EFFECTIVENESS OF THE USAGE OF COOPERATIVE LEARNING MODEL FOR MAKE A MATCH AND TALKING STICK TYPE ON MATHEMATICS LEARNING OUTCOMES OF THE SEVEN GRADE STUDENTS

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ABSTRACT

Exciting and Innovative Learning and Student enthusiasm can influence to the student learning outcomes. This thesis aims to know whether there is a difference between the results of mathematics learning using a cooperative learning model for Make a match and Talking stick type. Then, it also aims to know which learning model is more effective between the cooperative learning model for Make a match type and Talking stick type to the mathematic learning outcomes of the seven-grade student of SMP Muhammadiyah 2 Gamping at Even Semester in 2016/2017 Academic Year. The type of this research is included in experimental research. The populations in this research are all seven grade students of SMP Muhammadiyah 2 Gamping at Sleman Regency in the 2016/2017 academic year, consisting of three classes with the total number of students 108. This research sample is seven-grade student A as the experimental class I, seven-grade student B as the experimental class II and seven-grade student C as the test class. Purposive sampling technique is used as a sample selection. The research instrument is a test of mathematic learning outcomes in the form of multiple-choice questions. Instrument test includes validity test, different ability test, and reliability test. The data analysis technique used in this research is a prerequisite analysis test consisting of normality test and homogeneity test. Hypothesis test uses a t-one side test and a t-two side test. The result of the research shows that the t-two side test with 5% significances and 67 degrees of freedom achieves the value of t_{count}= 0,2278 and t_{table}= 1,99601. It means that there is no difference between the value of mathematic learning outcomes of the student using a cooperative learning model for Make a match type and Talking stick type.

Keywords: Effectiveness, Cooperative learning model of Make a match type, cooperative learning model of talking stick type.

INTRODUCTION

Today the government's attention is devoted to making schools of better quality. These qualities are not only aimed at cognitive abilities but more than that, namely the quality that is affective and psychomotor in the form of aspects of attitude and behavior. Every school is expected to instill good character in students so that they have been embedded in every child's soul to be applied in everyday life. To build a nation with a complete identity, a good education system is needed. In education, it takes creative learning to produce creative human beings and complete human education. Any education and teaching cannot give up the relationship with teachers.

The teacher's learning process may be successful if the learning process is fun, and students actively participate in learning activities, especially in mathematics. In fact, in schools, there are still often learning processes that place the teacher as the only source of information so that in-class students just sit, sit down, and record the information conveyed by the teacher. A process like this makes students less interested in these subjects because they tend to be bored, and students are less able to develop themselves. It is difficult to understand the material.

Mathematics is a familiar thing among students. Mathematics is identical to a complicated subject, consisting of many numbers and formulas. Mathematics has a huge role in human civilization. Because of its enormous role in mathematics is one of the main subjects in every level of education.

Even in every inch of this life without us realizing it always comes into contact with mathematics. According to the ' Roft ' in Uno, Hamzah B. (2009:108) suggests the importance of mathematics taught. This is due to the much needed and use mathematics in everyday life, for science, commerce, and industry. It provides power, short and unambiguous communication tools and serves as a tool to describe and predict. Mathematics achieves its power through its symbols, grammar, and language rules on him, as well as developing critical, axiomatic, logical, and deductive thinking patterns.

School mathematics is mathematics given at school, which is in the primary education curriculum and secondary education. The school's mathematics is taught in elementary education (Elementary And Junior Secondary Education), as it is (SLTA and SMK). This mathematics consists of the selected parts of mathematics to cultivate the skills and abilities of students, as well as to form a good person that blends in the development of science and Technology This means that mathematics is still math that has its mathematical traits, that is to have an abstract object of events as well as a consistent deductive mindset (Suherman, Erman, DKK:2003).

Based on the researcher's observation on 16 March 2017 at SMP Muhammadiyah 2 Gamping, researchers learned that students' mathematical outcomes are low. This is reinforced by the value of the central Deuteronomy Semester data of even semester 2016/2017. Here is the average value of Midterm exam math class VII academic grade SMP Muhammadiyah 2 Gamping semester, even school year 2016/2017 is shown in table 1.

