EFFORTS TO IMPROVE MATHEMATICS LEARNING ACTIVITIES USING THE EVEN COOPERATIVE LEARNING MODEL TYPE JIGSAW OF STUDENT SMP IN CLASS VII-E

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ABSTRACT

Teacher-concerned learning students resulted in less active participation in learning mathematics. It is necessary to attempt to improve students learning activities. This study aims to improve mathematics learning activities using the cooperative learning model type of Jigsaw in class VII-E in State Junior High School (SMP Negeri) 1 Imogiri Bantul Regency of even semester year academic 2018/2019. This study was a classroom action research that consists of two cycles. This study's setting was students class VII-E of even in SMP Negeri Imogiri Bantul regency academic year 2018/2019. The method of collecting data used observation and interviews. The research instrument used an observation sheet and interview sheet. The test instrument used instrument validity and analysis of data used qualitative descriptive analysis. The results showed that the Jigsaw could improve mathematics learning activities in students class VII-E of even semester in SMP Negeri 1 Imogiri Bantul regency academic year 2013/2014. This is evident from the observation of student's mathematics learning activities, and the average test scores have increased in each cycle. This can be seen from the average percentage of learning interactions in cycle I of 77,32 % with the right criteria increased in Cycle II, amounting to 85,34 % with very good criteria.

Keywords: activities, learning models, Jigsaw

INTRODUCTION

Mathematics is an important subject, but many students think that mathematics is a complicated and dull subject. Therefore, the teacher's teaching and learning process can be done by applying a learning atmosphere to make students enthusiastic and happy in learning mathematics. Based on the results of observations made by researchers on October 23, 2018, at SMP Negeri 1 Imogiri, Bantul Regency showed the attitude of students who were less active in participating in mathematics learning. Students lack interaction with the teacher or with fellow students. Student participation in concluding the results of the discussion is also still lacking. Also, it appears that the teacher uses learning models that do not support student learning activities.

Based on the results of interviews with mathematics teachers, the material taught by teachers is often not well received by students. Students are still challenging to understand the teacher's material, so they need repetition on every material taught. Students are more dominant in listening to the teacher's explanation and recording what the teacher wrote on the board. When the teacher asks a question, only a few students actively answer, and other students tend to be quiet. The results of learning mathematics, especially in class VII-E are also still low. The low completeness and learning outcomes are shown from the acquisition of the Midterm score in the 2018/2019 school year.

Student mathematics learning outcomes can be maximized in various ways, one of them by maximizing the learning process well. To overcome this, the teacher must make students active and interested in learning mathematics. One way to overcome this is by creating exciting teaching and learning conditions that allow students to be more active and creative. Students can build their knowledge and understanding from their learning environment. Good learning conditions can be created using an exciting learning model that is cooperative. Isjoni (2010: 77) states that Jigsaw cooperative learning is one strategy that can encourage active students and achieve maximum achievement. According to Lie in Rusman (2016: 218) Jigsaw cooperative learning model is a model of cooperative

learning by way of students learning in small groups of four to six people who have different assignments and students work together on positive interdependence and responsibility independently.

METHODS

This research activity took place at SMP 1 Imogiri, Bantul Regency, Academic Year 2018/2019. The activities carried out in the framework of this thesis research, taking the research setting class VII-E with a total of 29 students by applying the Jigsaw type cooperative learning model to improve student mathematics learning activities. Classroom Action Research (CAR) includes four steps, namely: Planning, acting, observing, reflecting (Arikunto, 2014: 17-20). Classroom action research procedures were carried out in two cycles. The research instruments used were: (1). Student Worksheets (LKS) contain comparative material, sample questions, and practice questions, (2). Student interview guidelines are a guideline when interviewing students to obtain data on student learning activities, and (3) Observation sheet, which contains notes describing how students carry out learning activities during class learning. Data collection techniques, namely: interviews and observations. Analysis of the data used includes observation data analysis, data reduction, triangulation, data display, and concluding. Indicators of success of this study if the learning activities are obtained with good minimal criteria.

RESULTS AND DISCUSSION

Learning activities consist of two cycles. In cycle I was carried out in two meetings, and cycle II was carried out in one meeting. This is done, hoping that the actions taken in learning will result in minimal, suitable learning activities. Every action is carried out by applying the Jigsaw type of cooperative learning model. At each meeting, an action is taken to correct the deficiencies that existed in the previous meeting so that the action is more directed towards increasing student learning activities and student understanding of the subject matter delivered.

During the implementation of learning takes place, it has been observed the interaction of student learning activities. Observations were made by three observers, with each observer observing two groups, each group consisting of four and five students. The results of student learning interactions for two cycles obtained the following results.

Table 1. Increased Cycle I and Cycle II Student Activities

Indicator	Cycle I	Cycle II	Information
Enthusiastic students participate in learning	77,59 %	89,66 %	Increase
Student interaction with the teacher	72,41 %	83,62 %	Increase
Interaction between students	84,48 %	88,78 %	Increase
Group collaboration	82,62 %	87,07 %	Increase
Student activities in groups	77,59 %	86,21 %	Increase
Student participation in concluding the results of the discussion	71,56 %	76, 72 %	Increase
Average	77,3 %	85,33 %	Increase

Data on the results of the learning activities above, if critiqued or categorized using table 2, the student learning activities obtained in cycle I and cycle II, respectively, with active criteria.

