

**IMPROVEMENT OF PARTICIPATION IN MATHEMATICS
LEARNING BY USING COOPERATIVE LEARNING MODEL
TYPE OF LEARNING TOGETHER TO STUDENT IN GRADE
VII B OF AL-ISLAM 1 JUNIOR HIGH SCHOOL OF
SURAKARTA ACADEMIC YEAR 2012/2013
(Classroom Action Research)**

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ABSTRACT**IMPROVEMENT OF PARTICIPATION IN MATHEMATICS LEARNING BY
USING COOPERATIVE LEARNING MODEL TYPE OF LEARNING
TOGETHER TO STUDENT IN GRADE VII B OF AL-ISLAM 1 JUNIOR HIGH
SCHOOL OF SURAKARTA ACADEMIC YEAR 2012/2013
(Classroom Action Research)**

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This research aims to know the improvement of student's participation in mathematics learning by using cooperative learning model type Learning Together. This research used a qualitative approach by the design of Classroom Action Research (CAR), which is implemented in two cycles. Each cycle has two meetings. Researcher and mathematics teacher grade VII B of Al Islam 1 Junior High School of Surakarta as the subject of the action. The number of students of grade VII B is 25 students as subject that receive the action. Data collection techniques are used: observation, interview, field notes, tests, study document. The data analyzed by descriptive qualitative with three components, there are data reduction, data presentation and data conclusion. Based on the research results it can be concluded that the application cooperative learning model type of Learning Together can improve student's participation in mathematics learning of students grade VII B. It can be seen from several indicators, namely: 1) Actively Involved, increased from 25% to 80%; 2) Asking Questions, increased from 12% to 60%; 3) Proposing Opinion and Advice increased from 8% to 48%; 4) Answering Questions, increased from 16% to 64%; 5) Performance Of The Group On Time, increased from 34% to 100%.

Keywords: *Participation of students, Mathematics learning; Cooperative learning model, Learning together*

1. INTRODUCTION

Everyone wants to be successful in working out an activity, including successful in teaching and learning activities. Success criteria are used to guide each person different. Teachers will feel successful if the learning process in the classroom running smoothly. While the learning outcomes or achievements as a bonus for success in the learning process.

The learning process is currently more likely to be less cooperative. Students spend more time to learn on their own, causing gaps in the understanding of each. In addition, learners are less honed his ability when they learn on their own without engaging argument. It would be different, if the teachers use cooperative learning method in the classroom.

Education in Indonesia is still dominated by the belief that knowledge is a set of evidence and facts to be memorized by each learner. Classes are focused on the teacher as the primary source of knowledge. Teachers still use the lecture method as the top choice for learning activities. More learning activities demonstrate the transfer of knowledge or concepts presented by the teacher to the learner.

On the other hand researcher has also observed the math teachers at Al-Islam 1 Junior High School of Surakarta one that has been used for the PPL. Basically, teachers want to engage students in learning, both in the presentation or group discussion, the teacher makes a combination of several methods of learning such as lectures, discussion, presentation groups and discussion groups. The combination is expected to create more student participation in the learning process. But there are still shortcomings that arise in the field.

From the above observations the researchers found that students with low ability get negative feedback in their academic endeavors, while students with high ability get better feedback from teachers and peers. In addition, students who have high ability of compete only with those who are also highly skilled. This difference is makes less students participate in the process of learning. Lack of student participation in the learning behavior of students between such as just 6 students (25%) actively involved, 3 students (12%) asked, 2 students (8%) have

put propose opinions and advice, 4 students (16%) lacking in answering questions, the performance of the group is not timely. In addition, children seemed embarrassed to ask or answer questions that can not actively participate in learning activities.

Winkle (2005: 276) explains that participation includes a willingness to actively observe and participate in an activity, it expressed willingness to provide a reaction to stimuli presented.

Robert E. Slavin (2008: 48-56) explains that the model of cooperative learning type of Learning Together *a la* David and Roger Johnson is probably the most widely used of all cooperative methods, and has been evaluated in a large number of studies. Studies of the Learning Together models without individual responsibility often fruitless different. One study conducted by Johnson, Johnson & Scott (1978) found a significant difference to the individualistic.

The result of the study by Nesrin ÖZSOY and Nazli YILDIZ (2004) conclude that : 1) It was observed that learning together technique of cooperative learning method is more effective than traditional method in maths teaching of primary school 7th class. 2)It was noticed that the level “which is concerned with improvement his achievement in maths” of the students in the experiment group “in which learning together technique of cooperative learning method is applied” is higher than the level of the students in the control group “in which traditional teaching method is applied.

