The application think pair share in learning mathematic

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Abstract. This research was aimed at showing the effect of using cooperative learning type Think Pair Share toward learning outcome of math. This research included two classes in class . The classes were chosen by using Random Sampling. The Design was Treatment by Block Design. The result of the study showed that: (1) The result of the study of the students who were taught by cooperative learning type Think Pair Share model was higher than the result those tought by conventional model. (2) The result study of male students who were taught by using cooperative learning model type Think Pair Share is higher than the those tought by conventional model. (3) The result study of female students who were taught by using cooperative type was higher than those tought by conventional model. (4) There was no interaction between the learning model with gender toward students result study.

1. Introduction

One effort that can be used to improve student learning outcomes is to use a cooperative learning model type Think Pair Share [1]. All cooperative models using Think Pair Share can improve students' mathematical problem solving and mathematical communication skills [2]. Of the many good learning techniques that can be selected, then in collaboration activities between lecturers from Semarang State University and Mathematics teachers at Temanggung 1 Public High School have carried out Class Action Research (CAR). In [3] this CAR activity, one of the learning techniques that are expected to improve problem solving skills for SHS students is through the application of Think-Pair-Share (TPS) learning techniques based on the use of interactive media. One of the interactive media is Mouse Mischief. Interactive media using the Mischief Mouse program is a tool to build communication between students, teachers, and other teaching materials that can allow students to provide feedback [4]. Think Pair Share is one type of learning that can be used for teachers or to check students' understanding [5]. Cooperative learning refers to a variety of teaching methods in which students work in small groups to help each other in academic learning contexts [6]. Cooperative learning is student-centered learning, this is evidenced by the students 'activeness during students' ongoing learning with activities for the material and the process of tasks, and giving explanations to the group [7]. states that the Think-Pair-Share type of cooperative learning method is one of the strategies that requires students to interact with their partners by sharing individual ideas in solutions after a period of individual thinking time. The Think-Pair-Share strategy is designed to differentiate instruction by giving students time and structure to think on a given worksheet, allowing them to formulate individual reviews of these ideas and share ideas with partners [8].

Think Pair Share is a three-way tool: Phase-1: Thinking (thinking) The teacher asks questions or problems related to learning, then students are required to measure or determine several stages, Step-2: Pairing (pairing up) Teachers Help students pair up with others to discuss what he had thought about in the first stage. Lessons at this stage are expected to share answers if they have made decisions or shared ideas. For 4-5 minutes in pairs, Stage 3: Sharing (Sharing) In the final stage, the
teacher asks to share with the whole class what they have talked about. This was effectively done by taking turns for the sake of the couple and being distributed until about a quarter of people had received a response to report [9].

| Table 1. Description of Think-Pair-Share |
|-----------------------------------------|
| **What?** | Think-Pair-Share; a collaborative learning technique |
| **Why?** | To increase participation by allowing a group of collaborators to interact and share ideas, which can lead to the knowledge building among them. |
| **How?** | Consist of three stages: Think – Individually Each participant thinks about the given task. They will be given time to jot down their own ideas or response before discussing it with their pair. Then, the response should be submitted to the supervisor/teacher before continue working with their pair on the next (Pair) stage. Pair – With partner The learners need to form pairs. The supervisor/teacher need to cue students to share their response with their partner. Each pair of students will then discuss their ideas about the task, and their previous ideas. According to their discussion, each pair will conclude and produce the final answer. Then they need to move to the next (Share) stage. Share – To all learners/collaborators The learners pair to share their results with the rest of the class. Here, the large discussion will happen, where each pair will facilitate class discussion in order to find similarities or differences towards the response or opinions from various pairs. |

2. Method
This study uses a quantitative approach in the form of quasi-experimental (quasi-experimental [10]). Quasi-experiment is research that approaches actual experiments. Considering the large population, sampling was taken. The sampling technique from the population after testing the variance homogeneity and the mean similarity test [11]. After the population is homogeneous and has the same average, to determine the sample, a random sampling method is used where the population is randomized (class) [12]. Determination of the first phase of the sample is done by drawing two classes which will be sampled in Pertiwi 1 High School Padang. The second step is to determine the control class and experimental class, done by drawing.

3. Result and Discussion
3.1. Students of the Experimental Activity
3.1.1. Overall Student Learning Outcomes
The experimental class students consisted of 36 people where as many as 15 male students and 21 female students. Overall learning outcomes of the experimental class are: $X_{\text{min}} = 32, X_{\text{max}} = 99.5$ average (mean) = 71.13; mode = 75.5; median = 71.37; standard deviation = 16.55 and variance = 273.88. Frequency distribution is found in the following table:

3.1.2. Male Student Learning Outcomes
There are 15 male students. From the test data! learning for male students is obtained: average (mean) - 62.37; standard deviation of 17.62 and variance of 310.37.

