

The Effect of Cooperative Learning Models of Teams Games Tournaments (TGT) Types On Motivation and Mathematical Learning Results

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Abstract

This study was to determine the effect of TGT type cooperative learning on mathematics learning motivation of grade 3 students of SD N Jaban Sleman in 2018-2019. This type of research is PTK which is carried out collaboratively and participatively. This research was conducted in 3 cycles with the subject of this study, namely all students in grade 3 of SD N Jaban Sleman in 2018/2019 which meant 24 students. Appropriate data collection techniques. Data from circles is analyzed using specified guidelines and references. The results of the study showed that TGT cooperative learning consisting of presentation step classes, study groups, games, tournaments and groups, could increase students' motivation and learning outcomes in mathematics learning for grade 3 students of SD N Jaban Sleman in 2018-2019. Based on the measurement of students in cycle I showed that 8.33% of students reached low, while 66.67% of students were moderate, and 25% were still in high motivation, in cycle II showed 8.33% of low motivation, 45.83% of students were at medium time, and 45.83% with high criteria. Whereas cycle III shows that 41.67% are at medium time and 58.33% are in high motivation. Student learning outcomes from cycle I were 50.83, cycle II was 47.83, and cycle III was 60.29. Student learning outcomes fall from cycle I to cycle II by 0.3, while the average from the average from cycle II to cycle III is 12.46. The expected learning outcomes have been achieved for students in cycle III there are 55% of students getting a score of ≥ 60 .

Keywords: *TGT Cooperative Learning, Motivation, Learning Achievement Mathematics.*

Background

Learning activities are interactions between teachers and students. The role of the teacher is very influential on the success of learning. The success of learning will not be separated from the media and the model applied by the teacher to activate students' interest in the learning. Learning that can activate student interest will have a positive effect on student learning outcomes in these subjects.

Interests and student learning outcomes in learning are closely related to the media or learning models applied by the teacher. Learning model according to Abu Ahmadi and Joko Tri Prasetyo (2005), the learning model is a knowledge of ways of

teaching that are used by a teacher or instructor. Learning models for each particular subject matter must be chosen according to the learning objectives to be achieved. Choosing a good learning model must consider the characteristics of the subject matter, the limitations of learning facilities, the basic abilities of students, and the allocation of learning time so that learning is effective and efficient.

Effective and efficient learning is not confined to just one learning model, but varies according to the characteristics of each student. The different characteristics of students is because each student has various characteristics including personality, habits, ways of learning that vary between one student and another student or different intelligence abilities in teaching a material in a particular learning.

One of the lessons taught in schools is learning mathematics because learning mathematics is a subject that is difficult for students to accept. Mathematics is known as deductive science, because every method used in searching for truth is by using deductive methods, while in natural science it uses inductive or experimental methods. But in mathematics looking for truth it can be started in a deductive way, but so on that is true for all circumstances must be deductively proven, because in the mathematical nature, the theory / proposition cannot be accepted before the truth can be proved deductively. Therefore, certain methods are needed so that students' motivation and learning outcomes increase.

Based on the results of observations made by the teacher in grade 3 at SD N Jaban in the academic year 2018/2019, it shows that mathematics learning is still teacher-centered. Teachers still use lecture methods that are oriented towards unidirectional communication, so that it makes it difficult for students to develop skills in terms of socialization, interpersonal relationships, and lack of ability to think critically and lack student motivation in attending lessons. The low motivation of student learning will have an impact on the low student learning outcomes.

The results of observations and interviews in grade 3 of SD N Jaban, showed that students' learning motivation in mathematics learning provided by teachers was largely not yet mastered the material provided. This is why students are lazy to take lessons and lack students' interest in mathematics. As an indicator of the causes, there are still many students who speak alone with their friends when the learning process takes place, there are students who are sleepy, and make mathematics less likeable to students. To achieve goals in learning that are active, creative, and fun so that they can improve student learning outcomes.

