

THE EFFORT TO IMPROVE THE MATHEMATICS LEARNING RESULT THROUGH COOPERATIVE LEARNING MODEL OF LEARNING TOGETHER (LT) TYPE FOR SMP N 1 RAKIT

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ABSTRACT

The conventional method in learning mathematics made the students passive to comprehend especially for the students 8 grade of SMP N 1 Rakit District of Banjarnegara. The purpose of this research was to improve the mathematics learning result of students through learning together (LT) type from the cooperative learning model. This research was Class action research (CAR). The subjects of this study were the first semester of eighth-grade students of SMP Negeri 1 Rakit in the academic year of 2016/2017 about 30 students. The object of this study was a cooperative learning model of learning Learning Together (LT) type. The data were collected through observation, interview, and final test cycle. The analysis of the data was used by descriptive qualitative data analysis. The results showed that the learning of mathematics through while of cooperative learning model of learning together (LT) type can improve students' mathematics learning results. This can be seen from the improvement score. In the first cycle, Most of the students got 72 by the percentage of students completed amount to 56.667%. it increased in the second cycle to 81.884 score with the percentage of students completed an amount about 96.667%.

Keywords: *Learning result, Improvement, Cooperative learning model of Learning Together(LT) type*

INTRODUCTION

Education is a very important element to create quality resources, intelligent, peaceful, open, democratic, and able to compete and can improve the welfare of all citizens of Indonesia. With quality human resources expected to be able to face various changes and challenges of globalization that are currently and will occur, therefore educational programs should always be reviewed and improved. In line with the pace of development and change that affects the development of the field of education, we need professional educators who can carry out teaching and learning in accordance with existing standards. A profession can be said to be professional if it has taken sufficient education to fulfill its professional competence (RI Law, 2005: 6).

Learning and Learning are activities that can not be separated by every learning process anywhere. Good mathematics learning is learning that emphasizes more on concepts and on memory. According to Ennis (1996: 10), "... the concept has been served to remind us there is more to learning than the replication of facts and figures". So this opinion can be understood by emphasizing more on the concept and not on memory or memorization as a reference to assess mathematics as a benchmark for students' abilities.

Mathematics is the science of numbers, the relationship between numbers, and operational procedures used in solving problems regarding numbers (body.kemdikbud.go.id). From this understanding can be taken a few words such as "operations that are used in solving problems" and can be concluded that mathematics is a science that can be used by humans for benefit in various fields, as well as science and technology (Science and Technology). According to Thurstone in Azwar (2006: 22) abilities can be divided by several types such as Arranging Chicago's primary ability test and outlining the six capability factors namely; 1) Verbal: An understanding of the relationship of words, vocabulary, and mastery of oral communication. 2) Number: Accuracy and speed in using basic calculation functions. 3) Spatial: The ability to recognize various relationships in a visual form. 4) Fluency Word: The ability to quickly digest certain words. 5) Memory: The ability to remember pictures, messages, numbers, words, and pattern shapes. 6) Reasoning: The ability to draw conclusions from several examples, rules, or principles.

Factors that support students' abilities are forms of ability related to some form of accuracy and speed in the use of basic arithmetic or mathematical numerical abilities. When combined with the ability

to remember, then this ability can reveal one's intellectual abilities, especially the ability to reason and count logically. Next with the calculations in mathematics students need to understand the problem is verbal ability according to Mashooque (2010: 34) letter symbols have meanings and interpretations that depend on the problem situation. The opinion above explains that the symbols or letters are included in the problems faced by students.

The use of learning models is one way the teacher provides a more interesting KBM process to improve student mathematics learning outcomes. The use of conventional learning models where this learning model is commonly used by teachers causes students to feel passive, with most students only being centered on the teacher. In this type of cooperative learning model Learning Together (LT) emphasizes a learning model where students will be divided into various groups/teams that are paired with students who work in groups of 4 or 5 heterogeneous people handling certain tasks then the teacher gives a discourse or material each student to read and make a summary. The teacher appoints students who act as speakers.

The shortcomings of the mathematics learning outcomes of these students are explained in the data of mathematics learning outcomes for semester 1 of UAS grade VIII SMP N 1 Raft obtained by one of the ways namely conducting personal interviews with the teacher concerned. Seen in table 1.1 with UAS questions given by subject teachers.

