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Differences of Mathematics Learning Results between Make a Match Cooperative Methods and Expository Methods

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ABSTRACT
Mathematics is a branch of science that is always used in all life and also supports other sciences. Learning outcomes in learning are very important because the success of learning carried out in teaching and learning activities can be seen from student learning outcomes. Learning outcomes are the results achieved by students or someone after doing learning activities. teachers must find the right method in learning mathematics. Difficulty and low interest of students in learning and understanding mathematics material can be overcome by applying appropriate learning methods. The purpose of this study was to determine the differences in student learning outcomes taught through the Make A Match type cooperative learning method and the expository method on triangular flat shapes. From the observations seen from student learning activities, it shows that the more active and more enthusiastic in learning are the classes that use the Make A Match learning method. This means that the Make A Match learning method has better learning outcomes than the Expository learning method.

Keywords: Learning Methods, Mathematics, Cooperative Methods

INTRODUCTION
Learning outcomes in learning are very important because the success of learning carried out in teaching and learning activities can be seen from student learning outcomes. Learning outcomes are the results achieved by students or someone after doing learning activities. Students try to get the best learning outcomes to achieve good achievements as well. Student learning outcomes are not only seen from

academic grades at school but also from changes in the students themselves, because in teaching and learning activities students experience the teaching and learning process as a process of change that occurs in students due to experiences gained by students when interacting with their environment. (Siregar, 2015).

Learning outcomes can be said to be complete if they meet the minimum completeness criteria set by each subject teacher. To find out the level of students' understanding of the material in learning is to look at student learning outcomes obtained during the learning process. Learning outcomes are abilities obtained by students after going through learning activities. In addition, success in the learning process can be measured by the number of students who are active and master the lesson. The more students who are active and master the material, the more students are able to achieve success in the learning process. If students do not instill an active attitude during the teaching and learning process, students will find it difficult to follow the lesson.

Mathematics is a branch of science that is always used in all life and also supports other sciences (Khairunnisa, 2014). Therefore, starting from low-level education to higher-level education, mathematics has always been part of the curriculum. Learning mathematics is a subject that is implemented at the primary to secondary level of education. Therefore, mathematics plays an important role in human life. With mathematics education, students are expected to have the ability to think logically, critically and analytically, with this attitude students have the impulse of curiosity and can solve every problem (Kustawan, 2011).

Based on the observations, the findings from the expository learning outcomes at SMP Darul 'Izzah in grade VII in the odd semester exams are still very varied. Not all mathematics learning outcomes from students are high or good. There are some students' mathematics learning outcomes that are unsatisfactory, even 40% of seventh grade students whose scores are still below the KKM or still below a score of 70. In general, mathematics is often considered a difficult subject for students to understand. If many students think mathematics is a difficult subject, it will have an impact on student learning outcomes.

The Make A Match method (make a pair) is one type of cooperative learning method (Suherman & Winaputra, 2001). This method was developed by Lorna Curan. One of the advantages of this technique is that students look for partners while learning about a concept or topic, in a fun atmosphere.

The things that need to be prepared if learning is developed with Make A Match are cards. The cards consist of cards containing questions and other cards containing answers to these questions (Suprijono, 2015).

The final condition of the implementation of the make a match learning model will be a significant change in the learning process and learning outcomes of Mathematics. The expected changes are as follows (Rusman, 2014):

1. Teacher activity increases through the application of the Make A Match type of cooperative learning model.
2. Student activity increases because the teacher creates an active, creative, and student-centered learning atmosphere.
3. The results of learning Mathematics in triangular shapes increase due to meaningful learning by applying the Make A Match type cooperative learning model.

From the description above, it can be concluded that the cooperative learning model of learning make A match in this study is a pleasant learning atmosphere which creates a condition for teaching and learning activities to occur which include looking for partners between groups of questions and groups of answers to questions and answers and carrying out assessments (Hamzah, 2011).

The expository method is a way to convey ideas, ideas or provide information orally or in writing. If the delivery is done orally, the teacher continues to speak in front of the class while the students listen to the teacher's explanation.

The expository method is a learning that emphasizes the process of delivering material to students verbally from a teacher to students with the intention that students can master the subject matter optimally.

Embedding the expository method with the term direct instruction strategy. Because in this case students are not required to find the material. The subject matter seems to be ready, therefore the expository method emphasizes successive processes, so it is often also called the "chalk an talk" method (Sanjaya, 2008).

There are several characteristics of the Expository Method including:

1. This is done by delivering the subject matter verbally.
2. Usually, the subject matter delivered is ready-made subject matter, such as data or facts, certain concepts.
3. The main goal of learning is mastery of the subject matter itself. This means that after the learning process ends students are expected to understand it correctly by being able to re-express the material that has been described.

