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COOPERATIVE LEARNING MODEL TYPE TEAM GAME TOURNAMENT (TGT) AND ITS INFLUENCE ON LEARNING OUTCOMES IN MATHEMATICS SUB-CHAPTER MULTIPLE

(Case Study of Class II Lumansari State Primary School Kendal, Central Java)

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Abstract

The purpose of this study was to determine whether the cooperative learning model of the Teams Game Tournament (TGT) type had an effect on the learning outcomes of Grade II Elementary School Student (EST) Number 2 Lumansari in the Mathematics subject of multiplication material. The research method used is an experiment with a quantitative approach. The form of design in this study is a Quasi Experimental Design with a Nonequivalent Control Group Design research design. The population used in this study were Lumansari EST 2 students for the 2021/2022 school year, a total of 151 students. The sample studied was class II A of 15 students as the control class and class II B of 15 students as the experimental class. The sampling technique is random sampling. There are two data collection techniques used, namely observation sheets and tests. Based on the results of hypothesis testing with the help of SPSS using an independent sample t-test on the post-test data for the experimental class and the control class showed a sig. (2-tailed) of 0.000 <0.05, it can be concluded that Ho is rejected and H1 is accepted. So it can be concluded that there is an influence of the TGT type cooperative learning model on the learning outcomes of class II students in the Mathematics subject of multiplication material at EST 2 Lumansari. Student learning outcomes based on the results of the experimental class post test after being given the treatment of the Teams Game Tournament (TGT) cooperative learning model got an average score of 89.00 while the control class with the conventional learning model expository method got an average score of 77.33.

Keywords: Cooperative Learning Model Teams Game Tournament (TGT) Type, Learning Outcomes, Mathematics

INTRODUCTION

The low mathematics learning outcomes for students are usually caused by the use of inappropriate learning methods or models, because the teacher usually dominates learning activities and is only teacher-centered. In addition, more often using conventional learning models in the learning process which can also be one of the causes of low student learning outcomes (Lestari and Irawati, 2020: 52).

Based on the results of interviews between the researcher and the homeroom teacher for class II Lumansari 2 elementary school the result was that the learning

problems of class II students at Lumansari 2 elementary school were that in mathematics there were still many who could not calculate multiplication, the teacher needed a long time to explain multiplication material to students until they understood. The value of each student is given practice questions on multiplication material, there are still many that are not completed because they get scores below 70. One of the causes of the low grade II grade students at Lumansari 2 elementary school on multiplication material, one of which is students who are not serious when participating in class learning and many do not pay enough attention to the teacher in receiving multiplication material when learning mathematics takes place. Apart from that, one of the reasons is because in the last two years there has been a corona virus pandemic which has required students to study online at their respective homes (Sumirah, wawancara, 11 Oktober 2021).

This was proven when researchers directly made observations in class II of Lumansari 2 elementary school when limited face-to-face learning was implemented on November 4, 2021 when the teacher was delivering the subject matter, many students were having fun chatting and joking with their classmates, busy playing alone, there were even also those who looked less enthusiastic when listening to the teacher's explanation, there were students who were sleepy during class hours, there were those who ran when the teacher was explaining the subject matter. When the researcher tried to provide multiplication material questions, many students were still confused about answering the questions given by the researcher, many students felt unfamiliar with the questions given, even though they had previously been taught by the class II homeroom teacher on multiplication material. When working on questions, students only answered carelessly. The results showed that the students' scores on the multiplication material based on the questions that the researcher gave showed that many students got incomplete grades because they were below 70. There was only one student who passed because he got a score above 70 (above the KKM set in class II Lumansari 2 elementary school) .

Based on the results of interviews and observations conducted by researchers and what has been described above, the problems found in class II at Lumansari 2 elementary school are that students still do not master multiplication material, because many students still have difficulty understanding it. Elementary/MI students should have mastered the multiplication material, because multiplication is the basic thing that

can help students understand the material in the next mathematics subject. The cause of students not mastering multiplication material so that it affects the low results of students' scores in mathematics subject multiplication material, researchers hypothesize that the reason is not only because online learning is carried out so that teachers cannot provide maximum learning to students, but the lack of implementation of varied and appropriate learning models according to the subject matter being taught.

In the implementation of learning, teachers only use conventional learning models, and this is usually done. So that the enthusiasm of students in learning in class is lacking, students in learning become passive because they just listen to explanations from the teacher without being actively involved in the slightest, and students do not all understand the concept of multiplication material being taught, so they are not serious in participating in learning. Based on the problems and causes that have been found, it is necessary to strive to apply learning models that are able to overcome these problems. Researchers will provide a solution by conducting experimental research that has elements of the game, namely by applying the cooperative learning model of the Teams Game Tournament (TGT) type.

