

## IMPROVING MATHEMATICS LEARNING ACTIVITIES USING STUDENT TEAMS ACHIEVEMENT DIVISION OF COOPERATIVE LEARNING MODEL

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### ABSTRACT

The Teacher-centered learning results in students for being less active in responding to the teacher explanations. Therefore, there is a need for efforts to improve students learning activities. This study aims to improve mathematics learning activities using student teams achievement division (STAD) type of cooperative learning. This research was included in the classroom action research consisting of two cycles. The settings in this study were the students of class VII C in the second semester SMP Negeri 1 Imogiri Bantul in the academic year of 2018/2019, with 32 students consisting of 12 male students and 20 female atudents. The research used observation and interviews as the data collection method. The research instrument used in the form of an observation sheet and interview guidelines. The test of the research instrument is the validity test. The researcher used descriptive and qualitative methods to analyzed the datas. The results showed that using using student teams achievement division (STAD) type of cooperative learning model could improve mathematics learning activities of students of class VII C in the second semester of SMP Negeri 1 Imogiri Bantul in thr academic year of 2018/2019. This is evident from the results of observation of mathematics learning activities of student who experience an increase in earch cycle. In the first cycle the percentage of students mathematics learning activities was 40.95% with sufficient criteria. In the second cycle the percentage of students mathematics learning activities was 79.427% with good criteria. From the result of the interview it is obtained information that in general students are interested and feel happy in mathematics learning using student teams achievement division (STAD) type of cooperative learning model.

**Keywords:** activity, learning model, student teams achievement division (STAD)

### INTRODUCTION

Learning is doing and at the same time is a process that makes students must be active (Sardiman, 2011: 99). Because students must be active in getting something new knowledge and the teacher only provides a reference or aids, all of this shows that students who are active in learning to dominate activities are students. The activities in question are both physical and mental, they must always be related. For example, someone is learning by reading. Physically someone is reading a book but maybe their mental thoughts and traits are not fixed on the book. If this is the case, then learning will not be optimal.

Based on the author's observation, information was obtained that in general the learning activities of Imogiri 1 Public Middle School were still low. The low learning activities of these students are also influenced by the lack of mastery of knowledge in mathematics learning, as a result students feel bored in attending mathematics lessons, students tend to do other activities that are more interesting to students' attention. There are factors that make students bored following learning they assume that mathematics subjects are difficult subjects. So that student interaction, cooperation with friends and student activities are less involved. In addition, students also feel embarrassed to express their opinions and ask their teachers and friends when they don't understand. With learning that is still teacher-centered, student activities become difficult to develop in learning.

In relation to the above problems, changes need to be made in the implementation of the learning approach. The activity of students during learning needs to be directed at positive things. Student activities in learning need to be improved so students can concentrate fully during learning. According to Djamarah (2010: 372) The active role of students in learning is very important. In essence, learning is indeed an active process of learning that builds its thoughts and knowledge. In the process of learning to teach mathematics, the teacher must also be able to increase mathematics learning activities in thinking and acting. With fun learning mathematics activities, the possibility of mathematics learning will be more

memorable and thought out, processed and then issued again in different forms, such as asking questions, doing assignments, presentations, and so on. Cooperative learning is a learning model where students learn and work in small groups collaboratively whose members are 4-6 people with a heterogeneous group structure. Slavin in Isjoni, (2016: 12).

The learning model that will be applied in this study is the cooperative learning model type STAD (Student Teams Achievement Divisions). According to Slavin in Isjoni, (2016: 51) the cooperative learning model type STAD (Student Teams Achievement Divisions) is a cooperative type that emphasizes the activity and interaction between students to motivate each other and help each other in mastering the subject matter in order to achieve maximum achievement. According to Shoimin, Aris (2014: 189) that the cooperative learning model type STAD (Student Teams Achievement Divisions) has advantages that include: Students work together in achieving goals by upholding group norms, active students helping and motivating enthusiasm to succeed together, Actively acting as peer tutors to further enhance group success, inter-student interactions along with increasing their ability to argue and improve individual skills.

In the STAD learning model (Student Teams Achievement Divisions) students have many opportunities to express opinions, and manage information obtained and can improve communication skills, group members are responsible for the success of the group. From the implementation of this learning, it can be seen student learning activities which include:

- a. Enthusiasm of students in participating in learning
  - 1) Students pay attention to the teacher's explanation
  - 2) Students do not do other work
  - 3) Spontaneous students work when given assignments
  - 4) Students are not affected by situations outside the classroom
- b. Student and teacher interaction
  - 1) Students ask the teacher
  - 2) Students answer teacher questions
  - 3) Students use the teacher as resource persons
  - 4) Students use the teacher as a facilitator
- c. Interaction between students
  - 1) Students ask friends in a group
  - 2) Students answer friends' questions in one group
  - 3) Students ask friends in other groups
  - 4) Students answer friends' questions in other groups
- d. Group collaboration
  - 1) Students help friends in groups who encounter problems
  - 2) Students ask for help from friends if they have problems
  - 3) Students match the answer in one group
  - 4) The division of tasks in groups
- e. Student activities in groups
  - 1) Students express their opinions
  - 2) Students respond to peer questions / opinions
  - 3) Students work on group assignments
  - 4) Students explain their opinions / work
- f. Student participation in concluding the results of the discussion
  - 1) Students refer their hands to conclude
  - 2) Students respond to questions / conclusions of their friends
  - 3) Students perfect the conclusions expressed by their friends
  - 4) Students respect the opinions of their friends

(Directorate of High School Development, 2010).

