THE EFFECTIVENESS OF THINK PAIR SHARE OF COOPERATIVE LEARNING ON STUDENT'S MATHEMATICS LEARNING OUTCOMES OF THE VII GRADE

Adhitya Prasetyaningtyas[1], Sunaryo[2]
Mathematics Education Program Study FKIP UAD
Jalan Ring Road Selatan, Tamanan, Banguntapan, Bantul Yogyakarta
[1]Adhityaprasetya13@gmail.com, [2]sunaryo.bener@yahoo.co.id

ABSTRACT
The use of less effective learning models causes students less active when learning in the classroom so that student learning outcomes are low. This research aims to determine the effectiveness of cooperative learning model type think pair share towards the outcome of grade VII students' mathematic subject at State Junior High School (SMP Negeri) 2 Srandakan, Bantul 2nd semester of the academic year 2017/2018. This is quantitative research with the population of students grades VII in SMP Negeri 2 Srandakan, Bantul, of the academic year 2017/2018 consists of 6 classes. The sample was selected through random sampling. It was chosen that class VII B as an experiment class and class VII B as a controlling class. The method of data collection is by applying tests and documentation. The research instrument employed in this study is a multiple-choice question. The testing instruments used in this research are the validity test, differencing test, and reliability test. The data analysis methods used for the prerequisite test are normality testing, homogeneity test, and hypothetical test through t-test. According to the result of t-test from both sides, it was found out that $t_{count}=2{,}00932$ and $t_{table} = 2{,}00862$ in which $t_{count} > t_{table}$. There was a difference in students' outcome using cooperative learning model of type think pair share, with the outcome of students learning by using direct learning model in class VII SMP Negeri 2 Srandakan, 2nd semester of the academic year 2017/2018. Also, based on the t-test of one side, it was found out that $t_{count} = 2{,}00932$ and $t_{table} = 1{,}67592$ in which $t_{count} > t_{table}$ defined as the cooperative learning model of type think pair share is way more effective than direct learning model to the outcome of learning the mathematic subject of students in grade VII SMP Negeri 2 Srandakan, in the 2nd semester of the academic year 2017/2018.
Keywords: Effectivity, Think Pair Share, Learning Outcome

INTRODUCTION

Based on the Law of the Republic of Indonesia Year 2003 No.20 on the National Education System says 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 spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by himself, society, nation, and state. By the Law above, it is found that in a learning process, a student must be able to develop his potential. Directly students are required to be active when following the learning process.

A fair learning process is a learning process that can deliver students to get good learning outcomes. As contained in Ali Hamzah and Muhlisrarini (2014: 42), learning is said to be an effort for students in the form of activities to choose, determine and develop optimal methods and strategies to achieve desired learning outcomes. In this case, the teacher must choose, establish, and develop learning models that are used so that the ongoing learning process can achieve the expected learning outcomes.

To find out how the learning process occurs at school, then on October 9, 2017, conducted an interview with a mathematics teacher at SMP Negeri 2 Srandakan, Bantul. The teacher said that learning in schools still uses the direct learning model. The teacher demonstrates skills, presents information step by step, and then provides initial training. The Think Pair Share type of cooperative learning model has also never been used in its learning process.

Based on the results of the documentation dated November 10, 2017, it was found that many students received grades below the Minimum Completeness Criteria (MCC) of 75 as shown in Table 1.

Table 1. Results of Mid-Semester Grade VII Grade Assessment of SMP Negeri 2 Srandakan Regency of Bantul

Class	Average	The number of students		Percentage	
		Complete	No Complete	Complete	No Complete
VII A	48,39	1	27	3,57%	96,43%
VII B	55,00	3	25	10,71%	89,29%
VII C	53,57	2	26	7,14%	92,86%
VII D	44,81	0	26	0,00%	100,00%
VII E	48,75	0	26	0,00%	100,00%
VII F	44,42	0	26	0,00%	100,00%

Source: SMP Negeri 2 Srandakan

Based on the interview results and the documentation above, the teacher must find and apply a learning model to interact with other students on the lesson's topics. A learning model is needed to trigger students to understand a lesson topic through discussion activities.

Various types of learning models can be applied; one of them is Think Pair Share. According to Aris Shoimin (2016: 208), Think pair share is a cooperative learning model that can enable students better to understand the concept of the topic of learning. So in the Think Pair Share learning model, students are grouped in pairs. It aims to make students able to mutually help each other and exchange ideas about the concepts they have thought of each.