According to Wina Sanjaya in the use of the expository method there are learning principles that must be considered by every teacher, including:

1. Goal oriented.
2. Communication principle.
3. The principle of preparation.
4. Sustainable principle.

In teaching and learning activities with the expository method, learning activities are still centered on the teacher as a provider of information. The teacher speaks at the beginning of the lesson, explains the material and examples of questions. Students not only listen and take notes but also make practice questions and ask the

teacher if they don't understand, the teacher can check student work individually, and the teacher explains again to students who do not understand the material individually (Wilis, 2011).

To overcome the problems above, the teacher must find the right method in learning mathematics. Difficulty and low interest of students in learning and understanding mathematics material can be overcome by applying appropriate learning methods. Learning methods in the learning process have an important role. With the learning method, students will be brought into a more pleasant atmosphere

METHOD

The purpose of this study was to determine the differences in student learning outcomes taught through the Make AMatch type of cooperative learning method and the expository method on triangular shape material.

In this study using a quasi-experimental method, namely research that does not allow the determination of the group that gets the treatment and the control or comparison group randomly.(Supardi, 2014). What researchers can do is look for groups of subjects who are exposed to independent variables, and other groups of subjects who do not experience independent variables(Arikunto, 2015).

In this study there are two variables, namely the independent variable and the dependent variable. The independent variable is the variable that causes the occurrence or change of the dependent variable, while the dependent variable is the variable that is affected or is the result of the independent variable (Riduwan, 2010). The independent variables in this study were the use of the Make A Match type of cooperative learning model in the experimental class and the use of the expository method in the control class which was applied and the mathematics learning outcomes of seventh grade junior high school students. The design of this research is described in the following table:

Table 1. Research Design

Group	Treatment	Postes
E	X1	O1
k	X2	O2

RESULTS AND DISCUSSION

The descriptions presented in the research results include the variables of students' mathematics learning outcomes taught through the Make A Match type cooperative method and the Expository Method on the triangular flat shape material. This research was conducted in class VII, even semester of SMP Darul 'Izzah, West Jakarta. Data collection was carried out using multiple choice questions with 25 choices (ABCD) which had previously been tested for item validity and reliability

(r11 0.834) which means the questions are reliable and feasible to use. The results of the research will be described more clearly as follows:

1. **Students' Mathematics Learning Outcomes Taught Through the Make A Match Learning Method**

Based on the results of students' mathematics learning taught in the experimental class using Make A Match learning, the lowest score was 44 and the highest score was 96 with an average value of the median mode and standard deviation of 12,446.79,884,383,2.

From the data, it is also seen that, among others, the average and median values are almost the same, namely 79.8 and 83.2, this shows that the data on mathematics perception scores on the competence of mathematics learning outcomes in this study are quite representative. Scores below average more scores above average. This shows that there are more high mathematics learning outcomes than those with high mathematics learning outcomes. low.

2. **Student Mathematics Learning Outcomes Taught Through Expository Learning Method**

From the results of students' learning mathematics taught in the control class with expository learning, the lowest score was 44 and the highest score was 96 with an average of 3.6 the median mode value and standard deviation of 14.01.653,83 60,5

From the data, it is also seen that, among others, the average and median values are almost the same, namely 63.6 and 60.5, this shows that the data on mathematics perception scores on the competence of mathematics learning outcomes in this study are quite representative. Scores below average more scores above average. This shows that the low mathematics learning outcomes are more than the high ones.

Data Analysis Prerequisite Test

1. Normality test

The use of normality by using the Liliefors test. The results of the calculation of the normality test can be seen in the following table:

Table 2. Normality Test Calculation Results

Sample	N	L count (Lo)	L table (Lt) = 0.05
Make a Match Class	30	0.1336	0.161
Expository Class	30	0.1418	0.161

The results of the calculation of the normality test of students' mathematics learning outcomes taught by learning Make a Match obtained Lo =0.1336Lt = 0.161 at a significant level of 0.05 for n = 30 and on the mathematics learning outcomes of students taught by expository learning, Lo =0.1418Lt = 0.161 at a significant level of 0.05 for n = 30.

Because the Lo of the two calculations is smaller than Lt (L table), it can be concluded that the data from the Make A Match group learning outcomes and the data from the Expository group learning outcomes are normally distributed.

2. Homogeneity Test

Homogeneity Test To find out the variance population, has the same or different variance. Homogeneity test is carried out with the F test or Fisher's test, because to find out whether the data in the X variable or Y variable is homogeneous or not. The test criteria are accepted H0 if Fcount < Ftable then Ho is accepted, or data from a homogeneous population or reject H0 if Fcount > F table and the data comes from an inhomogeneous population.

