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IMPLEMENTATION OF TEAM GAMES TOURNAMENT (TGT) TYPE COOPERATIVE LEARNING TO IMPROVE LEARNING OUTCOMES AND INTEREST IN LEARNING MATHEMATICS FOR CLASS STUDENTS VIII SMPMAKASSAR GROVE CATHOLIC

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ABSTRACT

This research is classroom action research (PTK), which aims to improve learning outcomes and interest in learning mathematics for class VIIIB students at Belibis Catholic Middle School, Makassar. The subjects in this study were 21 class VIIIB students of Belibis Catholic Middle School, Makassar. The data collection techniques used in this research were student mathematics learning outcomes tests, student activity observation sheets, teacher activity observation sheets and student interest questionnaires for each cycle. Data analysis techniques used in this study are qualitative and quantitative. The results of this research show that after being given action using the Team Games Tournament (TGT) type cooperative learning model, there was an increase in the average score of students' mathematics learning outcomes tests for opportunity material at the end of cycle I which was obtained at 71.05 from the ideal score of 100 and at the end of the cycle II increased to 82.81 from the ideal score of 100 with the mastery of students' understanding of mathematics learning outcomes increased by 33.33%. The standard deviation at the end of cycle I was 9.584 and the standard deviation at the end of cycle II was 7.332, based on the assessment categories used to obtain student mathematics learning outcomes scores which were categorized as complete in cycle II, there were 1 student to 20 students in cycle II. The interest in learning mathematics of class VIIIB students at Belibis Catholic Middle School, Makassar, through the Team Games Tournament (TGT) type cooperative model, obtained a score in cycle I of 73.49% while in cycle II it was 83.57%. The increase in the two cycles can be said that students' interest in learning reaches the existing categories. From the results of this research, it can be concluded that by implementing the Team Games Tournament (TGT) type cooperative learning model consisting of cycles I and II, there is an increase in the quality of learning, namely increasing learning outcomes and interest in learning mathematics for class VIIIB students at Belibis Catholic Middle School, Makassar.

Keywords: ***Learning Outcomes, Learning Interest, Learning Model, Cooperative Model Team Game***

1. Introduction

Education is something that is important to prepare quality human resources, to develop students' potential as provisions for living life, and can foster a sense of responsibility in society. Education is a very effective tool in educating the nation's life, this is one form of implementing the third goal of the Indonesian state, namely educating the nation's life (Ovan at all 2019). An educational process will be carried out with educators and students. The learning process

consists of important components that are interconnected with each other. The interaction between educators and students in the learning process is very important because with the interaction between educators and students can achieve the desired learning objectives. In line with that, one of the important components in education is the teacher.

Teachers in the educational context have a large and strategic role. This is because the teacher is at the forefront of the implementation of education because the teacher is one of the factors that determine success in the teaching and learning process. For this reason, teachers need to equip themselves with various skills that are expected to help carry out their duties in learning. One of the questioning skills is the way a teacher asks all students in the class, both in groups and individually.

He teacher can present meaningful and interesting mathematics learning for students if the teacher presents contextual and realistic problems, namely problems that are known to be close to students' daily lives. Therefore, teachers need to provide assistance or encouragement to students in learning mathematics.

The word mathematics is related to the Sanskrit language, namely "medha" or "widya" which means intelligence, knowledge and intelligence. Based on the explanation of several explanations of these mathematical terms, it can be understood that mathematics is a science that studies how to think rationally and make sense in obtaining concepts. Mathematics is said to be a science because its existence can be studied from various phenomena. Mathematics is also the science of organized structures starting from elements that are not defined, to elements that are defined (Rosmala, 2018).

