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APPLICATION OF THE TEAMS GAMES TOURNAMENT (TGT) LEARNING MODEL TO IMPROVE STUDENT LEARNING OUTCOMES IN JUNIOR HIGH SCHOOL

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Abstract :

The problem that often occurs is that many students consider learning to be unimportant. As a result, this leads to low learning outcomes among students. Therefore, a Teams Games Tournament (TGT) model is needed, which involves students taking on the role of peer tutors and incorporates elements of play. The aim of this research is to determine the learning outcomes of students using the Teams Games Tournament (TGT) approach. The research method used is a quasi-experimental study with a control group pretest-posttest design. The population in this study consists of all students from SMP Negeri 13 Banda Aceh. Sampling was done using random sampling, with class VIII-4 as the experimental group and class VIII-2 as the control group. The data analysis technique used was the t-test, resulting in . Because , it can be concluded that the learning outcomes of students using the Teams Games Tournament (TGT) model are better than those from conventional learning in junior high school students

INTRODUCTION

Mathematics is the Queen of the Sciences, meaning it is a discipline that stands alone and does not rely on other sciences. Mathematics learning is the teaching and learning process conducted by teachers and students to enhance students' creativity in thinking, enabling them to construct new knowledge and master mathematical material (Susanto, 2016). Mathematics is essential in daily life as well as in other fields of science, such as trade, industry, health, technology, and science (Ruseffendi, 2005). Given the importance of mathematics, students must truly master this subject.

The purpose of mathematics education is to prepare students to face the rapidly changing global environment by practicing logical, rational, critical, meticulous, honest, efficient, and effective thinking. There are five reasons for learning mathematics: (1) it serves as a means of clear and logical thinking, (2) it helps solve everyday problems, (3) it helps recognize patterns and generalize experiences, (4) it fosters creativity, and (5) it increases awareness of cultural developments (Abdurrahman, 2012). Thus, studying mathematics is vital for adapting to the

surrounding world and keeping pace with ongoing developments. The difficulty in understanding mathematics is reflected in the low academic results of students.

The low academic performance can also be seen on an international scale. According to the TIMSS study in 2015, Indonesia ranked 45th out of 50 participating countries, with an average score of 397, compared to the international average of 493 (Gurria, 2016). Additionally, the PISA survey in 2018, which assessed 600,000 15-year-olds from 79 countries, found that Indonesia had a mathematics score of 379 and a science score of 396, placing it in the bottom ten (OECD, 2019). The results of the TIMSS and PISA studies indicate that Indonesian students' mathematical abilities are still considered low. Furthermore, preliminary observations conducted by the researcher at SMP Negeri 13 Banda Aceh revealed low student learning outcomes based on interviews.

From the initial observations at SMP Negeri 13 Banda Aceh, interviews with mathematics teacher Ibu Nuraini, S.Pd. indicated that students' learning outcomes are still below the Minimum Completeness Criteria (KKM). A student is considered to have completed their learning if they score 70, and if 80% of the class achieves this score, then the class is considered complete. In class VIII of SMP Negeri 13 Banda Aceh, only 6 out of 27 students (22.22%) scored 70, while the remaining 21 students (77.77%) scored below 70 in mathematics based on their test results.

Among the mathematics learning outcomes observed, the topic of Linear Equations in Two Variables (SPLDV) is one that students struggle to master. Most students can only solve problems that mirror examples provided by the teacher; if the problems are altered in form or numbers, they are unable to solve them. This difficulty arises from weak conceptual understanding and lack of attention during the teacher's explanations of SPLDV. Students often find mathematics uninteresting and difficult, typically waiting for a peer to solve a problem and then copying their answer without understanding.

The mathematics learning process observed in class VIII at SMP Negeri 13 Banda Aceh was largely monotonous and lacked variety, contributing to: (1) low student mastery of the SPLDV material, (2) overall low student learning outcomes, (3) average test scores below 70, which is less than the KKM of 70, and (4) a general lack of active student involvement in the learning process, with students working individually rather than collaboratively.

To address these issues, the teacher's role is crucial in achieving student learning outcomes. Selecting appropriate models based on the material, using suitable media, and designing a conducive classroom atmosphere are essential. One effective teaching model that can make learning more engaging is the cooperative model. The Team Game Tournament (TGT) model is a cooperative learning approach that places students in learning groups of 5 to

6 members, incorporating diverse abilities, genders, and backgrounds. The teacher presents the material while students work within their groups (Amroellah, 2020).

The TGT model emphasizes active student participation, fostering understanding of the material being studied. All students are involved without status differences, taking on roles as peer tutors while incorporating elements of games and reinforcement. In this model, students are required to solve problems collaboratively and then individually in a game format, where the game results impact the group's score (Putra et al., 2014).

The steps to implement the TGT model are: (1) a class presentation by the teacher on the material to be learned; (2) forming heterogeneous groups of 4-5 members; (3) conducting a tournament as a game structure at the end of the week or after completing a subtopic, following the teacher's presentation and group work; and (4) awarding groups based on their tournament results (Astuti & Istiqomah, 2015).

This research parallels previous studies that also implemented the TGT model in the learning process. However, the difference lies in the focus of this study, which aims to enhance student learning outcomes in mathematics, particularly on the topic of Linear Equations in Two Variables, by applying the TGT model.