Based on the description above then the aim of this research is to improve mathematics learning activities using student teams achievement division (STAD) type of cooperative learning model. By result this research is hoped can give students with more experience learning so that they can enjoy leaning.

## METHODS

This study is a Classroom Action Research (CAR). In this classroom action research, research is the executor. Implementers convey learning objectives and provide an introduction to the topics that will be discussed in learning. This research was conducted in two cycles. Cycle I and cycle II were carried out each in two meetings.

This research was conducted at SMP N 1 Imogiri 1, Bantul regency. The settings used are class settings in the mathematics teaching and learning process conducted in class VII C in March-April 2019 with a total of 32 students consisting of 12 male students and 20 female students. In each cycle in the study includes four components, namely planning, implementation, observation, and reflection. In this classroom action research, research is the executor. Implementers convey learning objectives and provide an introduction to the topics that will be discussed in learning. Data collection methods used are observation and interviews. The research instrument used was in the form of an observation sheet and interview guidelines. The test of the research instrument is the validity test. Data analysis using descriptive and qualitative methods to determine the criteria for the level of student learning activities during learning.

## RESULTS AND DISCUSSION

In this classroom action research activity the researcher acts as the teacher carrying out the learning process using cooperative learning models type STAD (Student Teams Achievement Division). This research was conducted in 2 cycles. Cycle I and cycle II were carried out each in two meetings. Learning activities are carried out according to the schedule of mathematics class VII C.

During the mathematics learning activities using the STAD type cooperative learning model (Student Teams Achievement Division) carried out observations about student learning activities. The learning activity data is then analyzed to determine whether there is an increase in student learning activities on Mathematics subjects. The results of observations for two cycles of student learning activities are shown in Table 1 below.

Table 1 Increased Learning Activity of Students in Cycles I and II

<b>Learning Activity Indicator</b>	<b>Cycle I</b>	<b>Cycle II</b>	<b>Description</b>
Enthusiasm of students in participating in learning	46,094%	82,812%	Increased
Student and teacher interactions	44,531%	82,812%	Increased
Interaction between students	38,672%	76,172%	Increased
Collaboration group	44,531%	81,641%	Increased
Student activities in the group	36,719%	80,078%	Increased
Student participation in concluding the discussion	35,156%	73,047%	Increased
<b>The average percentage of student learning activities</b>	<b>40,95%</b>	<b>79,427%</b>	<b>Increased</b>

The results of the average percentage of student learning activities in Table 2, are then critiqued or categorized using Table 2.

Table 2. Activity Value Criteria

Score Interval	Criteria
$80\% \leq p < 100\%$	Very Good
$60\% \leq p < 80\%$	Good
$40\% \leq p < 60\%$	Enough
$20\% \leq p < 40\%$	Less
$0\% \leq p < 20\%$	Less Once

(Arikunto, Suharsimi, 2009: 35)

After the data in Table 1. categorized using Table 2. the results obtained in the first cycle of 40.95% including the sufficient category and in the second cycle amounted to 79.427% including the good category. To see an increase in each indicator from Cycle I to Cycle II can be seen in Figure 1