Low mathematics learning outcomes in grade 3 students at SD N Jaban especially in the material of Multiplication and Distribution Operations for odd semester shows that as many as 18 students have not been completed and only 6 students have completed. The value of the Minimum Completion Criteria (KKM) is 6.0 in the mathematics material at N Jaban Elementary School.

Learning motivation is a factor that is very influential on student learning outcomes. Because the motivation to learn can foster students' interest in learning. Students have low motivation level of desire to learn is low, while students who have

high learning motivation have a great desire to learn. A learning activity is needed. Good motivation will affect the improvement of student learning outcomes.

Based on the problem, the researcher sets out actions to improve the quality of learning that can encourage learning motivation that can improve student learning outcomes. The learning action chosen is the use of cooperative learning models of the Teams Games Tournament (TGT) type. The TGT model according to Slavin (2010) is that it allows students to compete as their team representatives with other team members whose previous academic performance is equivalent to theirs. cooperative learning model TGT model is one of the cooperative learning models that places students in study groups consisting of 4 to 5 students who have different abilities, sex, syllables or races.

The TGT cooperative learning model is one of the cooperative learning models that uses academic tournaments, uses individual questionnaires and progress systems, where students compete as team representatives with other team members whose previous academic performance is between them (Slavin, 2010: 13) .

According to Slavin (Fatahurrohman, 2015: 55) there are 5 stages in the TGT cooperative learning model, namely (1) the stage of class presentation, (2) group learning, (3) games, (4) matches, (5) and group awards. Salvin explained the steps of TGT cooperative learning as follows: (1) Stage of presentation, (2) Teaching materials in group matches are first introduced through class presentations.

At the stage of class presentation, the teacher delivers material in class presentation, usually done by direct teaching or by lectures, teacher-led discussions. At the stage of group work, students learn together with group members to complete the tasks and questions given. Students are given the freedom to learn together and help each other with friends in groups to explore subject matter. During group learning, the teacher acts as a facilitator by directing students who have difficulty in completing the task, as well as guiding the functioning of the study group. The game consists of questions designed to test students' knowledge gained from class presentation and group learning.

At the stage of the competition, each group of students from the highest to the lowest academic level are grouped together with students from other groups who have the same academic level to form homogeneous groups. Students from each group compete to contribute the highest points to the group. In this match, students who have moderate or low academic abilities can become students who get the highest point in their group matches. Points from the acquisition of each group member are accumulated in group points.

At the group award stage, groups that get group points that match the criteria set are given awards. Group awards are given on the basis of group point averages obtained from games and group matches with predetermined criteria.

According to Sondang P. Siagian (in Aina Mulyana) motivation as a driving force that results in someone willing and willing to mobilize their abilities, energy and time in order to achieve predetermined goals. According to Mc. Donald (in Aina

Mulyana), motivation is a change of energy within a person who is characterized by the emergence of affective, and reactions to achieve goals, as well as encouragement from within a person and this drive is a driving factor. Whereas according to Sanjaya (2011: 174) said that motivation can be interpreted as an impetus that allows students to feel in need. Students who feel in need will move by themselves. it is to fulfill the needs, therefore in order to generate motivation, the teacher must be able to show the importance of experience and learning material for the lives of students, thus students will learn not only to obtain value or praise, but are driven by the desire to fulfill needs.

From the opinion of some experts, it can be concluded that motivation to learn is an impulse that comes from students who raises the desire to achieve learning goals. At the outline of motivation contains the following values: (1) Motivation determines the level of success or failure of student learning actions, because learning without motivation, is difficult to succeed, (2) Teaching motivated, in essence is teaching tailored to needs, encouragement, motives, and interests that exist in students. Such teaching, in accordance with the demands of democracy in education, (3) Teaching that is creative and imaginative motivated to the teacher to strive to truly seek relevant and harmonious ways to generate and maintain learning motivation in students. Teachers must always strive so that students ultimately have good motivation, (4) Success or failure in growing and using motivation in teaching is closely related to classroom settings, (5) Motivational principles become an integral part of teaching principles. The use of motivation in teaching not only complements teaching procedures, but also becomes a factor that determines effective teaching. Thus, the use of motivational principles is very important in the teaching and learning process.