Table 1. UAS grade grades VIII A students

Class	VIIIA	VIIIB	VIIIC	VIIID
Student scores	52.75	68.83	58.80	59.33

SMP N 1 Raft sets the minimum completeness criteria for mathematics subjects in class VIII to 70, the explanation of grade VIII A as the object of research has a value of 64.75. To further explore the problem of low student mathematics learning outcomes, researchers conducted observations with mathematics subjects in class VIII SMP N 1 Rakit. The results of observations made by researchers get a learning model that still uses conventional learning models. Thus researchers conducted research with the cooperative learning model type Learning Together (LT) which is expected to achieve the objectives of the problem, especially in improving mathematics learning outcomes.

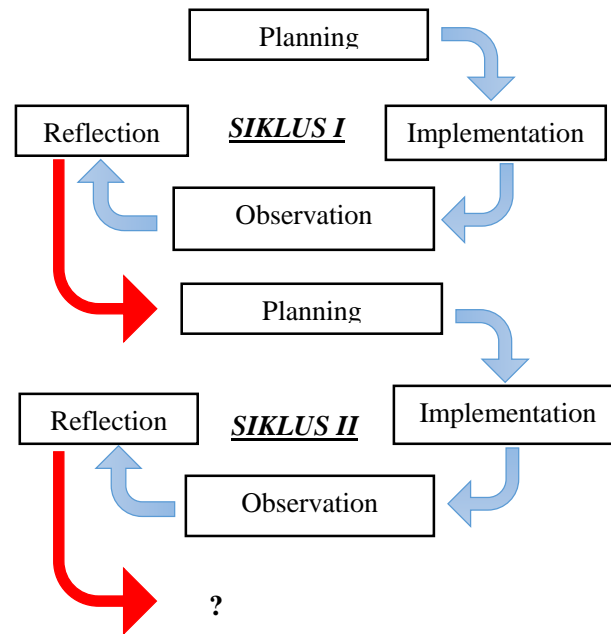
From the description above, the authors are interested in conducting research with the aim to improve student learning outcomes through a cooperative learning model that is more based on the type of Learning Together (LT) class VIII students of SMP N 1 Rakit Banjarnegara district in the 2016/2017 school year.

METHODS

This type of research is a classroom action research (CAR) or Classroom Action Research, research conducted by teachers as well as collaborating with researchers in the classroom using the way of designing, implementing collaborative action-reflection aimed at improving or improving the quality of a learning process in class. According to Arikunto (2010: 4) Classroom Action Research is "an activity that is raised with the intention to improve the classroom learning situation which is the core of educational activities". Researchers collaborated with mathematics teachers in class VIII SMP N 1 Rakit Banjarnegara district. This research was conducted using the Classroom Action Research approach which has been carried out consisting of 2 cycles each cycle carried out with the changes achieved. The subjects of this study were students of class VIII A of SMP N 1 Rakit 2016/2017 school year. While the object in this study is the LT type of cooperative learning model. the number of students in class VIII A is 30 students consisting of 14 male students and 16 female students.

This study refers to the Classroom Action Research Suharsini Arikunto, Suhardjono and Supardi (2010: 18) which includes the stages of planning, action, observation (observation) and then reflection. The nature of this research was the extent to which the improvement in mathematics learning outcomes of students of class VIII A of SMP N 1 Rakit in LT type cooperative learning models. this is illustrated by the CAR step model by Suharsimi Arikunto.

CLASSROOM ACTION RESEARCH MODEL



Arikunto(2010:17)

In detail the class action research procedures are described as follows:

1. Cycle I

a. Planning

In cycle I, the activities carried out in the action plan are as follows:

- 1) Arrange Learning Implementation Plan (RPP) with the type of cooperative learning model LT, as a guide in implementing the program.
- 2) Compile test questions made by researchers and teachers concerned

b. Action Implementation

Researchers carry out learning by applying the LT type of cooperative learning model based on the RPP that has been prepared in the planning stage.

c. Observation (observation)

Observations were carried out before and during implementation in an effort to monitor and efforts to determine the course of learning and the implementation of learning with the cooperative type LT model.

d. Reflection

The implementation of this reflection is based on the results data obtained by students during the observation and implementation of the action then the researcher and the teacher discuss and analyze the test, the teacher's observations and the results of student observations that have been done. Reflection aims to evaluate the learning process that has been done in the first cycle in order to find out the results of student mathematics learning.