Table 2. Activity Value Criteria

Percentage	Category
PAS < 60 %	Not active enough
60 % ≤ PAS < 70 %	Quite active
70 % ≤ PAS < 85 %	Active
PAS ≥ 85 %	Very active

Source: Jurnal Yasifati Hia (55:2013)

In cycle I**,** Before starting learning, the teacher has made preparations by preparing: Lesson Plan, Student Worksheet with comparative subjects, quiz questions, observation sheets, and student

interview guidelines. In the implementation of learning, the teacher motivates students to be active during the learning process. The teacher tells the students to sit according to the group. Teachers carry out learning by the steps of the Jigsaw cooperative learning model. The implementation of this learning has received a good response from students because, based on the interview results, the students said they could be actively involved with implementing the Jigsaw type cooperative learning model and could work together in groups. From the results of observations in the first cycle, it was found that some students were less enthusiastic in participating in the lesson, lack of questions and answers between students and teachers, students tended not to ask friends in a group and only waited for answers from their friends. Part of the students also did not do the group work and did not express their opinions, and most students did not come to conclude the results of the discussion. From the observation, results have been strengthened with data from student interviews, which in general obtained the results that some students are still confused with the Jigsaw type cooperative learning model because they are not accustomed to, but feel happy with the learning methods used because they can work together in groups. Before proceeding to the second cycle, a reflection of the cycle I was conducted between the teacher and three observers, and the results were obtained: The teacher advised the students to be more enthusiastic in participating in learning; approach students who are embarrassed to ask questions and entice students to ask questions and answer teacher questions; directing students to work on group assignments and not hesitate to ask friends when having difficulties; directing students to collaborate with group friends actively and prioritizing group discussions if experiencing difficulties; encourage students to enhance group activities further; encourage, so students want to conclude the results of the discussion with confidence.

In Cycle II, The deficiencies found in cycle I have been corrected in cycle II activities. The planning stage, in the planning cycle II activities, carried out making: lesson plans, quiz questions, worksheets, observation sheets, and student interview guidelines. The action phase gives direction and guidance to each group that has difficulty in completing the worksheet. Provide adequate direction and guidance to each group that has difficulty in completing the worksheet. Students who ask researchers are not immediately answered by giving their answers, but researchers ask students to ask friends in their groups first. Suppose the researcher cannot then provide critical questions to understand better in one group of students. The implementation of learning still uses the Jigsaw cooperative learning model. Observations were carried out during the activity of learning. From the observations, there has been an increase in student learning activities. Students have begun to ask the teacher if there is a subject matter that is not yet understood. Students who do not understand the material they have not learned do not ask questions directly by the teacher but have asked their group's friends questions. Students are also very excited when learning is characterized by when students are in the expert group increasing the number of students who express their opinions each other and when returning to the original group, students are more confident to explain what is gained in the discussion in the expert group so that cooperation in completing the worksheet seen. The classroom atmosphere also seemed calmer compared to meetings in the first cycle. The learning activities went well because students began to get used to the Jigsaw type cooperative learning model. Students agree with applying the Jigsaw cooperative learning model to increase student learning activities and make learning more enjoyable, and the material is easily accepted clearly. The reflection obtained from the implementation in this second cycle is that students' learning mathematics activities using the Jigsaw type cooperative learning model have increased. Some students still tend to directly ask the teacher without discussing it first with members of the group. Increased student learning activities can be presented in the following graphical form.

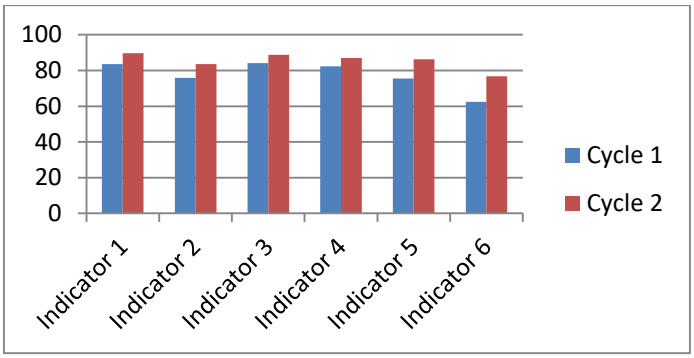

Figure I. Increased student learning activities

From the graph above, it can be seen that indicators of student learning activities have increased. From the results of this study, it can be said that the application of the Jigsaw cooperative learning model can increase student learning activities on comparative material.

CONCLUSION

The results showed that the Jigsaw type cooperative learning model could increase student learning activities in math subjects in class VII-E even semester in SMP Negeri 1 Imogiri, Bantul Regency in the 2018/2019 academic year material. This can be seen from the average percentage of student learning activities in the first cycle of 77.87% with good criteria increasing in the second cycle of 85.34% with very good criteria. Learning by applying the Jigsaw cooperative learning model gets a positive response from students.

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