THE EFFECTIVENESS OF THE USE OF COOPERATIVE LEARNING MODEL COURSE REVIEW HOREY TYPE TO THE MATHEMATICS LEARNING OUTCOMES OF GRADE VIII

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ABSTRACT

The low student learning outcomes are caused by several factors, one of which the learning model used in the less varied and is still centered on the teacher. This study aims to determine the effectiveness of using a cooperative learning model course review horey type to the mathematics learning result of grade VIII. The population in this study were all students of class VIII SMP Negeri 1 Pundong regency Academic Year 2016/2017, which consists of 8 classes. The sampling technique using a random sampling technique to the class and selected class VIII C as an experimental class and class VIII F as a control class. The data was collected using the test method. Tests using Instrument validity, reliability, and distinguishing power. Data analysis techniques used for prerequisite analysis tests include a normality test and a homogeneity test. The hypothesis to test in this study used a two-party t-test and a one-party t-test with a significant level of 5%. Based on mathematics learning result obtained that 1) $t_{count} = 2,36648$ and $t_{table} = t_{\frac{1}{2}(0,05)} = 2,01174$ which means $t_{count} > t_{table}$. This means that there is a difference in learning outcomes between the learning of mathematics using cooperative learning model type course review horey with mathematics learning using a direct learning model on the students of VII SMP Negeri 1 Pundong in even semester regency Academic Year 2016/2017. 2) $t_{count} = 4,42698$ and $t_{table} = t_{(0,05)} = 1,67792$ which means $t_{count} > t_{table}$. This shows that the learning of mathematics with cooperative learning model type course review horey is more effective than the mathematics learning using direct learning model towards mathematics learning outcomes in VIII grade students of SMP Negeri 1 Pundong in even semester regency academic year 2016/2017.

Keywords: effectiveness, cooperative learning model type course review horey, learning outcomes

Introduction

Education has an important role in the development of a nation. Education is a process to help people develop their potential. Education is also a container for human resources (HR) that is good in terms of religion, intelligence, and skills so that the effort is needed to improve the quality of education to promote the nation's culture. Mathematics has an important role. Therefore, mathematical subjects are given at every level ranging from elementary education (SD and SLTP). Mathematics is also necessary to meet the practical need to solve problems in daily life. The crucial role of mathematics requires students of every formal education level, to be able to learn and master mathematics in good and true. Studying mathematics requires considerable time and good planning and is done with full concentration and structured; its implementation requires active individuals to gain new experience and knowledge. Based on the importance of mathematical roles in schools, it needs to be sought after good learning outcomes. However, the fact of the middle semester exam results in SMP 1 Pundong Junior High School There is still several students who get scores under the minimum submission criteria. The minimum submission criteria for mathematical subjects were 75. This can be seen in Table 1 that shows the submission of the midterm exam value:

Table 1. The submission of semester half exam State Junior high School 1 Pundong

Class	Total Students		Percentage (%)	
	Complete	Not complete	Complete	Not complete
VIII A	25	7	78,125%	21,875 %
VIII B	1	25	3,85%	96,15%
VIII C	8	15	34,78%	65,22%
VIII D	2	24	7,69%	92,31%
VIII E	0	26	0%	100%
VIII F	12	16	42,86%	57,14%
VIII G	0	26	0%	100%
VIII H	0	25	0%	100%

Source :SMP Negeri 1 Pundong

From table. 1 Almost all classes in SMP Negeri 1 Pundong have not reached the maximum value of the MCC. It is suspected that one of the reasons is the use of less precise learning models.

Based on information from one of the mathematics teachers at SMP Negeri 1 Pundong, the teacher still uses a direct learning model. Therefore, students are still not active so that students need to be encouraged to work on the task, and the concentration of student learning is still relatively low. It is seen when students cannot answer correctly when given a question by the teacher. Also, the students' activity is relatively low, seen when the teacher discussed the problem, given the lack of students who ask. So students' mathematics learning results are relatively low.