The objectives of this research are: 1) To find out whether or not there is a difference between student learning outcomes using cooperative learning models of think pair share type and student learning outcomes using direct learning models in class VII of SMP Negeri 2 Srambat semester II of the academic year 2017/2018. 2) To find out the effectiveness of mathematics learning using think pair share models compared to mathematics learning using direct learning models to the learning outcomes of Grade VII students of SMP Negeri 2 Srambat semester II of the academic year 2017/2018

METHODS

This type of research is quantitative research by applying cooperative learning models Think Pair Share type. According to the type, data from this study are in numbers and analysis using statistics. This research was carried out in the SMP Negeri 2 Srandakan Regency of Bantul. Data collection was carried out in the second semester of the 2017/2018 Academic Year. In this study, the population used was all VII grade students of SMP Negeri 2 Srandakan academic year 2017/2018 consisting of 6 classes, namely VII A, VII B, VII C, VII D, VII E, and VII F, with the number of students as many as 160 students. Sampling using simple random sampling techniques to the class. After random sampling, class VII B was obtained as an experimental class with cooperative learning models Think Pair Share (TPS) and class VII C as a control class with direct learning models. The type of design used is the post-test-only control design, which can be seen in Table 2.

Table 2. Research Design

Group	Treatment	Learning Outcomes Test (Post-test)
Experiment	X	O_1
Control		O_2

(Sugiyono, 2016:112)

The method used to collect data is test and documentation. The test conducted in this study is the last to calculate student learning outcomes after being given teaching with a think pair share model and the learning outcomes of students who have been taught with a direct learning model. The documentation conducted in this study is the data of students' names and the results of the Middle Semester Grade VII students of mathematics.

Data collection techniques in this study were tests. Test to find out the results of learning mathematics used multiple-choice questions. The research instrument tests conducted were validity

tests, different power tests, and reliability tests. Analysis prerequisite tests include tests for normality and homogeneity tests. Hypothesis testing uses the two-party t-test and the one-party t-test.

While this research hypothesis is: 1) There is a difference in learning outcomes between mathematics learning using the Cooperative learning model Think Pair Share type and mathematics learning using the direct learning model. 2) Mathematics learning that uses the Think Pair Share type of cooperative model is more effective than mathematics learning that uses direct learning models.

RESULTS AND DISCUSSION

The initial analysis is needed to determine the initial state of the two samples. The data used in the preliminary analysis is the result of the VII semester assessment of mathematics subjects.

A normality test is used to determine whether the data obtained is usually distributed or not. The normality test is done using the chi-square test (χ^2). A summary of the control class's normality tests and the experimental class are in Table 3 below.

Table 3. Summary of normality tests for initial ability values

Group	χ^2_{count}	χ^2_{table}	Significant Level	Info.
Experiment	4.1475	9.4877	5%	Normal
Control	1.5532	5.9915	5%	Normal

Based on data from Table 3, it can be seen that in the experimental class $\chi^2_{count} = 4{,}1475 < \chi^2_{table} = 9{,}4877$ with a significance level of 5% and degrees of freedom four we conclude that the data are typically distributed. The control class $\chi^2_{count} = 1{,}5532 < \chi^2_{table} = 5{,}9915$ with a significant level of 5% and degree of freedom 2 obtained that the data are typically distributed.

A homogeneity test is used to determine whether the variance or diversity of samples encountered is the same or not. If the variance is the same, it means that the sample is from a homogeneous population. Homogeneity testing for initial ability tests uses the chi-square test statistic (χ^2). A summary of the homogeneity of the control class's initial values and the experimental class is given in Table 4 below.

Table 4. Summary of homogeneity tests of initial ability values

Significant Level	χ^2_{count}	χ^2_{table}	Info.
5 %	0,06179392352	3,8415	Homogeneous

Based on Table 4, it can be concluded that $\chi^2_{count} = 0{,}06179392352 < \chi^2_{table}$ with a significant level of 5% and degrees of freedom (n-1) = 1 so that the experimental class (class VII) B) and the control class (class VII C) have the same or homogeneous variance.

Student mathematics learning outcomes are obtained from tests given to the experimental class and the control class. The test given is in the form of multiple-choice questions, amounting to 16 questions. The analysis prerequisite test is the test for normality and homogeneity. The hypothesis test is then conducted, consisting of the first hypothesis test and the second hypothesis test.

The normality test is used to determine whether the mathematics learning outcomes of experimental class (VII B) and control class (VII C) students are typically distributed. The test used is the chi-square test (χ^2). A summary of the calculation of the normality of test scores of learning outcomes can be seen in the following Table 5.

Table 5. Summary of normality test scores on mathematics learning achievement tests

Group	χ^2_{count}	χ^2_{table}	Significant Level	Info.
Experiment	2.6453	7.8147	5%	Normal
Control	0.6165	7.8147	5%	Normal

Based on data from Table 5, it appears that in the experimental class $\chi^2_{count} = 2{,}6453 < \chi^2_{table} = 7{,}8147$ with a significant level of 5% and a degree of freedom 3, we conclude that the data are normally

distributed. The control class $\chi^2{}_{count} = 0,6165 < \chi^2{}_{table} = 7,8147$ with a significant level of 5% and degree of freedom 3 obtained that the data are normally distributed.

