IMPROVE MATHEMATICAL LEARNING ACTIVITIES THROUGH THINK PAIR SHARE (TPS) COOPERATIVE LEARNING MODELS OF STUDENTS IN CLASS VIIIC OF SMP NEGERI 1 SELOMERTO WONOSOBO

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ABSTRACT

This reasearch was conducted because of the low activity of student learning in mathematics at school. For that it need an efforts to improve students' learning activeness. This study aims to improve the activeness of mathematics learning in sudent of class VIIIC of SMP Negeri 1 Selomerto Wonosobo through Think Pair Share (TPS) cooperative learning model of semester II in academic year of 2015/2016. This reasearch was a classroom action research consisted of two cycles. The subject of this research is class VIIIC of SMP Negeri 1 Selomerto Wonosobo in academic year of 2015/2016. While the object under study is the effort to increase the activity of learning mathematics through cooperative learning model TPS. Instruments used observation sheet and questionnaire. Data were analyzed using data reduction, data presentation, and conclusion triangulation. The results showed that the learning model TPS can increase the activeness of mathematics learning for students in class VIIIC in second semester of SMP Negeri 1 Selomerto Wonosobo in the academic year of 2015/2016. Percentage activity of learning mathematics increased each cycle. In the first cycle with an average of 49.74% with a criterion being, in Cycle II was increased so that the second cycle the average percentage of 65.97% with high criteria.

Keywords: *activeness, learning model, think pair share*

INTRODUCTION

Basically education is centered on the activeness between teachers and students. Activity is defined as a thing or situation where students can be active. The activeness of students in the learning process can develop critical thinking patterns and can help students solve problems in daily life. Many factors cause the quality of education not to experience a significant increase, one of which is the approach used in the classroom has not been able to create optimal conditions for the ongoing learning. According to UU RI number 20 of 2003 article 1 paragraph 20 Learning is the process of interaction of students with educators and learning resources in a learning environment.

To create a learning atmosphere that can improve student learning activity, the right learning model must be chosen. The learning model is a pattern that is used as a guide in planning group learning and tutorials (Suprijono, Agus, 2015). According to the Direktorat Pendidikan Dasar dan Menengah (2010), the activeness of students in learning can be seen simply from student efforts, namely: student learning enthusiasm, student interaction with teachers, interaction between students, student interaction with learning resources, collaborating in groups, student activities in groups and participate in the learning process.

Cooperative learning is a group learning activity organized by a principle that learning must be based on changes in social information among learning groups in which each learner is responsible for his own learning and encouraged to improve the learning of other members (Huda, Miftahul, 2015). Whereas according to Aryawan, Bambang (2009) Cooperative learning model allows all students to master the material at the level of mastery that is relatively the same or parallel. Such employment relationships allow positive perceptions of what students can do to achieve successful learning based on their individual abilities and contributions from other group members during group learning. To achieve maximum results, five elements of mutual cooperation learning models must be applied, namely: positive interdependence, individual responsibility, face to face, communication between members, group process

evaluation. One of the cooperative learning models also emphasizes student learning activeness namely learning model Cooperative Think Pair Share (TPS).

Think Pair Share (TPS) according to Shoimin, Aris (2014) is a cooperative learning model developed by Frank Lyman, where learning begins with the teacher asking questions for students to think about, then the teacher asks students to pair up to discuss the answers that have been thought before and the results of the discussions that have been obtained are ended by presenting them in front of the class towards other couples, in this activity it is hoped that question and answer can occur which encourages the construction of knowledge integratively. This learning model can arouse students' enthusiasm by involving students to be active in the learning process.

According to Suprijono, Agus (2015) TPS is learning that begins with the teacher asking questions or issues related to lessons to be considered by students, then the teacher asks students to pair up. Couples are given the opportunity to discuss. From the discussion, it is expected to deepen the meaning of the answers that have been thought through subjective with their partners. The results of the inter subjective discussion in each pair of results were discussed with the pairs of the entire class.

Whereas according to Huda, Miftahul (2015) TPS is a simple method first developed by Frank Lyman of the University of Maryland. First of all, students are asked to sit in pairs. Then, the teacher asks them one question / problem. Each student is asked firsthand thinking about the answer to the question, then discusses the results of his thoughts with the pair next to him to get a consensus which if they represent the answers of both of them. After that the teacher asks students to share, explain, or describe the results of the consensus or the answers they have agreed on to other students in the classroom.

Lie, Anita (2008) states the advantages and disadvantages of the TPS model are as follows:
Strengths: increasing student participation in learning, suitable for simple assignments, giving more opportunities to contribute to each group member, interacting between younger couples, making it easier and faster to form groups.
Disadvantages: more groups will report and need to be monitored, fewer ideas emerge, if there is a problem there is no mediator.

The purpose of this study was to improve the active learning of mathematics students of class VIIIC of SMP N 1 Selomerto Wonosobo through theTPS Cooperative learning model in the second semester of theacademic year of 2015/2016. The hypothesis in this study is to use the TPS learning model can increase the active learning of students of mathematics.