2. Cycle II

a. Planning

Cycle II is an improvement to the implementation of mathematics learning using the LT type of cooperative learning model from cycle I activities.

b. Implementation

The actions in the second cycle in the research plan are not much different from the actions in the first cycle, except that in the second cycle, it would further improve student mathematics learning outcomes.

c. Observation (observation)

Observations in cycle II are almost the same as observations of cycle I. Observations were made by researchers to determine the course of learning.

d. Reflection

At this stage, the researcher analyzes and concludes the data obtained during the second cycle learning with data from the teacher observation sheet, student observation sheet, and the final cycle II test.

The instruments used in this study were observation, interviews, and tests, while the research procedures and methods used by researchers were descriptive quantitative and quantitative descriptive. The data obtained from the research will be calculated and continued to calculate the average value of students. To find the average percentage of test scores using the following formula:

Percentage of mathematics learning outcomes obtained from:

$$p = \frac{f}{N} \times 100\%$$

Information :

p = percentage rate

f = number of scores obtained

N = ideal score (sum of all items)

RESULTS AND DISCUSSION

1. Cycle Class, I Action Research

Before the study began, researchers identified problems that occurred in class VIII A by reflecting on the learning process that had been done by researchers. The use of observations made by researchers becomes the basic material for conducting research, with initial conditions that students value is less than the ability limit by conducting initial tests, researchers find various deficiencies obtained from conventional learning models and this impacts on student mathematics learning outcomes.

The action plan implemented in this cycle is to develop a learning scenario. The action plan in cycle I am to compile learning steps in the form of lesson plans, compile observation and assessment instruments, compile teacher and student observation sheets. The implementation of actions in cycle 1 is divided into 3 meetings. The first meeting was held on Friday 22 July 2016, the second meeting was on Saturday 23 July 2016 and on 29 July 2016 each with an allocated time of 2 x 40 minutes or two hours of study.

At the end of the learning activity, students are individually assessed by the teacher when the teacher finishes assessing the worksheets given by the teacher with the same questions as the worksheets so that students will repeat what problems exist in the worksheets and know how to solve the problem in a row. The teacher gives motivation to the group and each individual student who is not good to be better, the teacher and students ask questions to correct the misunderstanding, provide reinforcement and inference. In the closing activity, the teacher and the students conclude the material that has been learned and students are given homework (homework) to be done individually.

Table 2. Results of the first cycle of student test analysis

	Highest value	Lowest value	Average
Test score for cycle I	90	33	72

From the data obtained can be clarified that there are students who are complete and incomplete. Criteria for students who have finished learning in accordance with KKM from SMP N 1 Raft are 70 and students are said to be complete when they have met the KKM that is already in the school. Based on the test results at the end of the first cycle, the results have not yet been maximized so that teachers and researchers reflect on the results of observations and will continue in the second cycle.

Success:

- a) In cycle I student learning outcomes have begun to rise.
- b) By using the LT type cooperative learning model students are more interested in discussing.
- c) Students are more enthusiastic and enthusiastic about participating in learning.

Weaknesses:

- a) The teacher does not motivate students in learning and is not evenly distributed in guiding the whole group so that not all students are involved in group activities;
- b) In learning students are often busy themselves with the teacher observing other groups;
- c) The formation of groups which is very time-consuming makes groups not heterogeneous so that it adds a negative impact to the researcher.

2. Cycle Class II Action Research

In the first cycle of mathematics learning which consists of 2 times of learning and 1 time of the test, it appears that the results of learning mathematics students who are not in accordance with KKM is equal to the many deficiencies in the learning activities of mathematics so that it continues on the research activities in cycle II where the implementation is directly on the day after the first cycle test was conducted on July 29, 2016 the next activity will use the LT type cooperative learning model. Based on the results of reflection, the implementation of the first cycle of action has not yet reached the established indicators of success, so the researcher together with the observer plans the second cycle. Weaknesses and shortcomings in Cycle I will be corrected in Cycle II. Things that need to be done in order to correct weaknesses and shortcomings in cycle I to be corrected in cycle II.