RESEARCH METHOD

This type of research is a Quasi-Experimental Design. The study uses an experimental class and a control class, with both classes receiving a pretest at the beginning of the learning process and a posttest at the end. The experimental class will be treated with learning using the Teams Games Tournament (TGT) model, while the control class will be taught using conventional learning methods. After the learning process is complete, students' learning outcomes will be assessed again using a posttest. Similarly, in the control class, a pretest will be administered before the learning takes place, and then, after the conventional learning process is completed, a posttest will be given to observe the students' progress.

Table 1. Research Design

Kelompok	*Pre-test*	Perlakuan *(treatment)*	*Post Test*
Eksperimen	O_1	X_1	O_2
Kontrol	O_1	-	O_2

The population in this study consists of eighth-grade students at SMP Negeri 13 Banda Aceh. The sample selected for the study includes two classes: class VIII-4 as the experimental class and class VIII-2 as the control class. The sampling technique used by the researcher is random sampling. In this research, the data collection instruments include pretest and posttest

questions, as well as lesson plans (RPP) utilizing the TGT learning model to assess students' learning outcomes.

The data collection technique involves testing, specifically an initial test (pretest) administered to students before treatment and a final test (posttest) given after treatment, with each consisting of four essay questions.

Data analysis is performed by summing the students' learning outcomes based on predetermined scores. Subsequently, data processing involves normality and homogeneity tests as prerequisites for hypothesis testing using the t-test. The hypothesis formulation is as follows:

a. H0: The learning outcomes of students taught with the Teams Games Tournament (TGT) model do not differ from those taught with conventional learning methods.
b. H1: The learning outcomes of students taught with the Teams Games Tournament (TGT) model are better than those taught with conventional learning methods.

RESULTS AND DISCUSSION

Research Findings

Based on the calculations, the average score, variance, and standard deviation for the pretest data in the experimental class were found to be [insert values], while for the control class, the average score, variance, and standard deviation were [insert values]. For the posttest data, the experimental class achieved an average score of [insert values], variance of [insert values], and standard deviation of [insert values], while the control class had an average score of [insert values], variance of [insert values], and standard deviation of [insert values].

1. Normality Test

The pretest data for the experimental class showed a distribution of [insert results], indicating that the pretest data for the experimental class is normally distributed. The pretest data for the control class yielded [insert results], suggesting that this data is also normally distributed. For the posttest data, the experimental class resulted in [insert results], confirming that the posttest data for the experimental class is normally distributed. The posttest data for the control class showed [insert results], indicating a normal distribution as well.

2. Homogeneity of Variance Test

The results of the homogeneity test indicated that the value for the pretest data was [insert values], concluding that there is no significant difference in variance between the pretest data of the experimental and control classes. For the posttest data, the value obtained

was [insert values], leading to the conclusion that there is also no significant difference in variance between the posttest data of the experimental and control classes.

3. Hypothesis Testing

Based on the hypothesis testing conducted using the t-test, with the criteria "if [insert criteria], then H0 is rejected and H1 is accepted; if [insert criteria], then H1 is rejected and H0 is accepted," the test yielded a value of [insert values] with degrees of freedom (df) = 52 at a significance level of [insert significance level]. From the t-distribution table with 52 degrees of freedom, the critical value was [insert value]. Since [insert comparison], H0 is rejected and H1 is accepted. Thus, it can be concluded that the learning outcomes of students taught with the Teams Games Tournament (TGT) model are better than those taught with conventional methods in SMP.

DISCUSSION

Based on the data analysis conducted, it shows that the learning outcomes of students using the Teams Games Tournament (TGT) model are superior to those taught with conventional methods. This conclusion is also supported by Erni Gusti's research titled "Implementation of Cooperative Learning Model Type Team Game Tournament (TGT) on the Topic of Linear Equation Systems and One Variable Inequalities to Improve Student Learning Outcomes," which found that the application of the TGT model can enhance the learning outcomes of students in class X.3 at SMAN 1 Perhentian Raja. This was evidenced by the successful implementation of the cooperative learning model (Gusti, 2018).

The TGT model divides students into diverse groups of five or an odd number. All group members are involved in completing tasks, and the activities include competitive academic games, fostering communication, interaction, and collaboration among students. This approach encourages students to engage actively in learning and work in teams. Such activities provide students with hands-on experience, allowing the knowledge they gain to be retained longer (Jainuri, 2015).

The TGT model consists of four steps: Class Presentation: The teacher presents the material on linear equations and inequalities, posing questions to enhance students' understanding. Group Work: Students communicate with their group members while completing worksheets, allowing those who do not understand the material to learn from their peers, with the teacher guiding each group. This active learning approach helps students gain direct learning experiences, making it easier for them to grasp concepts. Tournament, This is when students participate in games after the teacher has completed the material presentation

and formed teams. Students solve questions from the question cards provided by the teacher within a set time. Group Awards, Scores are given to groups based on their tournament performance (Nurhayati & Marliani, 2019).

In contrast, direct instruction involves students passively listening to the teacher, leading to less active engagement in the learning process. Compared to the TGT model, students are more active in collaboration, communication, and problem-solving. This aligns with Sumaryati's statement, "Mathematics is still considered a difficult, boring, and even intimidating subject." This perception may arise from students' lack of active involvement in the learning process (Sumaryati, 2017).

CONCLUSSION

Based on the research and data analysis conducted on the Teams Games Tournament (TGT) model and its effect on the learning outcomes of junior high school students, a value of [insert value] was obtained with degrees of freedom (df) = 52. At a significance level of [insert significance level] and with 52 degrees of freedom, the t-distribution table yielded [insert critical value]. Since [insert comparison], it can be concluded that the learning outcomes of students taught using the Teams Games Tournament (TGT) model are better than those of students taught with conventional methods in junior high school.

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