Based on the findings of previous research conducted by Sutriani Inda Lestari in 2019 and research conducted by Harjoko in 2014, they proved that applying the Teams Game Tournament (TGT) cooperative learning model in teaching and learning activities can affect student learning outcomes. , the effect can improve student learning outcomes. This also strengthens one of the reasons researchers took the TGT cooperative learning model in conducting experimental research in class II Lumansari 2 elementary school

LITERATURE REVIEW

Suprihatiningrum (2013: 145) defines that, "a learning model is a systematic framework that contains learning procedures to manage student learning so that learning objectives can be achieved." So the learning model is a framework or general description of a learning activity that has specific learning objectives. Cooperative learning which is defined as cooperative learning is a learning model that can train students to be able to interact socially in class with their group mates.

Many experts interpret and define cooperative learning models. Isjoni (2016: 15-16) means that, "Cooperative learning or commonly called cooperative learning comes from the word cooperative which means helping each other and getting things done together in a team." Slavin (in Isjoni 2016: 15) defines that, "A learning which in its implementation requires students to work in groups whose members are selected by the teacher is the notion of cooperative learning." Bern and Erickson (in Komalasari, 2014: 62) define that, "Cooperative learning is a study group where the success or failure of a study group depends on the cooperation of each member." So the cohesiveness of team members is very influential. Hosnan (2014: 234) defines that, "The cooperative learning model is learning that must prioritize the formation of groups." Sanjaya (2014: 242) defines that, "Cooperative learning is the formation of heterogeneous learning groups".

One of the cooperative models is the Team Game Tournament (TGT) Slavin (2015: 163) defines that, "The Teams Game Tournament (TGT) type cooperative learning model is an academic game in a study that is carried out in groups, because each group competes with opponents who have the same capabilities." Meanwhile Huda (2014: 116-117) defines that, "Learning that teaches students to compete in a healthy or fair manner to get the best results in their group is the understanding of the cooperative learning model of the Teams Game Tournament (TGT) type."

The application of the TGT learning model will be juxtaposed with the conventional learning model in the form of the expository model in the multiplication sub-chapter for class II mathematics at Lumansari 2 elementary school. The experiment will determine the effect of using the TGT learning model with the expository Conventional Model on student learning outcomes. In this study, what is called learning outcomes quotes the statement of Suprijono (2013: 5) defines that, "Learning outcomes are a change that exists in individuals which can be seen from attitudes, skills, and being able to implement the results of the values obtained in everyday life. ." Kunandar (2013: 62) defines that, "Learning results are something that can be seen directly from the abilities that exist in individual students after receiving lessons from the teacher in the classroom whose results can be seen from both the

affective, psychomotor, and cognitive aspects." This means that students can obtain learning outcomes after carrying out learning activities.

METODOLOGY

Researchers used experimental research methods with a quantitative approach. The form of design used in this research is Quasi Experimental Design or commonly called quasi-experimental. In Quasi Experimental Design, the researcher uses the Nonequivalent Control Group Design research design. The two classes, namely the experimental class and the control class, were both given tests in the form of pre-test questions and post-test questions. But only one class, namely the experimental class, was given treatment in the form of a TGT cooperative learning model.

The population of this study is students Lumansari 2 elementary school for the 2021/2022 academic year. The total number of students is 151 students. The research sample studied was class II A, totaling 15 students as the control class and class II B, totaling 15 students as the experimental class, totaling 30 students in total. The sampling technique uses random sampling which is a category of probability sampling technique, because the sample members are taken from the population which is done randomly because the class at Lumansari 2 elementary school is homogeneous because there is no superior class.

In this study the tests tested used pre-test questions and post-test questions in the form of multiple choice items. Pre-test questions are given before learning begins or before being given treatment to students in the control class and in the experimental class. While the post test questions were given after learning was completed in the control class and in the experimental class. The test questions in this study were in the form of multiple choice questions pre-test and post-test, each of which consisted of 20 questions.

In testing the research instrument, the researcher tested the instrument in the form of test questions on upper class students (not class II). After the researcher tested the test instrument, then the researcher processed the data by testing the validity, reliability, level of difficulty, and discriminating power of the items.

The results of the calculation of the validity test with the product moment correlation formula show that the results in the 1st validity test contained 6 items whose results were invalid and 24 items whose results were valid, then the researcher tested the 2nd validity to confirm again. In this test, items that are already valid are tested again, and do not test items whose results are invalid. The results of the second

validity test contained 24 valid questions and 4 items were discarded and were not used by researchers in conducting research, because there were more than two learning indicators in these items. So the researchers only used 20 items on the pre-test and post-test instrument questions.

In testing the reliability of the test item instrument with the KR 20 formula from Kuder-Richardson the reliability test results obtained by the researcher, the r11 value of 0.82 means that the test instrument is reliable, because the value of $r11 > 70$, the item is said to be reliable. Statistical data analysis techniques which include descriptive statistical data analysis and inferential statistical data analysis techniques are used by researchers in analyzing the research data. To test the hypothesis using the t-test statistical test (t-test), namely the independent sample t-test. Before testing the hypothesis, the researcher conducted a prerequisite test which included the normality test and homogeneity test.