Learning outcomes according to Patta Bundu (2006: 17) is the level of mastery achieved by students in participating in teaching and learning programs in accordance with established educational goals which include cognitive, affective, and psychomotor aspects. Nana Sudjana (2004: 22) defines learning outcomes as abilities possessed by students after receiving their learning experience.

Regarding the learning outcomes in elementary school, Patta Bundu (2006: 19) states that the results of elementary school mathematics learning are all changes in behavior that occur in students in the field of mathematics as a result of following the mathematics learning process. Learning outcomes are usually expressed by scores obtained from one learning outcome test held after participating in a learning program. This is in accordance with the dimensions of learning outcomes which consist of dimensions of the type of content (product), dimensions of type of performance (process) and dimensions of type of attitude (scientific attitude). The learning outcomes of mathematics must of course be linked to the goals of mathematics education which have been included in the outlines of the mathematics teaching program in schools without forgetting the nature of mathematics itself.

Research Methodology

This research is a classroom action research (CAR). The purpose of PTK is to increase motivation and learning outcomes of mathematics in grade 3 of SD N Jaban through the use of the TGT cooperative learning model. PTK consists of three cycles. Each cycle consists of four stages that must be passed, namely planning, implementation, observation, and reflection. Research procedure with spiral model PTK from C. Kemmis and Mc. Taggart.

The population in this study were third grade students of SD N Jaban in the academic year 2018/2019. Data can be obtained from daily tests held in class 3 as initial data. Data that shows the results of improvements in the first cycle are obtained from evaluations done by students at the end of learning cycle I repairs, these results are what researchers use as data sources for cycle I. Data that shows results of improvement in cycle II is obtained from evaluations done by students at the end of cycle learning improvement II, this result is what the researcher used as the data source for cycle II.

Data showing the results of improvements in the third cycle were obtained from the results of evaluations done by students at the end of the third cycle obtained from the results of evaluations carried out by students at the end of the third cycle of learning improvement as well as observations made by researchers and colleagues as observers.

The technique of collecting data used in this study uses test and non-test techniques accompanied by a grid of data collection instruments. In this study, data analysis was carried out by using learning outcomes completeness analysis, namely seeing an increase in completeness of learning outcomes in the pre-cycle stage, cycle I, cycle II, and cycle III.

Findings and Discussion

Based on the results of the research, it is seen that the picture of student learning outcomes is as follows:

1. Pre-action

Motivation to learn Mathematics in grade 3 students at SD N Jaban using a Likert scale consisting of 3 categories, namely high, medium, and low. Based on the observations of student learning motivation conducted by peers can be seen in the following table.

Table 1. Motivation to learn Mathematics

NO	Learning Motivation Value	Criteria	The number of students	Prosentase
1	≤59	Low	5	20,83%
2	60-79	Medium	11	45,83%
3	≥80	Height	8	33,33%

Based on table 1 above it can be seen that as many as 20.83% of students who are low motivated, 45.83% of students are moderately motivated, and 33.33% of students are highly motivated.

The description of student learning outcomes in pre-cycle activities that the test results from 24 students there are 18 students whose learning outcomes are still below the KKM and only 6 students whose learning outcomes are above KKM. Students are still having difficulty in calculating multiplication and division operations.

2. Cycle I

The following is an overview of the motivation to learn mathematics in grade 3 students at SD N Jaban in the first cycle as follows:

Table 2. Motivation to learn Mathematics

NO	Learning Motivation Value	Criteria	Number of Students	Percentage
1	≤59	Low	2	8,33%
2	60-79	Medium	16	66,67%
3	≥80	Height	6	25%

Based on table 2 above, it can be seen 8.33% of students who are low motivated, 66.67% are moderately motivated students, and 25% are highly motivated students. The following is an illustration of the increase in mathematics learning outcomes of grade 3 students.