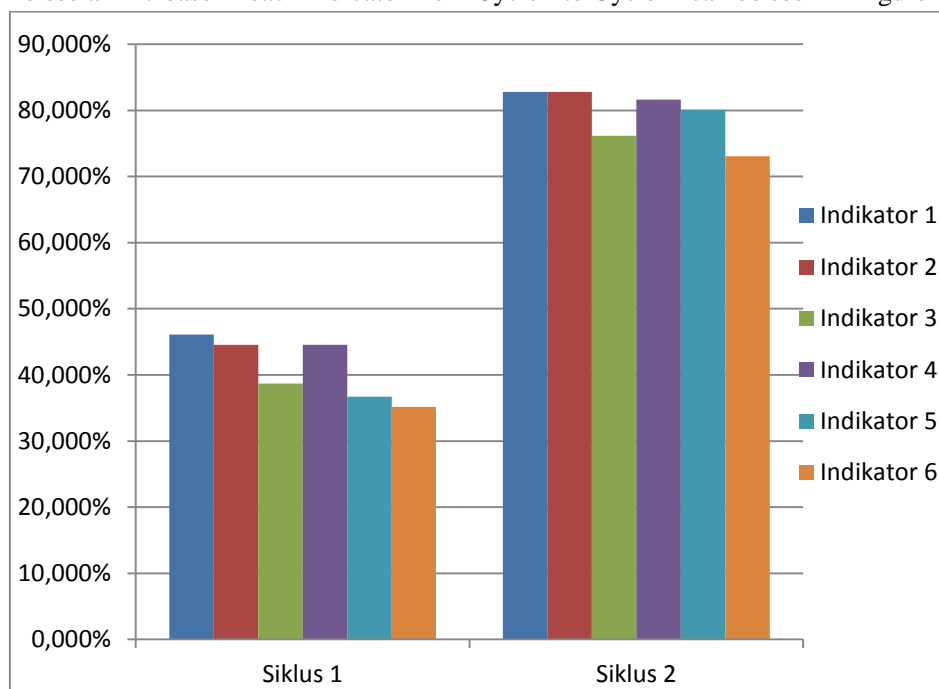


Figure 1. Percentage of Mathematics Learning Activities

Based on the results of observations in the first cycle of the mathematics learning process using the type of cooperative learning model STAD (Student Teams Achievement Division) has not run smoothly because students need adjustment with the researcher. Based on the results of observation, students' enthusiasm in participating in learning, student interaction with teachers, and group collaboration were good enough. While student interaction between students, student activity in groups and student participation in concluding the results of the discussion is still lacking. This is because most students do not have the courage to ask questions or respond to researchers' questions, students tend to be quiet and only pay attention to the responses of their friends who participated in mathematics learning, the average percentage of student activity in the first cycle is 40.95% with criteria enough.

In the second cycle, the results of the observation showed that the students' enthusiasm in participating in the learning was very good, the interaction between students and researchers was very good, the interaction between students was good, group collaboration with student activities in the group was very good, student participation in summarizing the results was good. This is because all students have been able to receive the guidance of researchers compared to previous meetings. Students look

enthusiastic and enthusiastic when attending learning. When there is unclear material, students ask the researcher to repeat it again and they are very concerned about the explanation of the researcher. Based on the results of observations at the time of mathematics learning the average percentage of student learning activities in the second cycle was 79.427% with good criteria.

In this study, in addition to using observational data researchers also used data in the form of interviews conducted with representatives of students of class VII C at the end of cycles I and II. Interviews were conducted to determine students' responses regarding mathematics learning using the STAD type cooperative learning model (Student Teams Achievement Division) and student activities when learning took place. Student responses to mathematics learning using the cooperative learning model type STAD (Student Teams Achievement Division) are very good, this can be seen from the results of interviews with representatives of students of class VII C.

Based on the results of the interview obtained the following results:

1. Positive responses from students to mathematics learning using the STAD type cooperative learning model (Student Teams Achievement Division).
2. STAD type cooperative learning model (Student Teams Achievement Division) can improve student learning activities in the process of learning mathematics.
3. When using the STAD type cooperative learning model (Student Teams Achievement Division), students become more enthusiastic in learning mathematics. Math learning activities are more fun and easier.
4. Mathematical learning using the STAD type cooperative learning model (Student Teams Achievement Division) can be used as a reference and input in the learning process to improve mathematics learning activities for students.

From the overall data above the research objectives have been achieved in the second cycle with an average percentage of student learning activity observations amounting to 79.427% with good criteria, so that researchers can be considered completed and the results of the study show an increase in learning activities of class VII C students in the even semester Imogiri 1 Public Middle School Bantul Regency 2018/2019 school year using the STAD type cooperative learning model (Student Teams Achievement Division). Thus, the action hypothesis is proven.

## CONCLUSION

Based on the research that has been carried out on class VII C even semester in Imogiri 1 Public Middle School, Bantul Regency, 2018/2019 academic year on the quadrilateral subject and can be concluded that by using the cooperative learning model STAD type (Student Teams Achievement Divisions) can increase activity student learning.

This is evident from the percentage of student learning activities experienced an increase in each cycle. In the first cycle the average percentage of observations of student learning activities amounted to 40.95% with sufficient criteria. In the second cycle the average percentage of the results of observation of student learning activities increased to 79.427% with very good criteria. This means that students who do a lot of activities when learning takes place, the higher the level of students' understanding of the material being taught.

Mathematical learning using the cooperative type STAD model (Student Teams Achievement Division) received a positive response from students. This is evidenced from the results of student interviews, broadly speaking that the cooperative learning model STAD type (Student Teams Achievement Division) can improve student learning activities, students become more enthusiastic in learning mathematics, mathematics learning activities also become more fun and easier. So that this learning model can be used as a reference and input in the learning process as a variation so that students are not saturated and certainly can improve student learning activities.

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