Based on the explanation, there needs to be improvement of participation in mathematics learning. One of effort that concern teacher is learning method that used, because it will affect to the students’s participation in learning. To increase the participation of students, mathematics teacher should need to use the learning cooperative methods. Through the implementation of cooperative learning type of Learning Together, as expected can improve student participation.

The purpose of this research is to improve participation of students in mathematics learning in grade VII B of Al Islam 1 Junior High School of Surakarta by using cooperative learning type of Learning Together.

2. LEARNING METHODS

The research conducted at AL-ISLAM 1 Junior High School of Surakarta grade VII B in academic year 2012/2013 by the number is 25 students. The time for research activities carried out in February 2013. The researcher served diagnose, make a concept and action design with mathematics teacher.

This research applies action research class (Classroom Action Research). According Rochiati Wiriaatmadja, (2007: 13), action research is how a group of teachers to organize their teaching practice conditions and learn from their own experience, they can try out some ideas for improvement in the learning process, and see the real effect of that effort.

Classroom Action Research conducted by researcher, teacher and principals in the classroom for perceiving problems faced by researcher and the teacher aims to solve problems that arise in the classroom is student participation is low. Implementation of these actions is carried out by the researcher with the help of the mathematics teacher collaboratively.

This research consists of several phases of activities, included 1) Knowing Problems Phase, 2) Preparation Actions Phase, 3) Action Planning Phase, 4) Measuring Implementation Phase, 5) Observation and Interpretation Phase, 6) Reflection Phase, 7) Report Preparation Phase (conclusion). Exposure Classroom Action Research results are brought together with a description of the problem, formulation of the problem, objectives and assessment theory. The conclusion of the result of increased learning mathematics process, namely improve the student's participations in mathematics learning.

Data collection techniques used in this research included : 1) observation, 2) interviews, 3) field notes, 4) tests, and 5) documentations to get optimal results. This study used data triangulation technique to keep the validity of the data. Analysis of the data in this study starts from the beginning to the end of data collection (analysis of process and product). Data analysis conducted on each data collected by either quantitative data or qualitative data. Quantitative data analyzed by the percentage (%), that is simplest quantitative. Qualitative data analyzed by

make qualitative category. Over all, the data from the research field is processed and analyzed descriptively qualitatively.

Technical qualitative analysis refers to the analysis model Miles and Huberman (1992: 16-19) were conducted in three sequential components are: 1) Data reduction which includes the selection of data through strict selection, through summary or brief description, categorization it in a wider pattern, 2) Presentation of data is done in order to organize the data that constitute a systematic compilation of information from the data reduction starting from planning, implementation, observation and reflection on the actions of each cycle, 3) Inferences or verify a quest for the meaning of the data, noting the regularity and classification data. The collected data is presented in a systematic and meaningful.

3. RESEARCH RESULT AND DISCUSSION

The effort to increase the students' participation in learning mathematics that was conducted by implementation of cooperative learning model has been done. Improvement process is conducted between researcher and teacher through the implementation of cooperative learning model type of learning together.

Learning Together in general can be described as follows: teachers motivate students to interdependence with each other in a positive, mutually interacting, has the responsibility of individual and social conduct group work. For example, students ask questions of the teacher will be returned to the group to find the answer. Assessment will be based on individual performance and success of the group, but individuals and groups do not compete with each other (no competition between groups).

Improvement of participation in learning math using cooperative learning model type of Learning Together conducted in two cycles. Each cycle consists of four stages: (1) planning, (2) the implementation of the action, (3) observation, (4) analysis and reflection. Each cycle consists of two meetings with each meeting time is 2 x 40 minutes.

Teacher should be able to find a minimum capacity of students (basic competencies) developed from learning the subject matter. Furthermore, from the basic competencies acquired, will be described some of the indicators that the learning material. So it can be concluded that the activity and participation is an emphasis on learning competencies, where the process is carried out by cooperative learning model type of learning together emphasizing the achievement of a goal (indicator) desired.