Table 1. Midterm exam Values Mathematics class VII even Semester SMP Muhammadiyah 2 Gamping school year 2016/2017

Score	VII A	VII B	VII C
Mean	38	32	53
Max	54	58	90
Min	21	20	20
< MCC	36	35	29
>MCC	-	-	8

(Source: SMP Muhammadiyah 2 Gamping)

From table 1 can be seen that most of the scores of Students ' middle semester exam results are still low. There are still many students who have not reached the value of the Minimal submission criteria established by the school of 65. Many factors influence student learning outcomes, especially in mathematics. One of which is where the process of learning to teach in the classroom is followed by students who are inactive in the question and answer activities. Some students are not confident in expressing their opinions. When teachers give questions to the disciples, only a small part is bold to answer the question given.

Plus, most students consider that mathematical subjects are trying so that students following the learning process in class are not interested or indifferent, and some other learners do not follow Learning Mathematics in class. Inappropriate learning models strongly influence students to interest in learning that ultimately impacts the student's mathematical learning outcomes that have not fulfilled the Minimal submission criteria.

To increase student activity in learning that has then impacted students' successful learning outcomes on mathematical subjects is to implement cooperative learning models. Cooperative learning presents a new atmosphere in the learning process from the delivery of material that is usually done by the teacher changed by involving the students as both group and individual tasks. Teachers in cooperative learning play a role as facilitators, moving students to explore information from various sources so that the students' insight is wider.

According to Huda (2014:224), the Talking Stick model of cooperative learning is a model of learning with the help of sticks, who hold the rod obliged to answer the teacher's questions after students learn the subject matter.

According to Isjoni (2011:77), the Make a Match strategy can be done by searching for a partner while learning about a concept or topic in a fun atmosphere.

In research conducted by Obay Sobari (2010), the cooperative learning model for snowball throwing was more effective than talking stick models and Afifah Shafa research. Shelviana (2017) is a model for making match-type cooperative learning more effective than a snowball throwing type cooperative learning model. This study selected cooperative learning type makes a match and talking stick because, based on the research Sidrotul Khasanah (2013) showed that the cooperative learning model of Make a Match type effectively improves student learning outcomes.

The material used in this study was quadrilateral and triangular. This material involves understanding the concept and problem-solving by the purpose of this research. The division of the Sub material used has the same weight, so that it corresponds to the learning model used.

The research aims to: 1) Find out if there is a difference between students ' mathematical outcomes that follow the cooperative learning model of the look-up type (Make a Match) and Talking Stick. 2) know the more effective learning model between the Cooperative learning model (Make a Match) and Talking Stick type in the Mathematics learning results of grade VII students SMP Muhammadiyah 2 Gamping.

METHODS

This research is a type of experimental research. Experimental research is the full approach to quantitative research, meaning it meets all requirements to test causal relationships. Experimental studies directly test the influence of a variable against another variable and test the causal hypothesis. This study implemented a cooperative learning model of the Make a Match and Talking Stick types in mathematics learning to be seen as its influence on students ' mathematical learning outcomes. The study involved two classes, i.e., the experimental class I and the II experimental class. In experimental classes, I was given lessons learned using the Make a Match type cooperative learning model, and in the II experimental class was given learning using the Talking Stick type Cooperative learning model. This research was conducted in SMP Muhammadiyah 2 Gamping Kabupaten Sleman, which is located on Godean Road Km. 5 Desa Sumberarum, Gamping District, Sleman Regency, Special Region of Yogyakarta. The implementation of this research includes the process of learning and retrieval of data conducted in the even semester of 9-17 May 2017 on students of Grade VII SMP Muhammadiyah 2 Gamping Kabupaten Sleman.

The population in this study is a grade VII student at SMP Muhammadiyah 2 Gamping District Sleman, the even semester of lesson 2016/2017 is 108 students who are divided into three classes of classes VII A, VII B and VII C. Sampling on research This was done using the purposive sampling technique of class VII in SMP Muhammadiyah 2 Gamping. Sampling is based on the average value of an even semester VII of SMP Muhammadiyah 2 Gamping class. In this case, there are three classes as a population, while the number of classes to be used for the study of two classes consisting of experimental class I and experimental class II.

The technique used to retrieve the data in this study is by the test method. This test is given to students of experimentation after students are given treatment. These test instruments form multiple choice. The test results are used to learn the students ' learning outcomes on quadrilateral and triangular subject matter. In this research, the instrument used is divided into two types, namely data collection instrument that is about the test of students ' math learning results and instruments for learning devices consisting of the learning and sheet implementation plan Student work. Before the treatment of both classes of experimentation was first conducted homogeneity test, to determine if both classes of experimentation had the same initial ability, the population could be said to be homogeneous. Based on a test of homogeneity obtained $\chi^2_{count} = 0{,}0014$ and $\chi^2_{table} = 0{,}0039$ So it is known that both classes are homogeneous.