The implementation of actions in cycle 2 is divided into 3 meetings. The first meeting was held on Saturday 30 July 2016, the second meeting was on Monday 5 August 2016 and 3 meetings on Thursday 6 August 2016 each meeting with a time allocation of 2 x 40 minutes. After the group work activity is continued the exercises in the form of problem solving and math questions given by the teacher in the worksheet given by the teacher. Observation activities on the research object were carried out directly, while the learning outcomes that had been calculated by the researcher were as follows:

Table 3. The results of the analysis of students' second cycle tests

	Highest value	Lowest value	Average
Test score for cycle II	98	63	81,884

From these data, students can be clarified into a group that has finished learning. The criteria for students to complete learning are apparent from the completeness of students' mathematics learning outcomes with the above learning outcomes value from the KKM set by the school. Based on the results of observations of students in the second cycle, it was concluded that the learning process had proceeded in accordance with the objectives and based on observations and interviews conducted at the end of the second cycle and then used as a reference for the success of the teacher and students in learning the following advantages and disadvantages were obtained:

Success:

- a. In cycle II students' mathematics learning outcomes have improved.
- b. By using the LT type cooperative learning model students are more interested in discussing.
- c. Students are more enthusiastic and enthusiastic in participating in learning

Weaknesses:

- a. In learning students often busy themselves with the teacher observing other groups;
- b. Forming a group that is very time-consuming makes groups not heterogeneous so that it adds negative impacts to researchers.

Thus the researcher and collaborator draw the conclusion: through the use of the LT type cooperative learning model can improve the learning outcomes of students in grade VIII-A of SMP Negeri 1 Rakit on the Algebra material for the 2016/2017 school year.

DISCUSSION

Hasil penelitian tindakan kelas yang terdiri dari siklus I dan siklus II mengenai pembelajaran matematika menggunakan model pembelajaran kooperatif tipe LT menunjukkan adanya peningkatan hasil belajar matematika siswa. Hal ini terlihat dari hasil tes yang dilakukan disetiap akhir siklus mengalami peningkatan dan dari hasil analisis pada lembar observasi pada setiap pertemuan juga menunjukkan adanya peningkatan pembelajarn yang lebih aktif.

Pada siklus I, proses pembelajaran matematika berjalan dengan baik tapi belum optimal karena siswa perlu menyesuaikan pembelajaran yang baru untuk mudah diterima oleh setiap anak. Perubahan model pembelajaran konvensional menjadi model pembelajaran berbasis kelompok atau model pembelajaran kooperatif tipe LT mengalami kekurangan dengan pengkodisian siswa yang lebih lama sehingga hampir sebagian waktu hanya terkuras oleh penglompokan ini. Kemudian dilihat dari tes siklus I yang dilaksanakn pada pertemuan ke tiga siklus I diperoleh nilai tertinggi sebesar 90, nilai terendah sebesar 33 dan rata-rata hasil belajar adalah 72.

Pada siklus II setelah melakukan perbaikan pada kekurangan yang direfleksikan oleh peneliti menunjukkan peningkatan pada hasil belajar matematika siswa. Siswa terlihat antusias dan lebih aktif dalam proses pembelajaran, baik dalam aktif berdiskusi dan bertanya pada guru maupun temannya. Selain itu semua siswa dapat berkerjasama dengan kelompoknya untuk mengerjakan soal pada waktu berdiskusi. Pada tes siklus II nilai tertinggi sebesar 98, nilai terendah sebesar 63 dengan rata-rata ketuntasan belajar adalah 81,884.

CONCLUSIONS

The results of classroom action research conducted between Mathematics teachers and collaborator teachers can be concluded as follows:

- 1) Through the use of the LT type cooperative learning model can improve student mathematics learning outcomes in cycle I, an average of 72 is obtained by increasing cycle II by 81,884.
- 2) Learning mathematics using the LT type cooperative learning model gets a positive response from students, which means students can receive well and are active in learning takes place. This is evident from the results of student interviews at the end of the cycle which shows positive results.

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