One of the efforts that can be done to achieve maximum math learning results can be made by developing various learning models. One of the learning models that can be applied is a cooperative learning model. Cooperative learning is often defined as learning that refers to learning methods where students work in small groups and help each other learn (Huda, Miftahul, 2012:32). Through cooperative learning, students can express their thoughts, brainstorm, and cooperate with their peers. It can maximize the achievement of a student's mathematical learning outcomes. One of the learning models that suit the condition is Horey's course review's cooperative learning model. According to Suprijono, Agus (2012:148) suggests that there are learning measures on the cooperative learning model of course type Review Horey. Therefore, the learning model used in this study is a cooperative learning model of Horey's course review type.

METHODS

The design of the research used is a posttest-only control design. As for the design of this research can be seen in table 2.

Table 2. Design Research

Group (Class)	Treatment	Posttest
Experiments (class VIII C)	X_1	Y_1
Control (class VIII F)	X_2	Y_2

Information:

Experiment: Classes using cooperative Learning Model Horey Course Review

Control: Classes that use the direct learning model

X_1: There is treatment (with the cooperative learning model type course review horay)

X_2: Treatment with direct learning models

Y_1: Results of the experimental class posttest

Y_2: Control class posttest results

(Sugiyono: 2012)

Test statistics for hypothesis testing are t-tests with the formula:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\dfrac{s_1^2}{n_1} + \dfrac{s_2^2}{n_2}}}$$

Sudjana: 2005)

Information:

$\bar{x}_1$ = the average grade of the experimental class students

$\bar{x}_2$ = the average grade of the control class students

n_1 = the number of students in the experimental class

n_2 = number of control class students

$s_1{}^2$ = standard deviation of experimental class students

$s_2{}^2$ = standard deviation of control class students

First hypothesis:

H_0: There is no significant difference between students' mathematics learning outcomes who use the course review horey cooperative learning model and those who use the direct learning model.

H_1: There is a significant difference in students' mathematics learning outcomes using cooperative learning model type review horey courses with those using direct learning models.

Rejection criteria H_0:

If $-\dfrac{w_1 t_1 + w_2 t_2}{w_1 + w_2} > t > \dfrac{w_1 t_1 + w_2 t_2}{w_1 + w_2}$

then H_0 is rejected. With a significance level used $\alpha = 0,05$ with: $w_1 = \dfrac{s_1^2}{n_1}$; $w_2 = \dfrac{s_2^2}{n_2}$; $t_1 = t_{\left(1 - \frac{1}{2}\alpha\right),(n_1 - 1)}$ and $t_2 = t_{\left(1 - \frac{1}{2}\alpha\right),(n_2 - 1)}$.

Second hypothesis:

H_0: Horey reviews course cooperative learning model type is no more effective than the direct learning model of mathematics learning outcomes for students of class VIII SMP Negeri 1 Pundong even semester 2016/2017 academic year.

H_1 Horey review course cooperative type learning model is more effective than the direct learning model of mathematics learning outcomes for students of class VIII SMP Negeri 1 Pundong even semester 2016/2017 academic year.

Rejection criteria H_0:

If $t > t_{1-a}$, then H_0 is rejected. With a significance level $\alpha = 0,05$ and degrees of freedom $(n_1 - 1)$ and $(n_2 - 1)$, respectively.

RESULTS AND DISCUSSION

Based on the results of research conducted at SMP Negeri 1 Pundong from May 17-24, 2017, obtained test scores in mathematics learning outcomes of experimental and control class students. A summary of the description of mathematics learning achievement test scores is in Table 3.

Table 3. Summary Description of Learning Outcomes Test Scores

Class	Highest score	Lowest value	$\bar{X}$	S	S^2
Experiment	90,50	32,50	65,6326	12,10107629	146,47
Control	90	40	69,65	11,079	122,74

Table 3 shows the minimum value, maximum value, and average grades – the average class of the experiment and the control class. It can be seen that the average value of the experiment class is higher than the average value of the control class.