3.1.3 Female Student Learning Outcomes
For students who belong to the group of female students in the experimental class there are 21 people. From the data of the learning outcomes test for the group of female students obtained: the mean (mean) 77.38; standard deviation of 12.78 and variance of 163.39.

3.2. Control Class Students
3.2.1 Overall Student Learning Outcomes
The control class students consist of 38 people in which 16 male students and 22 female students. Overall the learning outcomes of the control class are: $X_{\text{min}} = 20, X_{\text{max}} = 88$; average (mean) = 55.37; mode = 48.22; median = 52.5; standard deviation = 15.02 and variance = 225.55.
3.2.2. Test Normality Data on Mathematics Learning Outcomes for Experimental Classes and Control Classes

From the calculations stated in the above table, it was concluded that the data of the experimental class and control class learning outcomes, for all class members (total), male student groups, and female student groups, were normally distributed because the results of the analysis with the lliefors formula showed that L.

3.2.3. Homogeneity test

Homogeneity test is carried out with the largest variance analysis compared to the smallest variant. Homogeneity Test Table Value of Mathematics Learning Outcomes for Experimental and Control Classes.

From the results of the homogeneity test in the experimental class and control class, both in total, groups of male students and groups of female students, homogeneous learning outcomes. Hypothesis testing. To test the hypothesis in this study was carried out by t test. The test results are as follows:

1. First Hypothesis
From the results of the test of the first hypothesis above obtained t count at 4.29 while t Tablei at the significant level of 0.05 is 1.67 meaning t count> t table, so that H is accepted and H0 is rejected.

2. Second Hypothesis

| Cooperative Learning Experiment Class type | Think Pair Share Female Students. | Control Class for Female Students |
|-------------------------------------------|---------------------------------|----------------------------------|
| n= 15                                     | S = 62.37 Si2 = 310.37           | T7 = 45.31                       |
|                                           | t= 3.02 tranzcl= 1.70            | S2 = 188.76                      |

Conclusion: Hi rejected because

3. Third Hypothesis

| Cooperative Learning Experiment Class type | Think Pair Share Female Students. | Control Class for Female Students |
|-------------------------------------------|---------------------------------|----------------------------------|
| m = 21                                    | S = 163.39                      | S = 129.49                       |
| ~Xf= 77.38                                | S2 = 163.39                     |                                  |
| S2 = 163.39                               | t = 3.99                        |                                  |
| t = 3.99                                  | t = 1.68                        |                                  |

Conclusion: Hi rejected because

4. Fourth Hypothesis

Based on the Mean Unmeasured Method for the fourth hypothesis.

| Source of Diversity | Number of squares | Free degree | Middle | Squares F | Column Line Interaction |
|---------------------|-------------------|-------------|--------|-----------|------------------------|
| Line Column Interaction in Cells | 4385,41 4558,27 | 1 1 | 4385,41 = Sf2 | 23.32 | 24,243,98 | 3.98 |
|                      | 24,17 13163,89   | 70 | 4558,27 = Sc2 | 0,13 | 3.98 |
|                      |                   |             | 24,17 = Srf2 |                 |                       |
|                      |                   |             | 188,06 = Sw2 |                 |                       |
Based on the Mean Unmeasured Method, obtained $F$ count $\approx 0.13$ while the value of $F$ value for the significance level of 0.05 at the degree of freedom (70) is 3.98. Bro, the price of $F$ is <Flabel-So, accept $H_0$ and it is concluded that there is no interaction between the learning model and gender on student learning outcomes.

3.2. Discussion of Research Results

Based on the learning outcomes that have been stated, discussions will be held. This discussion is related to the theory that was mentioned in the previous section.

- Students 'Mathematics Learning Outcomes taught with Cooperative Learning Models Type Think Pair Share is Higher than Students' Mathematics Learning Outcomes taught by Conventional Learning Models.

The results of the analysis of research data obtained through the presentation of the first hypothesis shows that overall the cooperative learning model type Think Pair Share (A) provides higher mathematics learning outcomes than conventional learning models. Good Mathematics Learning Outcomes for Male Student Groups M

4. Conclusion

Based on data analysis and discussion of the results of research on the Application of Cooperative Learning Type Think Pair Share in Mathematics Learning in class X Pertiwi 1 High School Padang, then some conclusions can be drawn, as follows: Overall, students who were taught with the cooperative learning model type Think Pair Share showed higher learning outcomes than students taught with conventional learning models. Students in groups of male students taught with a cooperative learning model type Think Pair Share showed learning outcomes which is higher than the group of male students taught with conventional learning models.

1. Students who are groups of female students taught with a cooperative learning model type Think Pair Share show higher learning outcomes compared to groups of female students taught with conventional learning models.

2. There is no interaction between learning models with gender on student learning outcomes. The implementation of cooperative learning model type Think Pair Share in very mathematics subjects effective for improving student learning outcomes, both male and student groups women when compared to conventional learning models.

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