RESULTS AND DISCUSSION

The student's mathematical learning test results showed an increase in student's mathematical learning outcomes in both the I and experimental II classes, as summarized in table 2.

Table 2. Summary of value comparison before and after treatment

	Exsp I (Make a Match)	Exsp II (Talking Stick)
Early proficiency		
Mean	38	32
Max	21	20
Min	54	58
<MCC	36	35
>MCC	0	0
Mathematics Learning Results		
Mean	73,9118	66
Max	45	35
Min	90	85
<MCC	8	12
>MCC	27	22

Analysis of the student's mathematical learning outcomes was obtained on average for experimental classes I. The Make a Match type cooperative learning model also increased by 36.0275% to 73.9118, where 77.14% of the number of students has reached Minimal submission criteria. The other 23.529% have not reached Minimal submission criteria. The average experiment class II with cooperative learning models Talking Stick type has increased by 34.235% to 66, where 64.705% of the number of students has reached MCC, and the other 35.29% has not reached Minimal submission criteria. Based on the value of students ' early mathematical skills and the value of students ' mathematical learning outcomes can be seen that there is an increase in student mathematics learning outcomes from both classes of experimentation.

Once conducted hypothesis testing using test-t against the results of learning Mathematics test students acquired $t_{count} = 0{,}2278$ and $t_{table} = 1{,}99601$ so obtained $t_{count} < t_{table}$ means there are no differences in the mathematical learning outcomes of students using the Make a Match type cooperative learning model with a Talking Stick type cooperative learning model. Because of the two-party test results are known that there is no difference between the two models of learning, then there is no need to do the test-t one party. Next to answer the hypothesis is done by comparing both students ' mathematical learning outcomes.

Table 3. T-test result in math learning result value

t_{count}	0,2278
Significant levels	5%
df(n_1+n_2-2)	67
Testing criteria	There is a difference if $t_{count} < t_{table}$
Information	There is no difference

Statistically, it is noted that there is no difference between student's mathematical outcomes taught with a cooperative learning model of Make a Match type with Talking Stick. However, when viewed on a number, it is known that it can increase student learning outcomes. So it is known that both learning models are equally able to improve students ' mathematical learning outcomes.

There is no difference in the value of student math learning results because both of these classes have almost the same average value. Given any learning model, students in both classes are less able to absorb knowledge in classroom learning. A cooperative learning model to make a match and talking

sticks is the same model of cooperative learning that implements the gameplay methods in the learning. In talking stick models and make a match, each student is allowed to brainstorm and actively answer questions from teachers so that each student's achievements are the same, and no students are dominating in learning.

At the time of research in experimental class I, students are enthusiastic and eager to match the card of the answer with his card. Each student competes to find his or her card partner quickly, to earn points. Similarly, in the experimental class II classes that are given the talking Stick learning model, each student follows the lessons happily because of musical accompaniment. Students are also prepared to answer questions that the teacher has given. Each student has its responsibilities for his achievements so that all students are active in the learning process.

Based on the explanation, it can be said that the cooperative learning models of making a match and talking sticks have the same role in enhancing the learning spirit of the students as they progress. This means that both learning models have the same effective level of experimental class I and II experimentation class.

CONCLUSION

Based on the results of the study, the study can be concluded as follows: 1) There is no difference in the value of mathematics learned by class VII A students using cooperative learning model of make A match type and grade VII B students who Using a talking Stick type cooperative learning model. This is demonstrated by a two-party hypothesis test with a significant level of 5% and 67 degrees of freedom, acquired values $t_{count} = 0{,}2278$ and $t_{tabel} = 1{,}99601$, so $t_{count} < t_{table}$ then H_0 accepted and H_1 rejected.

Based on the results of the study, the author submitted the following advice: 1) for schools, this research provides input to the school to always evaluate the learning process that takes place in the classroom to create a learning process that Effective and by the student's conditions to improve the quality of education in schools; 2) For teachers, the results of this study show that the use of cooperative learning models of making a match and talking sticks have the same effective level that researchers suggest teachers can use both learning models or implement a varied, engaging and fun learning model that can improve students mathematical learning outcomes. The author suggests that teachers implement a learning model, especially cooperative.

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