The mathematics material taught in junior high school in class VIII semester 2 consists of several topics, one of which is Opportunity. Students are required to be able to master the material presented about Probability, for example in determining the Empirical and Theoretical Probability of an Event, applying the Empirical and Theoretical Probability Theorem in everyday life. If students can master this material, it will be easier for students to apply it in everyday life. So that students will find it easy to solve questions and this will have an impact on learning completeness. A student is said to have completed learning individually if the grades obtained are in accordance with the Minimum Completeness Criteria (KKM)

The importance of mathematics for students is not in line with the success of mathematics in their learning. Based on the results of observations and interviews on August 24 2022, the author found several problems in Class VIII of Belibis Makassar Catholic Middle School, namely: the majority of students did not like mathematics subjects. They think mathematics is a difficult and scary subject. This is the reason why students are not enthusiastic about learning mathematics. From the results of class observations, the teacher teaches using a conventional learning model, namely the teacher explains in front of the class. During the learning process there are still many students who do not participate in learning activities. Most students are busy with activities outside of mathematics lessons, for example, joking with their classmates or playing. Only a few students paid attention to the teacher's explanation. During the learning process, students are given the opportunity to try to dig up information and there is a lack of activity during the lesson, the teacher presents all the material on the blackboard and gives examples of questions that were worked on together. Students only listen and take notes without taking an active role, as a result, student independence in learning is not formed. Students tend to be embarrassed to speak in class, for example students are embarrassed to express opinions or ask questions to the teacher. Some of these problems cause the minimum completeness criteria to not be achieved.

Researchers also obtained information from teachers at Belibis Makassar Catholic Middle School that students' mathematics learning outcomes on average were still relatively low compared to the minimum completeness criteria (KKM) score for mathematics subjects, namely 75. Data obtained from observations was from a total of 21 students. In class VIII it turned out that there were 12 students who were able to meet the KKM, with the lowest score being 58 and the highest score being 80. Based on this data it can be concluded that the learning outcomes and learning interest of class VIII students at Belibis Catholic Middle School Makassar are still relatively low. From these observations and interviews, researchers found several problems in Class VIII of Belibis Makassar Catholic Middle School, namely: the majority of students did not like mathematics subjects. They think

mathematics is a difficult and scary subject. That's the reason why students are not enthusiastic in participating in learning mathematics. Therefore, appropriate learning strategies or models are needed so that students can play an active role during the learning process.

The learning model is a conceptual framework that describes a systematic procedure for organizing learning experiences to achieve certain learning goals. The learning model serves as a guide for learning designers and teachers in planning and implementing learning activities. This learning model is very effective in efforts to improve the quality of teaching and learning activities, because in learning activities students are required to play an active role in learning and are expected to use higher-order thinking skills, hone cohesiveness and cooperation in a team/group. (Mulyono 2018:89)

In TGT type learning, the teacher walks around to guide group discussions. This allows students to easily interact with the teacher when students are discussing. With the TGT type cooperative learning model, all students are directly involved and groups are formed which results in competition between students and between groups, as well as games in the TGT type cooperative learning model, so that students can be active and not cause boredom. Team Games Model Tournament is an alternative model that seeks to enable students to be actively involved in the mathematics learning process in class.

The purpose of this research is to improve learning outcomes and interest in learning mathematics for class VIIIB students of Belibis Catholic Middle School Makassar.

2. Research Methods

The type of research used is Classroom Action Research. In this study, the PTK model that will be used is Empirical PTK, namely researchers who directly teach at the school where they do their research. This research was conducted at Belibis Makassar Catholic Middle School which is located at Jl. Belibis no. 44, Lette, Kec. Mariso, Makassar City, South Sulawesi 90124, in the even semester of the 2022/2023 academic year.The subjects of this research were 11 students in class VIII $_{B}$ of Belibis Catholic Middle School, Makassar, even semester of the 2022/2023 academic year, 11 men and 10 women, so the total number of students was 21 people.The object of this research is improving the learning model through the *Team Games Tournament (TGT)* to improve student learning outcomes and interest to learn. This research was carried out over two cycles at Belibis Makassar Catholic Middle School, the first cycle was held in 4 meetings, namely meetings 1 to 3 for material presentation and the 4th meeting for the final evaluation of cycle I. The supporting instruments in this research were learning outcomes tests and learning interest questionnaires. student.