Table 4. Two-party hypothesis test Results summary

t_{count}	t_{table}	Level of significance	(df_i) = n_i - 1	Conclusion
2,36648	2,01174	5%	(df_1) = 27 (df_2) = 22	H_0 rejected

According to table 4, it is revealed that the values of t_{count} = 2.36648 and t_{table} = 2, 01174 in the equivalent of 5% significance with df_1 = 27 and df_2 = 22, which means t_{count} = 2.36648 > t_{table} = 2.01174, so H_0 rejected and H_1 accepted.

Thus, there is a significant difference between mathematics learning outcomes that use the course review horey cooperative learning model and those that use direct learning models in class VIII, even students of SMP Negeri 1 Pundong in the 2016/2017 school year.

Table 5. Summary of One-Party Hypothesis Test Results

t_{count}	t_{table}	Level of significance	(df_i) = n_i - 1	Conclusion
4,42698	1,67792	5%	(df_1) = 27 (df_2) = 22	H_0 ditolak

Based on Table 5, it is known that the value of t_{count} = 4.42698 and t_{table} = 1.67792 at the 5% significance level with df_1 = 27 and df_2 = 22, which means t_{count} = 4.42698 > t_{table} = 1.67792, so H_0 is rejected and H_1 received.

Thus, the cooperative learning model type course review horey is more effective than the direct learning model of mathematics learning outcomes for students of class VIII even semester of SMP Negeri 1 Pundong in the 2016/2017 school year. It is assumed that if the student's mathematics learning outcomes are good, then the learning process with the learning model applied is successful or productive.

Before the experimental class and the control, the class is given treatment. First, pay attention to the sample's initial ability. Initial ability is obtained from the Midterm Examination scores. The Midterm Examination results obtained the average value of the Midterm Examination experimental class $\bar{X}$ = 65,6326, while the average value of the Midterm Examination control class $\bar{X}$ = 69,6500. For the homogeneity test, the initial ability is obtained χ^2_{count} = 12.5215 while the value of χ^2_{table} = 14.0671 this shows χ^2_{count} < χ^2_{table} that both classes have the same initial capability variance values.

After learning is finished, the posttest is carried out both in the experimental and control classes to determine student learning outcomes. Based on the results of calculations from the posttest data, it is known that the average value of the posttest results for the experimental class is 69.565, and the control class is 53.571. Based on these results, it can be seen that the experimental class and the control class have relatively different final abilities. After testing the hypothesis of two parties at a significance level of 5% with degrees of freedom (df_1) = 27 dan (df_2) = 22 obtained t_{count} = 2,36648 > t_{table} = 2,01174. This means that there is a significant difference between mathematics learning outcomes that use the horey review course type cooperative learning model and those that use direct learning models in class VIII students in the even semester of SMP Negeri 1 Pundong the 2016/2017 school year. After testing one party's hypotheses at a significance level of 5% with degrees of freedom (df_1) = 27 and (df_2) = 22. This means that the learning outcomes of experimental class students whose learning applies cooperative learning model type course review horey are more effective than the control class whose learning applies the direct learning model. Based on the results of data analysis and the assumptions above, it can be concluded that learning with a cooperative learning model course review horey type is more effective than learning with a direct learning model.

CONCLUSION

Based on the results of research and discussion, it can be concluded that there is a significant difference between mathematics learning outcomes using cooperative learning models of course review horey and those using direct learning models in class VIII, even semester students of SMP Negeri 1 Pundong in the 2016/2017 school year. This is indicated from the results of the two-party t-test student test results obtained $t_{count} = 2,36648 > t_{table} = 2,01174$ at the significance level with degrees of freedom $(df_1) = 27$ and $(df_2) = 22$ H_0 rejected and H_1 accepted.

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