In the homogeneous test, the variance value of each class is calculated first. Variance value for Experiment class = 154.92 and control variance = 156.04 (calculations can be seen in appendix 20). Then compared between the largest variance in the smallest data variance.

From the results of the study obtained Fcount = 1.01 and Ftable = 1.86 at a significant level of 0.05 with a degree of freedom in the numerator 29 and the denominator degree 29. For the distribution of F look for the table 0.05 (29.29) obtained 1.86 because Fhitun < Ftable (1.01 < 1.86), then H0 is accepted at = 0.05. So it can be concluded that the variance of the two groups is homogeneous, then the results of the homogeneity calculation can be seen in the following table:

Table 3. Results of Homogeneity Test Calculation

Sample	N	L count (Lo)	L table (Lt) = 0.05
Make a Match Class	30	0.1336	0.161
Expository Class	30	0.1418	0.161

3. Hypothesis test

To test the hypothesis, the two parties' average similarity test was used using a t-test, because this hypothesis test is to compare two samples, the hypothesis test used is two sample tests. With the criteria of rejecting H0 if tcount > ttable or accepting H0 if tcount < ttable. .

The statistical hypothesis tests in this study are as follows:

H0: μ1 = 2

H1 : 1 2

Information:

H0 = There is no significant difference in students' mathematics learning outcomes taught through the Make A Match cooperative method and the Expository method.

H1 = Tthere is a significant difference in students' learning outcomes of mathematics taught through the Make A Match method and the Expository method.

1 = Average student learning outcomes in mathematics taught through the Make A Match type cooperative learning method

2 = Average student learning outcomes of mathematics taught through the Expository learning method

From statistical calculations, the t-test obtained tcount = 5.02 and ttable = 2.002 with a significant level of 0.05 in the two-party test. Because tcount = 5.02 > ttable = 2.002 then H0 is rejected and H1 is accepted, which means that there is a significant difference in the remaining mathematics learning outcomes taught through the Make A Match and Expository cooperative learning methods.

Discussion

Based on observations during the research in the Experimental class by applying the Make Match learning method, from the enthusiasm of students' learning that achieved all the indicators given by the teacher. Meanwhile, from the observations during the research in the Expository class, it can be seen from the enthusiasm of students who are less able to achieve most of the indicators that have been given by the teacher. However, there are still indicators that have not been achieved by students.

This was obtained when the author conducted research where both classes had equal abilities. This ability was revealed when the author conducted formative tests in the experimental class (Make A Match Method) and control class (Expository) when giving the subject matter at the beginning of the learning process.

The mathematics learning outcomes of class VII A students of SMP Darul 'Izzah, West Jakarta using the Make A Match type of cooperative learning method showed a good category with an average post-test score of 79.8. While the mathematics learning outcomes of students in class VII F of SMP Darul 'Izzah, West Jakarta using the expository method, showed a sufficient category with an average post-test score of 63.6. These results indicate that students whose learning uses the Make A Match type of cooperative method have better learning outcomes than students whose learning uses the expository method.

Test the hypothesis to the two groups to prove the truth of the hypothesis proposed by the students' learning outcomes using the Make A Match type of cooperative learning method with the expository learning method.

This is shown in the t-test, the value of tcount = 5.02 and ttable ((dk = nA + nB – 2, = 0.05) = 2.002 so that the hypothesis H0 is rejected and H1 is accepted. It means that it can be concluded that there are differences in the results of learning mathematics students who are taught through cooperative methods of Make A Match type and expository learning methods.

Based on the analysis of hypothesis testing, it can be concluded that there is a significant difference in students' mathematics learning outcomes taught through the Make A Match type of cooperative learning method and the Expository method on the triangular flat shape material in the even semester of Darul 'Izzah Middle School, West Jakarta.

CONCLUSION

Based on the results of the -t test, the value of tcount = 5.02 and this is greater than ttable 2.002 (at a significant level of 0.05/2, n-2), so that the hypothesis, H0 is rejected and the hypothesis H1 is accepted. This shows that there are differences in the results, students' learning mathematics taught through the Make A Match type cooperative method and the expository method on triangular shape material. The student learning outcomes taught through the Make A type cooperative method are better than the student learning outcomes taught through the Make A method. expository.

This can be proven from the average value of student learning outcomes using the Make A Match type cooperative method which is higher (79.8) than student learning outcomes using the expository learning method (63.6). From the observations seen from student learning activities, it shows that those who are more active and who are more enthusiastic in learning are classes that use the Make A Match learning method. This means that the Make A Match learning method has better learning outcomes than the Expository learning method.

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