METHODS

The type of research conducted is Classroom Action Research. According to Arikunto, Suharsimi (2010) classroom action research is an examination of learning activities in the form of an action that is deliberately raised and occurs in a class together. This study was planned as many as three cycles, by applying the TPS type cooperative learning model.The subjects studied were students in class VIIIC of SMP N 1 Selomerto Wonosobo in second semester in the academic year of 2015/2016 with a total of 24 students. While the object under study is an effort to improve the active learning of mathematics mathematics through the TPS cooperative learning model. The procedure of research carried out in classroom action research stages must be called a cycle. The cycle in this study consisted of planning, observation, reflection (Arikunto, Suharsimi, 2010). The planned cycle is three cycles in detail in the steps in each cycle as follows:
Cycles I and II conducted include:

1. Planning:
    a) Conducting observations regarding the condition of the school, class conditions, conditions of the students, supporting infrastructure and strategies used in learning,
    b) Making lesson plan for four times meeting with the circle material and its elements, determine the value of phi, calculate the circumference and area of the circle,
    c) Make student worksheet for each meeting,

d) Arrange and prepare observation sheets in the form of observation sheets to observe the active learning of mathematics students ,
e) Arrange interview guidelines for observers and students to find out the responses of observers and students about the TPS learning model.

2. The action is carried out in accordance with the lesson plan which has been compiled by the learning process using the TPS cooperative learning model.
3. observation : When the learning process of mathematics by using the cooperative learning model TPS the researcher is assisted by two observers with the teacher making observations, and recording the activeness of students' mathematics learning by filling in the observation sheet of the active learning of mathematics students.
4. Reflection: At this stage the researcher performs data processing, data validation is based on the data obtained when at the observation stage and conducts discussions with partner teachers to consider the good or bad actions that have been taken, and formulate the planning formulation of actions to be taken on next cycle.

In this study, data collection techniques carried out were observation, interviews, and tests. While the research instrument is a tool used in data collection. The research instruments used included: observation sheet, interview sheet, and instrument validity.

Data analysis conducted in this study is to examine all available data from various sources, namely observation sheets, interviews. The analysis technique is carried out, namely:

1. Data reduction is done to select data that is suitable with the purpose of the study so that the data collected is more focused and easier to manage,
2. Presentation of data is done to organize data which is a systematic compilation of information from data reduction starting from planning, implementation of actions, observation and reflection so as to make it easier to read and understand data,
3. Triangulation of data is interpreted as a technique of collecting data that is related to various existing data collection techniques and data sources,
4. Drawing conclusions is giving meaning to data obtained from data presentation. Drawing conclusions is based on the results of all data obtained.

Percentage of sheet scores on the activeness of student mathematics mathematics learning can be calculated using the formula:

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

P : Percentage
nm : the number of items checked list
N : number of all items
(Slameto, 2001)

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

Table 1. Criteria for Value P

Precentage	**Critesia**
80% ≤ P < 100%	Very high
60% ≤ P < 80%	High
40% ≤ P < 60%	Medium
20% ≤ P < 40%	Low
0% ≤ P < 20%	Very low

(Riduwan, 2012)

RESULTS AND DISCUSSION

Research carried out in each cycle includes four components, namely planning, implementing learning, observation and reflection. The results of class action research in this study are as follows:

From the observations of student learning activeness in the first meeting and second meeting of Cycle I can be seen in the following table

Table 2. Average Percentage of Mathematical Learning Activity of Cycle I Students

No	Indicator	Cycle II		Average	Criteria
		First	Second		
1	Enthusiastic students in attending the lesson	90,63%	86,46%	88,55%	very high
2	Student and teacher interaction	48,96%	66,67%	57,82%	Medium
3	Interaction between students	28,13%	36,46%	32,30%	Low
4	Group collaboration	40,63%	45,83%	43,23%	Medium
5	Student activities in groups	47,92%	47,92%	47,92%	Medium
6	Deliver the results of the discussion	22,92%	34,38%	28,65%	Low
Average				49,74%	Medium

From the table above shows the percentage of mathematics learning activities of class VIII C students by 49.74% in the medium criteria and there is no indicator of learning activeness of students who reach high criteria other than the enthusiasm indicator number of students in attending the lesson. Based on observations in the field in general, the following results are obtained: students are less daring to ask questions and answer teacher questions because of shame, some students do not express and explain their opinions and do not respond to their friends' opinions because they are not brave and afraid to be blamed, and students do not conclude, respond and perfecting conclusions because students are accustomed to being listeners so they wait for the teacher to conclude. Furthermore, planning is made to improve the results of observation data obtained in Cycle I to be carried out in Cycle II.