3. Results

Classroom action research (PTK) was conducted to determine student learning outcomes and interest in learning mathematics in class VIIIB of Belibis Catholic Middle School Makassar for the 2023/2024 academic year.

This research was conducted for two cycles, each conducted four times. There are three meetings for teaching and learning activities and one for cycle exams. Each cycle consists of the stages of planning, implementing, observing and reflecting.

a. Description of cycle I learning activities

1) Student mathematics learning outcomes.

Data about students' mathematics learning outcomes in the first cycle was obtained through providing the final test cycle in the form of descriptive text after the teaching and learning process for 3 meetings. Descriptive analysis of the mathematics learning outcomes of class VIIIB students at Belibis Catholic Middle School in the first cycle of implementing the cooperative model is as follows:

Table 3.1. Statistical scores of student learning outcomes in Cycle I

Statistic	Value Statistic
Subject	21
Ideal score of	100
Maxsimum	84
Minimum	50
Score range	34
Mean	71.05
Median	75.20
Mode	75
Variance	91.848
Standar deviation	9.584

Based on Table 3.1, it can be seen that there were 21 students who took the mathematics learning outcomes test at the end of the first cycle, which means that students took the final test of cycle I as a whole as the number of students in the class. The maximum score means that the student's highest score is 84. Minimum, which means the lowest score of all student learning test results is 50. Score range means the difference between the maximum score and the minimum score is 50, which means that the first cycle test result score is 71.05 with the standard deviation which shows that the deviation of the data from the average score of 9.584 is caused by a comparison between very different student scores where there are several students who get high scores and there are many students who get low scores. The median value is 75.20, which means 50% of students scored below 65 and 50% of students scored above 65. Variance, namely the distribution of data centered on 91,848. The highest student score mode is 77. If the scores of student learning outcomes are grouped into categories based on categorization, the frequency distribution obtained is shown in the table below

Table 3.2. Cycle I Frequency Distribution and Percentage Scores

Interval	**Category**	**Frequency**	**Percentage(%)**
85-100	Very high	0	
82-92	high	1	4,76
75-81	moderate	12	57,15
<75	low	8	38,09
Total		21	100

Table 4.2 shows that the mathematics learning outcomes of class VIIIB students at Belibis Catholic Middle School Makassar have taken action in the first cycle, of the 21 students generally representing the level of mathematics learning outcomes in the high category after applying the cooperative model type (TGT) 4.76%.

A complete description of student learning outcomes following the Team Games Tournament (TGT) cooperative learning model during the learning process in cycle I can be in the following table.

Score	criteria	frequency	percentage
<75	Not complete	8	38,09
75-100	complete	13	61,91
Jumlah		21	100

Based on Table 3.3, the description of the results of learning mathematics about student mastery in the first cycle shows that the percentage of students who complete only 61.91% percent is 8, while the percentage of students who do not complete the first cycle is 38.09% in 21. In the first cycle, it can be concluded that learning by applying the Team Games Tournament (TGT) cooperative learning model at Belibis Middle School Makassar has proven unsuccessful because it has not reached the standard of learning mastery which is classically 85% of 21 students. which must be in the complete category, then the research does not stop in cycle I but needs to be continued in cycle II.

