THE APPLICATION OF THE TEAM GAME TOURNAMENT MODEL ASSISTED BY DIAGRAM BOARD MEDIA TO INCREASE INTEREST AND ACHIEVEMENT IN FIFTH GRADE MATHEMATICS LEARNING AT PUBLIC ELEMENTARY SCHOOL 2 BABAKAN

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Abstract: This study aims to enhance interest and academic achievement by implementing the Team Game Tournament (TGT) learning model assisted by a board diagram media in the subject of Mathematics for fifth-grade students at Public Elementary School 2 Babakan. The research method used in this study is Classroom Action Research (CAR) conducted over two cycles, with each cycle consisting of two meetings. Data collection techniques employed include observation of teacher and student activities, questionnaires, and evaluation tests. The results of this research indicate that students' interest in learning during the first cycle obtained an average score of 2.955, categorized as good. It further increased in the second cycle with an average score of 3.37, categorized as very good. The level of learning achievement increased from less criteria in pre-action to sufficient criteria in cycle 1 and obtained excellent criteria in cycle 2. Based on the obtained results, it can be concluded that the implementation of the Team Game Tournament learning model assisted by a board diagram media can enhance students' interest and academic achievement in the subject of Mathematics, specifically in the topic of data presentation, for fifth-grade students at Public Elementary School 2 Babakan in the 2022/2023 academic year, second semester.

Keywords: TGT Model, Board Diagram Media, Learning Interest, Learning Achievement

INTRODUCTION

Education is a process aimed at creating individuals or specific groups who are qualified and have character in their lives. Fitri (2021:1617-1620) states that education is a means for humans to develop their potential through acquired learning. With education, individuals can adapt quickly to their environment as it helps shape them into well-rounded individuals in all aspects of life. In line with Yastiari (2019:431-438), education allows individuals to nurture their potentials and transform their behavior for the better.

In the era of globalization, students are required to compete based on their potential and skills, so that education can equip them in preparing themselves to face future challenges. This is in accordance with the Republic of Indonesia Law Number 20 of 2002 concerning the National Education System, which states that:

"Education is a conscious and planned effort to create a conducive learning environment and learning process, so that students actively develop their potential to possess spiritual strength, self-control, personality, noble moral intelligence, and skills that are necessary for themselves and society" (Pristiwanti et al., 2022:7911-7915).

The law affirms that education is a planned effort to develop one's potential for future preparedness. Education goes beyond the mere dissemination of knowledge; it encompasses attitudes, potentials, skills, and the formation of character in students through the learning process.

Mathematics is one of the subjects taught in schools, starting from elementary school to junior high school and even high school. Learning mathematics at the elementary level is highly important because it has practical applications in students' daily lives and serves as a fundamental foundation for studying mathematics at advanced levels. It also contributes to other subjects as a supporting tool for knowledge acquisition. Agustina et al (2020) share the same viewpoint that mathematics is a scientific discipline that plays a crucial role in human life. Mathematical concepts in everyday life are directly needed, such as when buying an item that requires counting skills, such as returning shopping money, measuring the weight of an item, and calculating the price of the item to be purchased so that mathematical concepts need to be instilled early on to students. Mathematics among the community, is famous for the scourge of difficult and boring subjects because most people think that mathematics is one of the subjects that memorizes a lot of formulas, making many people, especially students, less interested in mathematics.

Interest in mathematics must have a desire in students so that there will be an urge to want to be able to learn math. Hidayat & Widjajanti (2018:63-75) state that student interest in learning is a state that can cultivate a sense of enjoyment and ignite motivation when engaging in activities. This interest can be measured through feelings of liking, curiosity, attention, and involvement in the learning process.. Starting from a sense of liking or interest in the learning process, it can produce maximum learning activities. Interest in

learning math cannot grow alone in students but also a sense of need to be able to do it.

Table 1. End of Semester Assessment Score of Grade Five at State Elementary School 2 Babakan in 2022/2023

KKM	Number of Student	Completed	Not Completed
64	26	6 (23,08%)	20 (76,92%)

(Source: Class V Teacher)

Based on the data above, out of 26 students who scored above the Minimum Criteria of Mastery Learning (KKM) only 6 students and those below the KKM were 20 students. When viewed from the percentage of learning outcomes, only 23.08% scored above the KKM while the remaining 76.92% scored below the KKM. This shows that the completeness of student learning achievement in mathematics is still low.

