

THE IMPLEMENTATION OF COOPERATIVE LEARNING METHOD OF NUMBERED HEADS TOGETHER (NHT) TYPE TO IMPROVE STUDENT LEARNING ACTIVITIES ON LEARNING MATHEMATICS

Rahmad Novi Dwi Pradana^a, Sunaryo^b

Mathematics Education Program Study FKIP UAD

Jalan Ring Road Selatan, Tamanan, Banguntapan, Bantul Yogyakarta

^arahmadnovi@gmail.com, ^bsunaryo.bener@yahoo.co.id

ABSTRACT

This study was conducted because the students learning activities of seventh-grade students in SMP Muhammadiyah 1 Prambanan academic year 2016/2017 in the learning of mathematics are still lacking. This study aims to increase the students' learning activities in mathematics learning by using the cooperative learning model of Numbered Heads Together (NHT) type on students class VII in SMP Muhammadiyah 1 Prambanan on Even Semester in Academic Year 2016/2017. This study is a classroom action research—the setting using VII B class with number 34 students. The study was conducted two cycles by using a cooperative learning model of Numbered Heads Together (NHT) type. Each cycle is consisting of 2 meetings. Methods of data collection using observation, interview, documentation, and triangulation. Instrument analysis using content validity. The analysis used is descriptive qualitative. The results of this study showed that learning by using cooperative learning model Numbered Heads Together (NHT) type can increase student learning activities in learning mathematics on students class VII in SMP Muhammadiyah 1 Prambanan on even Semester in academic year 2016/2017. These things proven from the observation of student learning activities in learning each cycle has increased. The average observation percentage of student learning activity in cycle I is 51,17% with enough criterion, and in the cycle, II increased to 70,88% with good criterion. The results of interviews with students showed a positive response to student learning activities.

Keywords: CAR, Students Learning Activities, NHT.

INTRODUCTION

Education has an important role in every country. To establish a country, necessary human resources are adequate. Education is also one of the efforts in answering various challenges in the era of globalization as it is today. Mathematics, as one of the school's subjects, plays an important role in shaping the quality of students because it is the basic knowledge of the other sciences. According to Rusefendi quoted in Heruman (2010:1): Mathematics is a symbol language; Deductive sciences that do not accept inductive evidence; Knowledge of the pattern of regularity, and organized structures, ranging from undefined elements to axioms or pest caterpillars, and ultimately to the evidence. Therefore, students need to master mathematics precisely and correctly. However, students' mathematical understanding is still low. Students' participation in mathematical learning is also relatively low because students assume that mathematics is a less exciting lesson. The lack of student understanding and participation in mathematical learning is thought to be due to the teacher's learning model still by conveying the material, giving questions, discussing, and training in front of the class. Also, mathematics learning is still centered on the teacher so that student learning activities are still less optimal.

Cooperative learning is a broader concept encompassing all types of workgroups, including more forms led by teachers or directed by teachers (Agus Suprijono: 2009). According to Roger, in Miftahul Huda (2014:29), cooperative learning is a group learning activity organized by a principle that learning must be based on the social change of information among groups learner in which each learner is responsible for his studies and encouraged to improve the learning of other members. According to Sohimin Aris (2014:108), Numbered Heads Together is a group learning model that each group member

is responsible for the group's work so that there is no separation between the students and the other students in the A group to give and receive each other one. According to Miftahul Huda (2013:203-204), the steps that can be done in implementing cooperative learning model Type Numbered Head Together (NHT) are as follows:

- a. Students are divided into groups.
- b. Each student in the group is numbered.
- c. The teacher gave the task/question in each group to work on it.
- d. Each group began to discuss to find the answers that were deemed most appropriate and ensure that all group members knew the answer.
- e. The teacher calls one of the numbers randomly.
- f. Students with dialed numbers present the answers to their group's discussion results.

The NHT type Cooperative learning Model can encourage students to increase the spirit of cooperation, confidence, and a sense of responsibility so that student learning activities will be more optimal. Paul B. Diedrich, quoted by Oemar (2005:172-173), has several overlapping activities. In this study, three types of activities that are compatible with learning model Numbered Heads Together (NHT) are oral (oral) activities, listening activities, and writing activities because they can develop self-reliance, creativity, and Teamwork to improve learning activities. Based on the background of the problem, identification of problems and limitations of problems, the problem formulation in this research is whether the implementation of cooperative learning model type Numbered Heads Together (NHT) can increase the learning activity of students VII SMP Muhammadiyah 1 Prambanan Kabupaten Sleman school year 2016/2017? The purpose of this research is to increase student learning activities with the implementation of a cooperative learning model type Numbered Heads Together (NHT) in grade VII students SMP Muhammadiyah 1 Prambanan Kabupaten Sleman school year 2016/2017.