Improvement of student's participation in this research can be observed through observations from the following table:

Table 1. Improvement Table Of Participation

No	Indicators	Number Of Students			
		Cycle 1 st		Cycle 2 nd	
		First Meeting	Second Meeting	Third Meeting	Fourth Meeting
1.	Actively Involved	9	15	21	20
2.	Asking Questions	12	11	13	15
3.	Proposing Opinion And Advice	6	5	10	12
4.	Answering Questions	8	12	17	16
5.	Performance Of The Group On Time	4	4	3	5

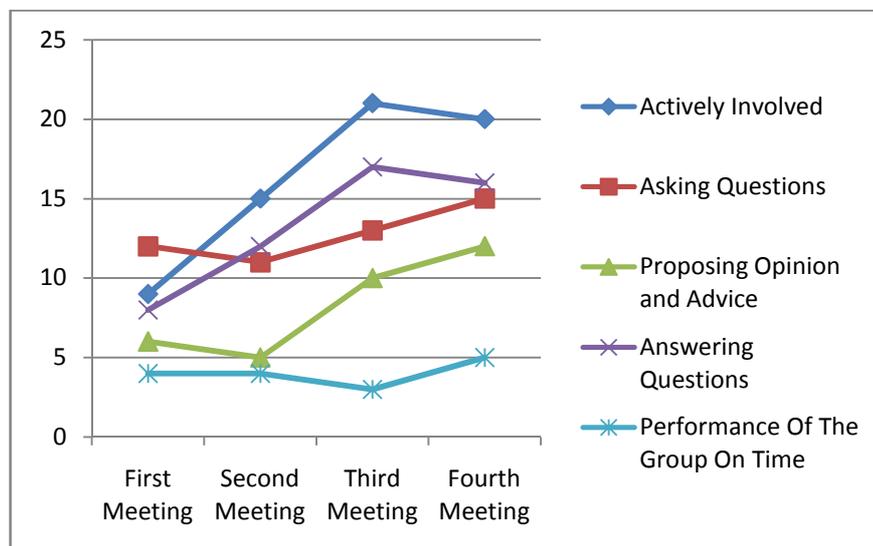


Figure 1. Improvement Graph Of Participation

The existence of these indicators of success will be the reference if this research is successful or not. Indicators of success are to have the percentage to be

achieved by the participation of researcher in each indicator. Here is a table of indicators of success:

Table 2. Indicators of Success

No	Indicators	Before	After (Successfully)
1.	Actively Involved	25%	75%
2.	Asking Questions	12%	50%
3.	Proposing Opinion And Advice	8%	45%
4.	Answering Questions	16%	55%
5	Performance Of The Group On Time	34%	100%

Table 3. Improvement Percentage Of Each Indicators

No	Indicators	Improvement Percentage			
		Cycle 1 st		Cycle 2 nd	
		First Meeting	Second Meeting	Third Meeting	Fourth Meeting
1.	Actively Involved	36%	60%	84%	80%
2.	Asking Questions	48%	44%	52%	60%
3.	Proposing Opinion And Advice	24%	20%	40%	48%
4.	Answering Questions	32%	48%	68%	64%
5.	Performance Of The Group On Time	80%	80%	60%	100%

The table above shows the results of observations during classroom action research. Using cooperative learning model type of Learning Together on Mathematics has been proven to improve student participation. Here is an explanation of each indicator:

- 1) Indicator of Actively Involved on the first meeting are 9 students (36%) improve in the second meeting become 15 students (60%), then increased again in the third meeting of as many as 21 students (84%) but decreased in the fourth meeting to 20 students (80%). Nevertheless, indicator participation of Actively Involved is successful. Because at the fourth meeting of Cycle II, the percentage of participation's indicator is greater than of the indicators of success. That is $80\% > 75\%$.
- 2) Indicator of Asking Questions at the first meeting are 12 students (48%) but decrease in the second meeting to be 11 students (44%), then improve again in the third meeting to be 13 students (52%) increased again at the

fourth meeting to be 15 students (60 %). Indicator participation of Asking Questions is successful. Because at the fourth meeting of Cycle II, the percentage of participation's indicator is greater than percentage of the indicators of success. That is $60\% > 50\%$.