1) Student interest

Observation results were obtained from observations made by observers by filling in a questionnaire prepared to assess the continuity of the teaching and learning process. Observing student learning interest is observing student behavior during the teaching and learning process. The results of student activities can be found in the following table:

Table 3.4 Observation Results of Student Interests in Cycle I

No	**Indicators of interest**	**Items**	**%**	**description**
1	Feeling of pleasure	1-5	74,92 %	Stong
2	attraction	6-10	77,14 %	Stong
3	Student attetion	11-15	73,61 %	Strong
4	Studen engagement	16-20	68,89 %	Strong
total		20		
average			73,49%	Strong

Based on Table 4.4, it can be seen that after going through the learning process using the TGT type cooperative learning model in cycle I with 3 meetings, student interest in learning reached 73.49% at the end of the

questionnaire distributed in cycle I. Although the expected student interest in learning has not been fully achieved, student interest in learning in cycle I has increased. Therefore, researchers must carry out follow-up to the next cycle.

b. Description of cycle II learning activities

1) Test student learning outcomes

Data on students' learning outcomes in the second cycle were obtained by completing a test cycle in the form of an essay test after 3 teaching and learning sessions. The following is a descriptive analysis of the cooperative mathematics results of class VIIIB students of Belibis Catholic Middle School Makassar in Cycle II after the application of the Team Games Tournament (TGT) Cooperative learning model.

Table 3.5 Statistical Scores of Student Learning Outcomes in Cycle II

Statistic	Value Statistic
Subject	21
Ideal Score Of	100
Maximum	96
Minimum	65
Score Range	31
Mean	82,81
Median	82,67
Mode	80
Variance	53,762
Satndard Deviation	7.332

Based on Table 3.5, it is said that students who took the mathematics learning achievement test at the end of the second cycle; subject 21, which means that students take the final test of cycle II as a whole with the number of students in the class. Maximum score, which means the student's highest score is 96. Minimum, which means the lowest score of all students on the learning test results is 65. Score range means the difference between the maximum score and the minimum score is 31. Mean, which means that the test result score from the second cycle is 82.81 with a standard deviation, which shows that the deviation of the data from the average value of 7.332 is caused by a comparison between various student scores where there are students with very high scores, there are students with high scores and there are also students with low scores. This results in data deviations or differences between students' scores and the average of 7,332 students. The median is 82.67, which is 50% of students who score below 73 and 50% of students who score above 84. Variance is the spread of data centered at 53.672. And the mode which is the most obtained student score is 80. If students' mathematics learning outcomes scores are grouped into assessment categories based on categorization, the frequency distribution obtained is shown in the table below.

Table 3.6 Distribution and Percentage Scores of Cycle II Students

Interval nilai	**Kategori**	**Frekuensi**	**Persentase (%)**
85-100	Very high	9	42.85
75-84	High	11	52.38
50-69	Medium	1	4.76
40-49	Law	0	0
0-39	Very Law	0	0
Jumlah		**21**	**100**

In Table 3.6, the results of learning mathematics for class VIIIB students at Belibis Catholic Middle School Makassar after taking action in the second cycle can be seen as a percentage of 42.85 percent of 21 students who generally represent the level of learning mathematics in the high category. following a cooperative model.

A complete description of students' mathematics learning outcomes after using the Team Games Tournament (TGT) Cooperative learning model during the learning process in cycle II can be found in the following table:

Table 3.7 Description of completeness of student learning outcomes in Cycle II

Score	Criteria	Frequency	Percentage (%)
50-69	medium	1	4,76
75-100	complete	20	95,22
Total		21	100

Based on Table 3.,6 the results of the description of the completion of mathematics student learning outcomes in Cycle II show that the percentage of students who completed was 90.47%, namely 21 students, while for students

who did not complete the percentage was 42.87%, namely 1 student. Thus, in the second cycle, it can be concluded that learning by applying the cooperative model in class VIIIB SMP Belibis Makassar Catholicism can be said to have been successful because it has reached the standard of completeness of students' mathematics learning outcomes, namely classically 85% of 21 students who must be in the complete category. Because the percentage of student learning outcomes in mathematics in cycle II had reached 95.22% or as many as 20 students who were in the complete category of ability to learn mathematics, this research stopped in cycle II.

1) Student interest in learning questionnaire

Observation results were obtained from observations made by researchers or observers by filling in questionnaire observation sheets prepared to assess the continuity of the teaching and learning process. Observing student learning outcomes is observing student behavior during the teaching and learning process.

