the correlation coefficient by using the F-test obtained  $F_{\text{count}} = 3.7384$ . In contrast,  $F_{\text{table}} = 3,31$  at a significant level of 5% and  $v_1 = 2$  and  $v_2 = 31$  a  $F_{\text{count}} > F_{\text{table}}$  is obtained. Thus  $H_{0,6}$  is rejected, and  $H_{1,6}$  was accepted, so there is a positive and significant relationship between time management and interest in learning with mathematics learning outcomes of eighth grade students of SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester 2016/2017 academic year. In addition also obtained a double linear regression equation for  $X_2$  and  $X_3$  is  $\hat{Y} = (-21,4375) + 0,3354X_2 + 0,4189 X_3$ .
  7. A double analysis obtained the value of the correlation coefficient (R) between peers, time management, and interest in learning with mathematics learning outcomes of 0.4756. Furthermore, in testing the significance of the correlation coefficient by using the F-test obtained  $F_{\text{calculate}} = 2.9233$  while  $F_{\text{table}} = 2.92$  at a significant level of 5% and  $v_2 = n - m - 1 = 34 - 3 - 1 = 30$ , so that obtained  $F_{\text{count}} > F_{\text{table}}$ , thus  $H_{0,7}$  is rejected and  $H_{1,7}$  is accepted, so there is a positive and significant relationship between peers, time management and interest in learning with mathematics learning outcomes of VIII grade students of SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester 2016/2017 school year Also, also obtained a double linear regression equation for  $X_1$ ,  $X_2$ , and  $X_3$  is  $\hat{Y} = (-28,3267) + 0,2276 X_1 + 0,2806 X_2 + 0,3258 X_3$ .

## CONCLUSION

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

1. There is a positive and significant relationship between peers and mathematics learning outcomes of VIII grade students of SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester 2016/2017 academic year. This is indicated by the t-test that is  $t_{\text{count}} > t_{\text{table}}$  or  $2.1086 > 1.6939$ . The simple correlation coefficient (r) between peers and mathematics learning outcomes of 0.3554. And the simple regression equation Y for  $X_1$  is  $\hat{Y} = 9.0544 - 1.0643 X_1$
2. There is a positive and significant relationship between time management and mathematics learning outcomes of eighth grade students of SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester 2016/2017 academic year. The t-test, namely indicate this  $t_{\text{count}} > t_{\text{table}}$  or  $1.9455 > 1.6939$ . The Simple correlation coefficient (r) between time management and mathematics learning outcomes of 0.3252. A simple regression equation for Y over  $X_2$  is also obtained.  $\hat{Y} = 13.1812 + 0.3526 X_2$ .
3. There is a positive and significant relationship between interest in learning with mathematics learning outcomes for class VIII SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester 2016/2017 academic year. This is indicated by the t-test, which is  $t_{\text{count}} > t_{\text{table}}$  or  $1.8737 > 1.6939$ . The simple correlation coefficient (r) between learning interest and mathematics learning

- outcomes of 0.3144. We also obtained a simple regression equation for Y over  $X_3$  is  $\hat{Y} = 5.6532 + 0.4421 X_3$ .
4. There is a positive and significant relationship between peers and time management with the mathematics learning outcomes of students of class VIII SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester 2016/2017 academic year. This is indicated by the F test, which is  $F_{\text{count}} > F_{\text{table}}$  or  $3.3815 > 3.31$ . The multiple correlation coefficient (R) between peers and time management with mathematics learning outcomes is 0.4232 and the coefficient of determination ( $R^2$ ) is 0.1791 with a linear line equation  $\hat{Y} = (-7,5562) + 0,2693X_1 + 0,2693 X_2$ . The relative contribution of  $X_1$  was 54.8962%, and  $X_2$  was 45.1038%, and the effective contribution of  $X_1$  was 9.8314%, and  $X_2$  was 8.0777%.
  5. There is a positive and significant relationship between peers and interest in learning with mathematics learning outcomes of eighth-grade students of SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester 2016/2017 academic year. This is indicated by the F test, which is  $F_{\text{count}} > F_{\text{table}}$  or  $3.3945 > 3.31$ . The correlation coefficient (R) between peers and learning interest in mathematics learning outcomes is 0.4239. The coefficient of determination ( $R^2$ ) is 0.1797 with a linear line equation  $\hat{Y} = (-10.7976) + 0.3567 X_1 + 0.2755 X_3$ . The relative contribution of  $X_1$  is 65.7010%, and  $X_3$  is 34.2989%, and the effective contribution of  $X_1$  is 11.8037%, and  $X_3$  is 6.1621%.
  6. There is a positive and significant relationship between time management and interest in learning with mathematics learning outcomes of eighth grade students of SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester 2016/2017 academic year. This is indicated by the F test, which is  $F_{\text{count}} > F_{\text{table}}$  or  $3.7384 > 3.31$ . The correlation coefficient (R) between time management and learning interest with mathematics learning outcomes is 0.4408 and the coefficient of determination ( $R^2$ ) is 0.1943 with a linear line equation  $\hat{Y} = (-21,4375) + 0,3354X_2 + 0,4189 X_3$ . The relative contribution of  $X_2$  is 51.7809% and  $X_3$  is 48.2190%, and the effective contribution of  $X_2$  is 10.0621%, and  $X_3$  is 9.3699%.
  7. There is a positive and significant relationship between peers, time management, and interest in learning with mathematics learning outcomes of eighth grade students of SMP Negeri 2 Banjarnegara Banjarnegara Regency even semester of the 2016/2017 school year. This is indicated by the F test, which is  $F_{\text{count}} > F_{\text{table}}$  or  $2.9233 \geq 2.92$ . The correlation coefficient (R) between peers, time management and learning interest with mathematics learning outcomes is 0.4756 and the coefficient of determination ( $R^2$ ) is 0.2262 with a linear line equation  $\hat{Y} = (-28,3267) + 0,2276 X_1 + 0,2806 X_2 + 0,3258 X_3$ . The relative contribution of  $X_1$  was 30.5615%,  $X_2$  was 37.2199%, and  $X_3$  was 32.2185%, and the effective contribution was  $X_1$  6.9131%,  $X_2$  was 8.4192%, and  $X_3$  is 7.2879%.

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