The results of observations made when following the mathematics learning process at Public Elementary School 2 Babakan, the researcher identified several things that were factors in the incompleteness of learning Mathematics, one of which was that interest in mathematics was still low. Seen when the learning process takes place when the teacher explains the students pay less attention and do other activities such as talking to friends, playing with stationery, lying down by putting their heads on the table and some even daydreaming with their heads propped up by their hands. Another fact found by researchers during observation is that students are less active in learning. The teacher asked questions that responded to only a few children and when the teacher gave the opportunity to ask questions, no one asked questions related to math learning. Not only that, students' numeracy skills are still lacking, especially in division. The teacher also said that students have difficulty if given varied problems.

Mathematics learning at Public Elementary School 2 Babakan currently uses learning with discussion and lecture methods, but in its implementation the method has not run optimally. The division of discussion groups at the time of observation was not heterogeneous and the division of groups was based on seating so that the grouping did not pay attention to the level of understanding of each student. Looking at the division of

groups based on seating makes it unbalanced. Groups containing students who are all less make them feel confused. The result is that when the time specified by the teacher when working on group discussions is finished, they have not finished so they end up copying the answers of other groups who are presenting in front so that heterogeneous grouping is very important. Heterogeneous grouping is a random grouping in which in one group there are students who have different abilities, including students who have high, medium and less ability with the aim of sharing knowledge between students so that if there are students who do not understand, they can help each other on certain material which will have an impact on their learning achievement.

Based on these problems, it is necessary to make changes to the learning process so that students' interest and learning achievement can be addressed properly. The right effort to overcome the problems that have been described is to use a cooperative learning model. Anitra (2021:8-12) Cooperative learning is a learning activity carried out in groups to work together to help each other and each group consists of 4-5 students heterogeneously, there is control and facilitation, and holds the group responsible for results in the form of reports or presentations. In line with the opinion of Paris et al (2021:101-108) stated that cooperative learning refers to a learning method where students work together in small groups to help each other while learning. Through cooperative learning, students can work together, share and exchange ideas with each other in solving a problem to achieve the desired goal.

Cooperative learning has many types, one of which is used in this study, namely the Team Game Tournament (TGT) cooperative learning model. Muslim, A.H (2020) stated that TGT learning is a learning activity that involves students during the learning process and does not provide a sense of boredom for students when learning at school. The TGT model has 5 stages, namely Class Presentation, Team, Games, Tournament, and Team Recognition. These stages in learning make students more active and fun when learning so that it can increase students' interest and learning achievement, as in the case of research conducted by Achmad Nur Sodiq and Trisnawati entitled Increasing Interest and Learning Outcomes in Mathematics through the Cooperative Learning TGT Model for Tukangan Yogyakarta Public Elementary School Students from the Journal of Mathematics Education Volume 6 Number 1 2020. The results of the study showed that in the pre-action learning interest in the low category, in cycle 1 in the medium category,

and increased in cycle 2 in the high category while the average math learning outcomes in pre-action 66.48 increased to 71.41 in cycle 1 and in cycle 2 increased to 79.72 (Sodiq & Trisnawati., 2020: 68-75). This proves that using the TGT model in learning can increase student interest and learning outcomes at Tukangan Yogyakarta Public Elementary School.

The TGT model has something that makes it interesting than other learning models, namely there are games or tournaments that can increase student interest in learning. Learning is usually just sitting and discussing, but by using the TGT model there will be games and students feel challenged, cause enthusiasm for learning and are not boring. This research is assisted by diagram board media so that students more easily understand the data presentation material. Rahmi et al (2019:178-185) state that media is a tool to foster learning process activities. Diagram board media is a tool to assist the learning process in data presentation and data processing material. This media is expected to increase student interest and understanding in data presentation material.

Based on the problems that have been described, this study discusses the Application of the TGT Model Aided by Diagram Board Media to Increase Interest and Achievement in Fifth Grade Mathematics Learning at Public Elementary School 2 Babakan.