Table 3.8 Observation Results of Student Interest Questionnaires in Cycle II

No	**Indicators of interest**	**Items**	**%**	**description**
1	Feeling of pleasure	1-5	80%	Stong
2	attraction	6-10	87,30%	Stong
3	Student attetion	11-15	80,31%	Strong
4	Studen engagement	16-20	86,66%	Strong
total		20		
average			83,57%	Strong

Based on table 4.10, it can be seen that after going through the learning process using the TGT type cooperative learning model in cycle II with 3 meetings, student interest in learning reached 83.57% at the end of the questionnaire distribution at the end of cycle II. Because the students' learning interest is expected to reach a very strong category in cycle II, this researcher does not continue to the next cycle.

This research is in line with research conducted by Ela Susanti (2020) which shows that the application of the Team Games Tournament (TGT) learning model can increase activity and learning outcomes. In addition, Yolan K. Hamzah (2021) showed that in his research there were 2 indicators, namely motivation and learning achievement of class X SMA 2 Gorontalo, in this study proved that using this model could increase student motivation and learning achievement in each cycle. Furthermore, research conducted by Ela Luli Herwati (2020) is the application of the Team Games Tournament (TGT) learning model to improve student learning outcomes. This research aims to determine the application of the Team Games Tournament (TGT) learning model can improve student learning outcomes. The results showed that student learning outcomes increased by using the Team Games Tournament (TGT) learning model.

The difference between this research and previous research is that this research was carried out in junior high schools while the previous research was carried out in SMA X and SMP class VII. The indicators examined in this research are learning outcomes in terms of interest, while previous research was learning outcomes and motivation and achievement

Thus it can be concluded that the Cooperative learning model of the Team Games Tournament (TGT) type can improve learning outcomes in mathematics in terms of learning interests of class VIIIB students of Belibis Catholic Middle School Makassar and learning activities. Directly with supporting theories, namely (1) the theory of the structure of cooperative representation, and (2) the process of memory (memory), namely the mechanism for encoding, storing, and re-disclosing what has been stored in memory and can connect the material being studied at this time and previous lesson. A further study of these two theories will be presented after the discussion on Improving student mathematics learning outcomes using a cooperative learning approach. Romagnano, L. (2020), therefore there is no need to continue to the next cycle in cycle I the percentage was 74.92%, while in cycle II there was an increase of 80%. The second indicator, interest in learning in cycle I was 77.14%, while in cycle II there was a fairly large increase of 87.30%. The third indicator, the percentage of students' attention to learning in cycle I was 73.61%, while in cycle II it increased by 80.31%. The fourth indicator, student involvement in learning in cycle I, was 68.89% and increased by 86.66% in cycle II. So the average of these four indicators, in cycle I

was 73.49% while in cycle II it was 83.57%. The increase in these two cycles can be said to mean that students' interest in learning has not reached the existing categories.

4. Discussion

outcomes in cycle I was 59.76 and in the students who took the test in cycle I, 85.71% were in the incomplete category and 14.28% were in the completed category. This means that the classical completeness criteria are not met, namely 85%.Cycle II

Based on a descriptive analysis of mathematics learning outcomes for class VIII $_{B}$ students at Belibis Makassar Catholic Middle School, it was found that the average score for students' mathematics learning outcomes in cycle II was 81.05 and in the assessment category for Belibis Makassar Catholic Middle School, these learning outcomes were in the high category. Completeness of mathematics learning outcomes on the subject of Building Flat Side Spaces through the NHT type Cooperative model reached a classical 85% of the KKM that had been determined at Belibis Makassar Catholic Middle School. So the mathematics learning outcomes of class VIII **B students at** Belibis Makassar Catholic Middle School after implementing the NHT type cooperative model have increased. Of the 21 students who took the test in cycle II, 14.28% were in the incomplete category and the other 85.71% were in the completed category.

5. Thank-you note

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