RESULT AND DISCUSSION

Researchers conducted research at Lumansari 2 elementary school by taking the population of all grade II students. Before carrying out the research, the researcher tried out the test questions as many as 30 items to students of class II and above. In the test of the instrument test the researcher got 33 students as respondents. The test results that the researchers got then the researchers tested for validity, reliability, level of difficulty, and discriminatory power. In the end, the researchers took 20 valid questions to serve as pre-test and post-test questions.

Researchers began to conduct research in the experimental class, namely class II B by conducting learning using the cooperative learning model of the TGT type, while the control class, namely class II A, carried out learning using the conventional learning model of the expository method. From each class the researcher gave pre-test questions (before learning) and post-test (after learning). Based on the results of the research that was carried out in class II Lumansari 2 elementary school, the researcher obtained data from the results of the instrument test questions tested to find out student learning outcomes and observation sheet instruments to obtain results from the implementation of learning in the experimental class using the TGT type cooperative learning model and the control class using the expository method by observing and assessing students of one class during learning in the two classes.

The results of the descriptive analysis that the researchers carried out showed that there were differences in the learning outcomes of the students in the experimental class and the control class, seen from the average results of the pre-test and post-test. Class II A as the control class which is taught using the conventional learning model of the expository method gets an average score (mean) on the pre test data of 44.67 and post test 77.33 while class II B as the experimental class is taught using the cooperative learning model the TGT type gets an average value (mean) in the pre-test data of 40.33 and 89.00 in the post-test.

Based on these results, before the implementation of learning the two classes had almost the same average, in the sense that the difference was not too high. After the implementation of learning with different treatments, the post-test results of the experimental class that were taught using the TGT cooperative learning model had a higher average compared to using the conventional expository learning model. It was also proven from the results of the observation that students who were taught using the TGT model obtained an average of 3.7 in the very good category, while those who were taught using the conventional learning model of the expository method obtained an average of 3.1 in the good category.

In testing the research hypothesis, researchers used SPSS assistance and the results are as follows.

Table of Hypothesis Test Results

Statistical test	Post Test	Mean	Deviation	Sig (2-tailed)	Note
Independent Sample T-Test	Experimental class	89.00	11,67	0,000	effected
	Control class	77.33			

Based on the results of hypothesis testing on the Independent Sample T-Test as in the table above, obtaining a significance value of 0.000 <α = 0.05, this indicates that H1 is accepted, the conclusion is that there is an influence on the learning outcomes of class II students at SDN 2 Lumansari on subjects Mathematics multiplication material after the implementation of the Teams Game Tournament (TGT) cooperative learning model. The magnitude of the effect can be seen from the difference in average learning outcomes after being treated with the TGT cooperative learning model of 89.00 for

the experimental class which is higher than the conventional learning model of the expository method of 77.33 for the control class.

So the results of this study prove that the TGT type cooperative learning model has an effect on the learning outcomes of class II students at Lumansari 2 elementary school on multiplication material, because when compared to applying the conventional learning model of the expository method the results are higher using the TGT type cooperative learning model so that this learning model can improve student learning outcomes. During the study in the experimental class and the control class the researcher observed differences in students in class II A and class II B at Lumansari 2 elementary school before and after applying the learning model. Students are more enthusiastic and happy to take part in learning using the TGT type cooperative learning model, students are more active, students can work together to discuss completing assignments given by researchers with their group mates, students who previously had difficulty understanding multiplication become younger because if there are students who don't understand can ask their peers who are in the same group who have higher abilities in the sense that they already understand the multiplication material, and students are even more enthusiastic about participating in learning because they get rewards or prizes as the best group so that in the implementation of game tournaments they compete very well and answer questions correctly

CONCLUSION

Based on the research results obtained by the researcher, it can be concluded that based on the results of hypothesis testing using the t test (Independent Sample T-Test), the results of calculations on the post-test data for experimental and control classes show a sig. (2-tailed) of 0.000 <0.05, it can be concluded that Ho is rejected and H1 is accepted. So it can be concluded that there is an influence of the TGT cooperative learning model on the learning outcomes of class II students in the Mathematics subject of multiplication material at Lumansari 2 elementary school. To find out how big the effect is by looking at the difference or comparison of the average learning outcomes after being given the TGT type cooperative learning model for the experimental class and the conventional expository method learning model for the control class. The average post-test score for the experimental class was 89.00 while the control class was 77.33, meaning that the learning outcomes in the experimental class were higher than those in the control class. So that this research was able to prove

that the Teams Game Tournament (TGT) type cooperative learning model has an effect on student learning outcomes in the Mathematics subject of multiplication material because it can improve student learning outcomes.

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