Table 3. Results of learning mathematics in the first cycle

Value (x)	Number of students (Y)	Percentage
0-20	1	4,1%
21-40	4	16,67%
41-60	14	58,33%
61-80	5	20,83%
81-100		
Total value of	1220	
The average value of	50,83	
The highest score is	76	
Lowest Value	14	
KKM 6,0		

Based on table 3 above, there are 4.1% of students whose learning outcomes are in the 0-20 interval, 16.67% of students whose learning outcomes are interval 21-40, 58.33% of students who are in the 41-60, and 20 intervals. 83% of students are in intervals 61-80. There are 19 students whose grades are below the KKM and 5 students whose grades are above the KKM.

3. Cycle II

The following is an illustration of the motivation to learn mathematics in grade 3 students at SD N Jaban in the second cycle, as follows:

Table 4. Motivation to learn Mathematics

NO	Learning Motivation Value	Criteria	Number of Students	Percentage
1	≤59	Low	2	8,33%
2	60-79	Medium	11	45,83%
3	≥80	Height	11	45,83%

Based on the 8.33% table above there are 2 students who are low motivated, 45.83% are moderately motivated students, and 45.83% are highly motivated students. While the description of the increase in mathematics learning outcomes of grade 3 students in the second cycle is as follows:

Table 5. Results of the second cycle of mathematics learning

Value (x)	Number of students (Y)	Percentage
0-20		
21-40	7	29,17%
41-60	15	62,5%
61-80	2	8,33%
81-100		
Total value of	1148	
The average value of	47.83	
The highest score is	70	
Lowest Value	21	
KKM 6,0		

Based on table 5 above there are 29.17% of students whose learning outcomes are in intervals of 21-40, 62.5% of students whose learning outcomes are in the interval 41-60, 8.33% of students whose learning outcomes are at intervals 61-80. There were 22 students who scored below the KKM and 2 students who scored above the KKM.

4. Cycle III

The following is an illustration of the motivation to learn mathematics in grade 3 students at SD N Jaban in cycle III

Table 6. Motivation to learn Mathematics

NO	Learning Motivation Value	Criteria	Number of Students	Percentage
1	≤59	Rendah		
2	60-79	Sedang	10	41,67%
3	≥80	Tinggi	14	58,33%

Based on table 6 above there are 41.67% of students who are moderately motivated and 58.33% of students are highly motivated. While the description of the increase in mathematics learning outcomes of grade 3 students in the second cycle is as follows:

Table 7. Results of learning cycles of mathematics III

Value (x)	Number of students (Y)	Percentage
0-20		
21-40	2	8,33%
41-60	9	37,5%
61-80	11	45,83%
81-100	2	8,33%
Total value of	1447	
The average value of	60.29	
The highest score is	84	
Lowest Value	21	
KKM 6,0		

Based on table 7 above there are 8.33% of students learning outcomes in intervals of 21-40, 37.5% of students whose learning outcomes are in intervals 41-60, 45.83% of students learning outcomes are at intervals 61-80, and 8,33% of students are in intervals of 81-100. There were 13 students who had achieved mastery. The results of the data obtained that there is an increase in motivation and student learning outcomes from each cycle shows that the use of the TGT type cooperative learning model can increase motivation and mathematics learning outcomes of grade 3 students at SD N Jaban.

Conclusion

TGT type learning cooperative learning can increase motivation and mathematics learning outcomes of third grade students of SD N Jaban Sleman academic year 2018/2019. The results of the study showed that through five stages of TGT cooperative learning consisting of presentation step classes, study groups, games, tournaments and award groups. Based on the results of observations the motivation of students in cycles I, II, and III has increased. Student learning outcomes decreased from cycle I to cycle II by 0.3, while the increase in the average value from cycle II to cycle III was 12.46. The expected learning outcomes have been achieved for the third cycle students, there are 55% of students getting a score of ≥ 60 .

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