A homogeneity test is used to determine whether the variance or diversity of samples encountered is the same or not. If the variance is the same, it means the sample is from a homogeneous population. The test used is the chi-square test (χ^2). Summary of the calculation of the homogeneity test of learning outcomes in the following Table 6.

Table 6. Summary of homogeneity tests of mathematics learning outcomes

Significant Level	χ^2_{count}	χ^2_{table}	Info.
5 %	5 %	0,005812346	Homogeneous

Based on data from Table 6, it can be concluded that $\chi^2{}_{count} = 0,005812346 < \chi^2{}_{table} = 3,8415$ with a significant level of 5% and degrees of freedom $(n-1) = 1$. So the experimental class (n-1) class VII B) and control class (class VII C) have the same or homogeneous variance.

1. First Hypothesis

   The first test was conducted to determine whether there were differences between the experimental class mathematics (VII B) against the control class's mathematics learning outcomes (VIIC).

   The hypothesis used is as follows:

   $H_0: \mu_1 = \mu_2$

   $H_1: \mu_1 \neq \mu_2$

   With

   H_0: There is no difference in the learning outcomes of students being taught mathematics using the Think Pair Share cooperative learning model with student learning outcomes in mathematics taught using the direct learning model

   H_1: There is a difference in the learning outcomes of students who are taught using the cooperative learning model think pair share type with the results of learning mathematics students who are taught using the direct learning model

   The summary of the hypothesis test results of mathematics learning outcomes quadrilateral and triangle material in experimental class students (VII B) and control class students (VII C) in Table 7.

   Table 7. Summary of the first hypothesis test the value of mathematics learning outcomes

t_{count}	t_{table}	Significant Level	df	Info.
2.00932	2.00862	5%	52	H_o rejected

   Based on the results of calculations that have been done in the first hypothesis test with a significant level of 5% and degrees of freedom, 52, obtained $t_{count} = 2,00932$ and $t_{table} = 2,00862$. Because $t_{count} = 2,00932 > t_{table} = 2,00862$, then H$_0$ is rejected and H$_1$ is accepted. So it can be concluded that there are differences in student learning outcomes in mathematics taught using cooperative learning models think pair share type with student learning outcomes in mathematics taught using direct learning models in class VII of SMP Negeri 2 Srambat even semester of the academic year 2017/2018.

2. Second Hypothesis

   The second test is used to test which learning model is more effective between Think Pair Share (TPS) cooperative learning models and direct learning models. The hypothesis used in this test is

   $H_0: \mu_1 \leq \mu_2$

   $H_1: \mu_1 > \mu_2$

   With

   H_0: Think pair share type of cooperative learning model is not more effective than the direct learning model of learning outcomes in class VII students of SMPN 2 Srambat even semester in the academic year 2017/2018

H_1: Think pair share type of cooperative learning model is more effective than the direct learning model of learning outcomes in class VII students of SMPN 2 Srambat even semester in 2017/2018.

The summary of the calculation of the second hypothesis test in Table 8 follows

Table 8. Summary of the second hypothesis test the value of mathematics learning outcomes

t_{count}	t_{table}	Significant Level	df	Info.
2.00932	1.67592	5%	52	H_o rejected

The second hypothesis test calculation, with a 5% significance level and 52 degrees of freedom, obtained $t_{count} = 2{,}00932$ and $t_{table} = 1{,}67592$. Because $t_{count} = 2{,}00932 > t_{table} = 1{,}67592$, then H_0 is rejected and H_1 is accepted. So it can be concluded that the cooperative learning model of think pair share type is more effective than the direct learning model of learning outcomes in class VII students of SMPN 2 Srambat even semester of the academic year 2017/2018.

CONCLUSION

Based on the research that has been done as described previously, the following research conclusions are drawn:

1. There is a difference between the learning outcomes of students who use cooperative learning models think pair share types with the learning outcomes of students who use direct learning models in class VII of SMP Negeri 2 Srambat in the second semester of the academic year 2017/2018. This is evidenced by the first hypothesis's results with a significant level of 5% and degrees of freedom 52, the value of $t_{count} = 2{,}00932$ and $t_{table} = 2{,}00862$ where $t_{count} = 2{,}00932 > t_{table} = 2{,}00862$, so H_0 is rejected.
2. Think pair share type of cooperative learning model is more effective than the direct learning model of mathematics learning outcomes for Grade VII students of SMP Negeri 2 Srambat in the second semester of 2017/2018. This is evidenced by the second hypothesis's results with a significant level of 5% and degrees of freedom 52, the value of $t_{count} = 2{,}00932$ and $t_{table} = 1{,}67592$ where $t_{count} = 2{,}00932 > t_{table} = 1{,}67592$, so H_0 is rejected.

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