- 3) Indicator of Proposing Opinion And Advice in first meeting are 6 students (24%) but decreased in the second meeting to 5 students (20%), then increased again in the third meeting to be 10 students (40%) increased again at the fourth meeting of to 12 students (48%). Indicators participation of Proposing Opinion and Advice is successful. Because at the fourth meeting of Cycle II, the percentage of participation's indicator is greater than the indicator of success. That is $48\% > 45\%$.
- 4) Indicator Answering Questions in the first meeting are 8 students (32%) improve in the second meeting to 12 students (48%), then increased again in the third meeting to 17 students (68%) but decreased in the fourth meeting to 16 students (64%). Nevertheless, the participation indicator of Answering Questions is successful. Because at the fourth meeting of Cycle II, percentage of participation's indicator is greater than the indicator of success. That is $64\% > 55\%$.
- 5) Indicator of Performance Of The Group On Time in the first meeting by 4 groups of 5 groups (80%) in the second meeting did not have increased and decreased, then declined in the third meeting into 3 groups of 5 groups (60%) but increased in the fourth meeting to 5 groups of 5 groups (100%). Indicators participation of Performance Of The Group On Time is successful. Because at the fourth meeting of Cycle II, the percentage of participation's indicator is greater than or equal to indicator of success is $100\% \geq 100\%$.

HM. Suyadi (2010: 4-5) describes the steps the type of cooperative learning Learning Together. The steps of the type of cooperative learning Learning Together is as follows: 1) Teacher present instructional materials, 2) Students in heterogeneous groups of four to six people working on a worksheet, 3)Teacher

assess the work of the group, 4) Teacher gives quiz is done individually and assessed as a result of the individual work.

After the action research, that was using cooperative learning model type Learning Together, students' participation in mathematics learning has increased. This increase was based from an increasing number of students who participated in accordance with the indicators of participation. Besides an increase in student participation is also influenced by the formation of a heterogeneous group. The establishment of the group formed by the teacher based on test scores at a previous meeting. Students that are difficult to understand the material may be assisted by a friend in their own group.

Presentations were made each group can also lead to self-confidence of students, so that students are not shy when answering questions posed by other groups. Therefore, when the discussion each student must participate to do the worksheet together because each student is required to understand the material. This is so that students can participate during the presentation.

Learning Together has a stage that can spur students more active i.e. have two tasks to be done. The task group has to be worked together and individual tests. Any student who does not understand the material well and right, they will participate to ask things that are considered difficult to be able to work on individual tests.

Increasing the participation of each indicator occurs because some of the following reasons:

1. Actively Involved

This indicator of participation can increase because in each group there are students who are smart or have a high capacity, so that more students are active, either in groups or as a presentation.

2. Asking Questions

In accordance with the opinion Winkle (2005: 276) explains that "Participation includes the willingness to actively observe and participate in an activity, it expressed willingness to provide a reaction to stimuli presented". So, this indicator of participation can also increase due to the material to draw angles

and split corners at every encounter increasingly difficult. Therefore, the teachers also give incentives in the form of sample questions so difficult that students are encouraged to ask questions about things that have not understood for the time of the individual tests can do.

3. Proposing Opinion and Advice

This Indicator of participation can increase because each group was required to propose their opinions and advice to other groups during the presentation. In addition, students have effort to make other group better in their presentation.

4. Answering Questions

This indicator of participation can increase because students feel curious, so they can give presentations and work on individual test well. In addition, teachers also promised additional value if students brave for asking question.

5. Performance Of The Group On Time

Indicators of participation can be increased due to positive interdepedention i.e. the students work together to achieve group goals. This is in accordance with the opinion of Robert E. Slavin (2008: 250) about the four elements outlined in the Learning Together. One of these elements is a positive interdepedention.

4. Conclusion

The conclusion of this research is through the use of cooperative learning model type of Learning Together on Mathematics learning resulted in improvement student participation shown by the increasing number of students actively involved, want to ask, propose opinions and advice, answer questions, and performance groups on-time in grade VII B Of AL-ISLAM 1 Junior High School of Surakarta academic year 2012/2013 as follows:

1. Actively Involved increase of (55%). That is before using the cooperative learning model type Learning Together (25%), improved after using the cooperative learning model type Learning Together to be (80%).
2. Asking Questions increase of (48%). That is before using the cooperative learning model type Learning Together (12%), improved after using the cooperative learning model type Learning Together to be (60%).

3. Proposing Opinion And Advice increase of (40%). That is before using the cooperative learning model type Learning Together (8%) increase after using the cooperative learning model type Learning Together to be (48%).
4. Answering Questions increase (48%). That is before using the cooperative learning model type Learning Together (16%), improved after using the cooperative learning model type of Learning Together to be (64%).
5. Performance Of The Group On Time increase of (66%). That is before using the cooperative learning model type Learning Together (34%), improved after using of cooperative learning model to type of Learning Together to be (100%).
6. By using cooperative learning model type Learning Together, the student's participation can be improved.

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