From the observation results of student learning activeness in the first meeting and second meeting of Cycle II can be seen in the following table:

Table 3. Average Mathematics Learning Activity Percentage of Students in Cycle II

No	Indicator	Cycle II		Average	Criteria
		First	Second		
1	Enthusiastic students in attending the lesson	85,42%	91,67%	88,55%	very high
2	Student and teacher interaction	72,92%	75,00%	73,96%	High
3	Interaction between students	47,92%	89,58%	68,75%	High
4	Group collaboration	54,17%	55,21%	54,69%	Medium
5	Student activities in groups	54,17%	58,33%	56,25%	Medium
6	Deliver the results of the discussion	52,08%	55,21%	53,65%	Medium
Average				65,97%	High

From the table above shows the percentage of mathematics learning activities of class VIII C students by 65.97% in high criteria. Based on observations in the field in general, the following results are obtained: some students do not answer the questions of group mates or other groups because they do not understand the questions asked, some students do not respond to peer questions or opinions and explain their opinions or work because embarrassed students will be laughed at accustomed to being a listener. The average percentage of learning activeness of students gets 65.54% which is in the high category so learning mathematics using cooperative learning models TPS is stopped in Cycle II.

Based on the research that has been done starting from cycle I and cycle II regarding learning mathematics using the TPS cooperative learning model shows an increase in the activeness of students in mathematics learning. This can be seen from the analysis of the observations of the activeness of students in Cycle I, and Cycle II which has increased.

The average percentage of student activeness indicators in Cycle I for students' enthusiasm in attending classes was 88.55%, interaction between students and teachers was 57.82%, interaction between students was 32.30%, group collaboration 43.23%, student activities in groups 47.92% and student participation in delivering the discussion results of 28.65%. So that there are no indicators that have reached high criteria unless the enthusiasm of students follows the pathways that have reached very high criteria.

In Cycle II after correcting the deficiencies found in Cycle I, student activity increased. This is seen from the number of students on the observation sheet has increased, and the percentage of each indicator increases even though there is still one indicator that has not reached high criteria. In Cycle II the average percentage of student activeness indicators for student enthusiasm in attending the lesson amounted to 88.55% student and teacher interactions 73.96%, interactions between students 68.75%, group collaboration 54.69%, student activities in groups 56 , 25% and student participation in delivering the results of the discussion of 53.65%. the study was stopped in Cycle II. Analysis of the percentage of observation results of student activity in Cycle I and Cycle II can be seen in Table 4 below:

Table 4. Analysis of Observation Results The Activity of Learning Mathematics of Students Each Cycle

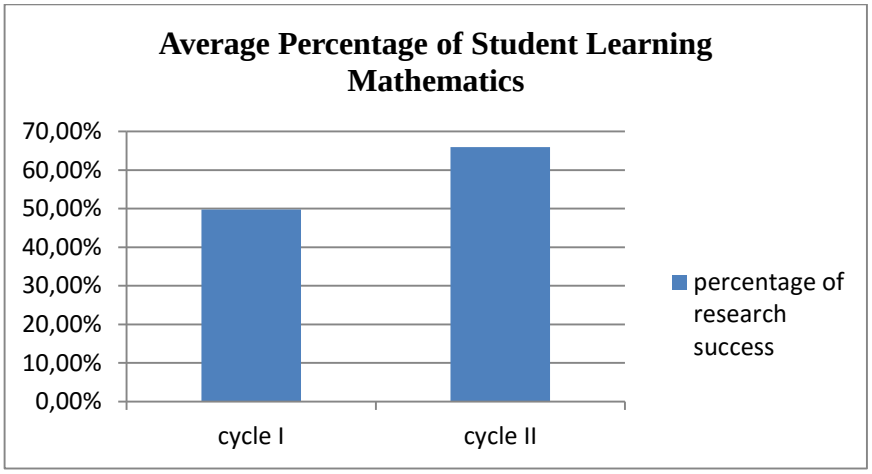
No	Indicator	Cycle I	Cycle II	Information
1	Enthusiastic students in attending the lesson	88,55%	88,55%	Stabile
2	Student and teacher interaction	57,82%	73,96%	Increase
3	Interaction between students	32,30%	68,75%	Increase
4	Group collaboration	43,23%	54,69%	Increase
5	Student activities in groups	47,92%	56,25%	Increase
6	Student participation in delivering the results of the discussion	28,65%	53,65%	Increase

The percentage of research success is seen from the overall average observation results of student learning activeness.

Table 5. Average Percentage of Active Learning of Student Mathematics

Cycle	Percentage	Criteria
I	49,74%	Medium
II	65,97%	High

For more details, it will be presented in the following graph:



Picture 1. Graph of average percentage of student learning mathematics

Overall it can be concluded that mathematics learning using the cooperative learning model Think Pair Share can be used as an effort to improve the learning activeness of class VIII C students of SMP Negeri 1 Selomerto Wonosobo in even semesterin teh academic year of 2015/2016 and get positive responses from students and teachers. Thus the hypothesis of action has been proven.

CONCLUSION

Based on the results of the study using the cooperative learning model think pair share, it can be concluded that it can increase the active learning of mathematics students of class VIII C in SMP Negeri 1 Selomerto in Wonosobo in the second semester of the academic year of 2015/2016 with elemental material and a circle section. This can be seen from the indicators as follows:

1. The percentage of mathematics learning activeness in Cycle I with an average of 49.74% with moderate criteria, in Cycle II it increased so that in Cycle II the average percentage was 65.97 % with high criteria,
2. The activity of learning using the cooperative learning model think pair share gets a positive response from students based on the results of the interview.

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