RESEARCH METHODS

This type of research uses Classroom Action Research (PTK). The PTK model that will be used is using a spiral classroom action model developed by Stephen Kemmis & Mc. Taggart (Saputra et al., 2021). This research was conducted in 2 cycles, each cycle consisting of 2 meetings. Each cycle has 4 stages, namely planning, action, observation, and reflection. This PTK was conducted in the fifth grade of Public Elementary School 2 Babakan, Karanglewas District in the 2022/2023 school year. The subjects in this study were fifth grade students of Public Elementary School 2 Babakan consisting of 9 boys and 17 girls, totaling 26 students. The data collection techniques used were tests, observations of teacher and student activities and questionnaires.

RESULTS AND DISCUSSION

Classroom Action Research (PTK) using the TGT model assisted by diagram board media in Mathematics subjects on Data Presentation material was carried out in two cycles, each cycle of which had two meetings with an allocation of 3 x 35 minutes each meeting. The research was carried out in collaboration between researchers, fifth grade teachers of Public Elementary School 2 Babakan, and peers.

1. Learning Interest

The interest in learning that exists within students can significantly influence their learning outcomes. Student interest is a prerequisite for creating an effective learning environment in the classroom (Tunggal, 2023:10-18). Student interest in learning is measured through self-assessment using a questionnaire in which students evaluate themselves by responding to statements provided on the questionnaire. The data obtained from the completed questionnaires by all students yield the following results:

Table 2. Results of Study Interest Questionnaire Fifth Grade Students of State Elementary School 2 Babakan

Achievement	Cycle 1 Meeting I	Cycle 1 Meeting II	Cycle 2 Meeting I	Cycle 2 Meeting II
Average Meeting	2.91	3	3.26	3.48
Achievement Criteria Meeting	Good	Good	Very Good	Very Good
Cycle Averegae	2.955		3.37	
Achievement Criteria Meeting	Good		Very Good	

Based on table 2 that student interest in learning in cycle 1 meeting I got an average class score of 2.91, increased in cycle 1 meeting II to get an average class score of 3. Student interest in cycle 2 meeting I got an average class score of 3.26 and increased in cycle 2 meeting II to get an average class score of 3.48. From the data that has been presented, it can be concluded that student interest in learning has increased from cycle 1 to cycle 2 so that it can be declared successful because it has reached the specified success indicator, namely it has reached

an average of 2.5 < X ≤ 3.25 with a good category, for easier it can be seen in the histogram figure below:

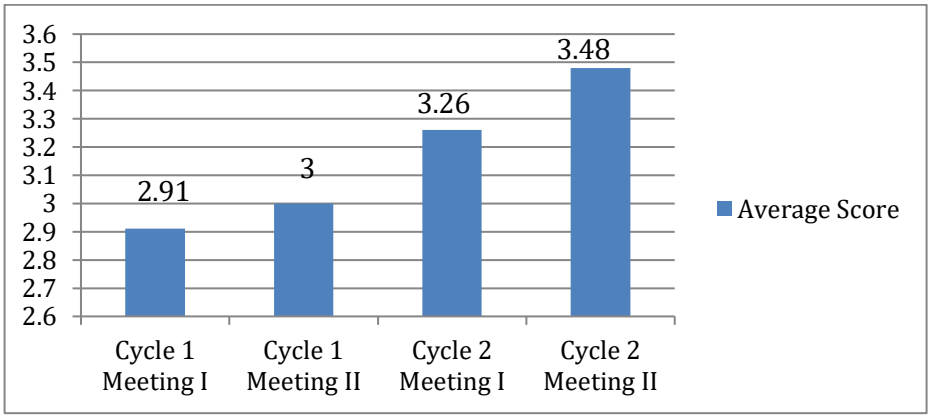

Figure 1. Histogram of Increased Learning Interest Fifth Grade Students of State Elementary School 2 Babakan

The figure can be seen that from cycle 1 to cycle 2 has increased with an average score of student interest in learning cycle 1 of 2.955 with good criteria to 3.37 with very good criteria in cycle 2 so that the application of the TGT model in learning can increase the learning interest of fifth grade students of State Elementary School 2 Babakan. The results of this study are in line with the results of research conducted by Sukasih (2018: 224-229) which shows that the application of the TGT type cooperative learning model in Civics learning for grade V students in the 2015/2016 academic year at Elementary School No. 1 Darmasaba can increase student interest in learning. It is also in accordance with what is stated by Musdalipa; et al. (2022) that the TGT learning model aims to improve students' ability and interest in understanding the subject matter through games and competition. The increase occurred because in the TGT learning model not only group discussions, but there were tournament games and group awards. At the games tournament stage, it is seen to be able to activate and foster student interest in the learning process because they are trained to compete healthily in class in order to make their group a super group.