METHODS

This research is classroom action research or CAR (Classroom Action Research). The subject in this study was the VII class of SMP Muhammadiyah 1 Prambanan. The objects in this study are students' learning activities after mathematics learning with NHT type learning models. The research procedure used in CAR consists of two cycles. After learning at the cycle I and cycle II stage by using a cooperative learning model of NHT type, researchers act as a teacher. According to Suharsimi Arikunto, DKK (2007:16-20), the activities performed on each cycle are as follows (1) planning, (2) Execution of Actions, (3) Observations and (4) reflections. At this stage of planning, researchers compiled and prepared the following (1) Learning Plan (RPP) (2) Observation sheets of student activity (3) Student interviews At the stage of action, the activities undertaken by the researcher are implementing RPP that has been created that is doing learning with cooperative learning methods type Numbered Heads Together (NHT). The material covered in the lines and angles with the details being as follows (1) on the I cycle discussing the relationship between lines with lines, sense angles, angular units, summation and reduction of angles, and types of angles. (2) Cycle II discusses the interlocking angle, the angle of each other, and the opposite side.

In this class action study, researchers acted as teachers in implementing the learning process using a cooperative learning model of type Numbered Heads Together (NHT) and teachers of mathematical subjects acting as observers/observers. The study was implemented in 2 cycles. Cycle I was implemented in two meetings for the learning process and one meeting for the practice. Based on the results of observation and practice, results found weaknesses to be repaired in Cycle 2. Cycle 2 is performed twice the meeting for the learning process and one meeting for the exercise problem. The process of data retrieval in this research is conducted by conducting mathematics learning activities using a cooperative learning model type Numbered Heads Together (NHT). The data collection techniques used in this study were as follows (1) interviews conducted on several students at the end of the meeting each cycle, (2) observations conducted to know the student's learning activities during the learning process In progress, (3) triangulation is interpreted as combining data collection techniques

from various data collection techniques and existing data sources (Sugiyono: 2015). Triangulation is done by comparing the observation data of students' learning activities, observing the teacher's activities in the implementation of mathematics learning, and the student interview results. Triangulation is used for the evaluation of actions that will be the basis for actions in subsequent cycles.

The data analysis used is descriptive. The activity observation sheet is analyzed by using the formula:

$$P = \frac{nm}{N} \times 100\%$$

Information:

P: Percentage

nm: Number of items Diceklist

N: Number of all items

The criteria of the P-value can be seen in the following table:

Table 1. P-Value Criteria

Percentage (%)	Criteria
$81\% \leq NP \leq 100\%$	Very Good
$61\% \leq NP < 80\%$	Good
$41\% \leq NP < 60\%$	Enough
$21\% \leq NP < 40\%$	Less
$NP < 21\%$	Very Less

(Suharsimi Arikunto dan Cepi Safruddin A.J: 2014)

The success indicator of this research is the learning activity of students in mathematics learning is increasing, which is when the students' activities at least reached a good criterion of $> 60\%$.

RESULTS AND DISCUSSION

The learning that has been done thoroughly on cycle I action and cycle II through the cooperative learning model of NHT type demonstrates an increase in the student learning activity. Increased student learning activities can be seen in the following table:

Table 2. Increased student learning activities based on observation results

No	Observed aspects	Percentage		Information
		Cycle I	Cycle II	
1	Oral activities	33,53%	47,65%	Increased
2	Listening activities	58,82%	89,71%	Increased
3	Writing activities	75,49%	97,06%	Increased
Mean		51,17%	70,88%	Increased

According to table 2, in the oral aspect of the activity, there is an increase from cycle I to cycle II. This is because students have better understand the steps and objectives of learning to become more confident. On the listening aspect of the activity, there is an increase from cycle I to cycle II. This is because students have a sense of responsibility to present their discussion and evaluate other group discussions' results. On the aspect of the writing activity, there is an increase from cycle I to cycle II. This is because students can be more creative in writing the necessary summaries and reports to be stored as learning materials that are easy to understand.

In the cycle, I, the criterion of submission, is enough, with a percentage of 51.17%. There is an increase in cycle II with good satisfaction criteria at a percentage of 70.88%. There is an increase from cycle I to cycle II. On the aspect of oral activity (oral) still have not achieved good criteria on cycle II with details on cycle I with a percentage of 33.53% with fewer criteria and cycle II with a percentage of 47.65% with sufficient criteria. However, in those activities, there was an increase from cycle I to cycle II. On the aspects of writing activities and activities are also improved and achieving the criteria well once on cycle II. Based on the observation data that has been increased and the conclusion of the

interview with students and teachers, the learning objective has been achieved in cycle II, so the research is considered complete. The results showed an increase in student learning activities in mathematics learning using the Numbered Heads Together (NHT) cooperative learning model.

CONCLUSION

Based on the results of the class action study using cooperative learning model type Numbered Heads Together (NHT) in grade VII B students in the middle of SMP Muhammadiyah 1 Prambanan Kabupaten Sleman, 2016/2017 school year can be concluded that :

There was an increase in activity after using a cooperative learning model type Numbered Heads Together (NHT) on math learning. This is demonstrated based on the results of the observation sheet, the percentage of students ' learning activity in cycle I is 51.17% with sufficient criteria. There is an increase in student learning activities in cycle II, with a percentage of 70.88% with good criteria.

Mathematics learning using the Numbered Heads Together (NHT) Cooperative learning model received positive responses from students and teachers. Students feel drawn so that student learning activities on mathematical learning are increasing. The teacher gave a good response and considered the cooperative learning model type Numbered Heads Together (NHT) worthy of later learning. This is evident from the results of the interviews of students and teachers.

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