Based on observations of student activity in class, interest increased also due to the use of diagram board media at the stage when the teacher explained the material. Learning media when delivering material in class can increase student interest in learning (Supriyono, 2018:3-48). Agree with Magdalena et al (2021) that the use of media during learning can arouse students' desire and new interest in learning. This is shown when the

teacher presents the material with the help of a diagram board, making students more focused and attentive to the teacher. Students can also understand the data presentation material easily because the teacher instructs students to try it directly and students enthusiastically want to try it. So, it can be concluded that the media also greatly affects student interest in learning.

2. Learning Achievement

Learning achievement can be said to be the level of one's success in learning. Pratiwi et al (2018:192-201) state that learning achievement is the result obtained by students in their learning efforts. Learning achievement is measured by the results of evaluation tests carried out at the end of the cycle. The TGT Learning Model can improve the learning achievement of fifth grade students of Public Elementary School 2 Babakan from cycle 1 to cycle 2. The data obtained based on the evaluation results can be presented in the table below:

Table 3. Improving Learning Achievement Fifth Grade Students of State Elementary School 2 Babakan

Cycle	Average Value	Completed	Not Completed	Percentage of Completion
Pre-Action	54.65	6	20	6/26 x 100% = 23%
I	62.88	12	14	12/26 x 100% = 46.15%
II	83.65	24	2	24/26 x 100% = 92.31%

The percentage of completeness of learning achievement results before the implementation of the TGT model based on the final grade of semester 1 is only 23%, namely out of 26 students there are 20 students who have not reached the KKM value of 64 and 6 students who have reached the KKM. Cycle 1 after the application of the TGT learning model that has been carried out has begun to increase, namely 46.15%, consisting of 26 students, 14 students have not reached the KKM and 12 students have reached the set KKM. This is stated to have not yet reached the success indicator of 75%. Achievement increased in cycle 2 obtained a percentage of completeness of 92.31% out of 26 students who had not completed only 2 students and 24 students had reached the specified the set KKM. This was declared to have reached the predetermined success indicator, namely meeting classical completeness of 75% and declared successful. It is

concluded that learning achievement has increased from cycle 1 to cycle 2, to make it easier it can be seen in Figure 2 below:

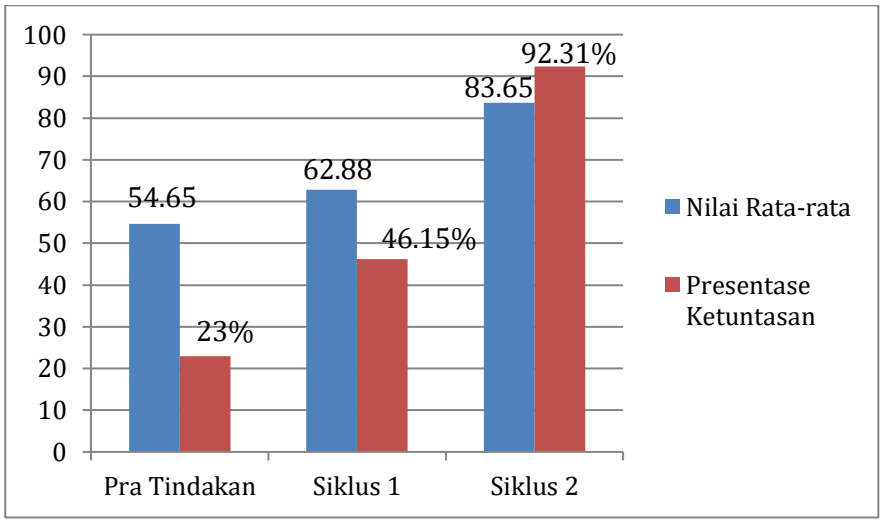

Figure 2. Histogram of Learning Achievement Improvement Fifth Grade Students of State Elementary School 2 Babakan

The histogram in the figure shows an increase in student learning achievement from before the action to after the action. In the pre-action, the average score was 54.65 with a completeness percentage of 23% with insufficient criteria, increasing in cycle 1 with an average score of 54.65 with a completeness percentage of 46.15% with sufficient criteria. Cycle 2 got an average score of 83.65 with a percentage of completeness of 92.31% with excellent criteria. The criteria in cycle 1 were marked as not meeting the classical success indicator of at least 75% because in cycle 1 it was still adjusting to the model applied by both teachers and students so that it was not optimal in learning. This affected student learning achievement which was not optimal because based on observations of teacher and student activities during the learning process in cycle 1 there were still students who did not contribute to their groups, there were students who were still less active and when conducting game tournaments students were still confused and still needed to be directed. Cycle 2 has increased and has met the predetermined success indicators, as evidenced by students starting to contribute to their groups by being given more direction and guidance by the teacher so that students are more active in the learning process. In addition, students have begun to be independent in conducting game tournaments and have done so well and regularly according to predetermined rules. In general, the increase in student

learning achievement results in cycle 2 is because during the learning process in cycle 2, maximum efforts were made to improve the constraints in cycle 1.

The learning steps of the TGT model with the help of a diagram board in the mathematics subject of data presentation material can affect the improvement of student learning achievement along with increasing student interest in learning at each meeting. Like the interest expressed by Bakar (2020:39-46) that interest in learning has an important role in determining student learning achievement. The existence of interest in learning within themselves makes students focus their attention and concentrate well. The TGT learning model contains elements of games and competition so that students feel challenged in learning and students become eager to compete for victory. This is in accordance with Hidayat (2016) that the TGT model can involve the activities of all students without any status differences and can involve the role of students being peer tutors and contains an element of play. The existence of games in learning can foster student enthusiasm in learning and there is no element of student coercion so that it can improve student achievement.

The TGT learning model according to Rusman (2014) has 5 steps or syntax, namely class presentations, teams, games, tournaments, and team recognition. At the games and tournament stage, students are given questions related to the material that has been presented by the teacher and the implementation of teamwork played on a tournament table with 4-6 students each representing a different team. The purpose of this stage is to test students' abilities obtained during the learning process. The existence of games and tournament stages makes students continuously practice questions at each meeting so that students will get used to it and students can improve their understanding of the questions that have been given.

Based on several studies that have been conducted previously, there is research that has similarities using the TGT model conducted by Surya (2018:154-163) with the title Application of TGT Type Cooperative Learning Model to Improve Mathematics Learning Outcomes of Fifth Grade Students of Public Elementary School 003 Bangkinang Kota. The results of this study indicate that with the application of the TGT Cooperative learning model, the mathematics learning outcomes of fifth grade students of Public Elementary School 003 Bangkinang Kota increased as evidenced in cycle 1 of 33 students, who reached completeness of 20 students, increasing in cycle II with 29

students who had reached the KKM. This shows that the TGT learning model can improve the mathematics learning outcomes of fifth grade students at Public Elementary School 003 Bangkinang Kota.

CONCLUSIONS

Based on the research that has been conducted in the fifth grade of Public Elementary School 2 Babakan and the discussion that has been presented, it can be concluded that the application of the TGT model assisted by diagram board media can increase student interest and learning achievement in Mathematics subjects on Data Presentation material. This can be proven based on student interest in cycle 1 to cycle 2 has increased with an average score of student interest in learning cycle 1 of 2.955 with good criteria to 3.37 with very good criteria in cycle 2. The average student learning achievement results from the initial data before the action to cycle 1 amounted to 8.23 and from cycle 1 to cycle 2 experienced an increase of 20.77 with student learning completeness in cycle 1 increasing from 26 students who reached completeness as many as 12 students (46.15%) and students who did not complete as many as 14 students (53.85%). Meanwhile, in cycle 2, 24 students (92.31%) were completed and 2 students (7.69%) were not completed.

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