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Application of Cooperative Learning Type Team Game Tournament (TGT) to Improve Students' Mathematics Learning Outcome

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ABSTRACT

The aims of this research is increase the math's study achievement by applied time game tournament of Cooperative Learning Type in 2011, on the subject matter of relations and functions. This research uses a learning model of Team Game Tournament type. This research consists of the following stages: (1) initial reflection; (2) planning; (3) implementation of the action; (4) observation; (5) reflection. Researchers perform needs analysis, then prepare the material to be presented, as well as the necessary tools and tools in the form of syllabus, learning implementation plan, student worksheet, envelope cards, numbered cards and game scoring sheets. Furthermore, learning is presented as many as eight meetings in two cycles, with subjek is 33 students. Average learning outcomes of students had an increase compared to the baseline score of 54.06 in the daily test I increased to 73.33, in the daily test II 66.36.

Keywords: *Cooperative Learning Model, Team Game Tournament Type*

Introduction

Mathematics learning as part of school education should be aimed at activities that encourage students to learn actively, mentally, illectually, physically and socially to understand mathematical concepts. In the development of competency standards and basic mathematical competence. In addition it is also intended for the development of the ability to use mathamatics in problem solving and communicate ideas or ideas Based on the observations that researchers do in schools, the learning process is still teacher centered or teacher-centered. Therefore it is necessary to implement the learning that can activate and develop the activities of students, teachers are expected to be professional and able to carry out

various types of strategies, as well as appropriate solutions to the problems that have been put forward, there should be a model of learning that can enable students in the process of learning to improve math result of learning mathematics of student.

Based on the observations that researchers do in schools, the learning process is still teacher centered or teacher-centered. Teachers only use lecture methods, group discussions that is by doing student worksheet together with friends and less use methods that vary during the learning process. Therefore it is necessary to implement the learning that can activate and develop the activities of students, teachers are expected to be professional and able to carry out various types of strategies,

as well as appropriate solutions to the problems that have been put forward, there should be a model of learning that can enable students in the process of learning to improve math result of learning mathematics of student.

The purpose of this research is

1. Improving the results of mathematics learning of students in grade VIII2 public junior high school 24 Pekanbaru after applying Cooperative Learning Type team game tournament on the subject matter of relations and functions.
2. Increase the activity of teachers and students of class VIII2 public junior high school 24 Pekanbaru after applying Cooperative Learning Type team game tournament on the subject matter of relations and functions

Learning is a process of work done by a teacher to gain a new change, as a result of his own experience in interaction with his environment. According Trianto (2010) learning essentially is a process that is marked by a change in a person. Changes as a result of the process, learning can be indicated in various forms such as changing knowledge, understanding, attitudes and behavior, skills, skills and abilities as well as changes in other aspects that exist in the learning individual. While Sardiman (2010) defines learning as an attempt to master the material science that is part of the activity towards the formation of a whole personality. Furthermore Slameto (2010) that learning is a process of business undertaken by individuals to obtain a change in behavior as a whole, as a result of individual experience itself in interaction with the environment. Furthermore, Sardiman (2010) said that learning is a

change of behavior or appearance, with a series of activities such as reading, observing, listening, imitating and so forth.

From the statements about learning and learning it can be concluded that learning is a process marked by a change in a person, and the change does not always have to produce improvement.

Education is inseparable from learning, in learning has a purpose and one of them is the result of learning. According Purwanto (2010) learning outcomes is a change in student behavior due to learning. The change was sought in the process of teaching and learning to achieve educational goals. Changes in individual behavior as a result of learning are not single. Each learning process affects behavior changes in a particular domain in the student's self, depending on the desired change occurring in accordance with the educational objectives. According to Nana (1991) that student learning outcomes are essentially behavioral changes that students want. This change can be shown in the form of knowledge, understanding, attitudes and abilities. Therefore, a teacher who wants to know whether the learning objectives can be achieved or not, he can conduct an evaluation at the end of the learning process. Thus, the learning outcome is a change that occurs after the learning process in the form of test scores at the end of the subject matter.

From the above statement can be concluded that the results of learning is the result achieved by students after carrying out learning that includes mastery of knowledge and skills expressed by the assessment

Cooperative learning is a learning system that provides opportunities for students to work with fellow students in structured

tasks Anita(2008). Furthermore⁸ according to Isjoni (2010) states that cooperative learning is a learning strategy with a number of students as members of small groups with different levels of ability. In completing the task of the group, each student group member must cooperate with each other and help each other to understand the subject matter. According to Eggen and Kauchak (in Trianto, 2010) mentions that cooperative learning is a group of instructional strategies involving students working in collaboration to achieve common goals. Furthermore, according to Trianto (20¹⁰) in cooperative class, students study together in small groups consisting of 4-6 students who are equal but heterogeneous, ability, gender, ethnic / race, and each other help each other. The group's goal is to provide an opportunity for all students to be actively involved in the thinking process and learning activities. During work in groups, the task of group members is to achieve the completeness of the material presented by the teacher, and help each other's group to achieve mastery learning.

Cooperative learning models are developed⁴ to achieve at least three important learning objectives, namely academic learning outcomes, acceptance of diversity and the development of social skills. Ibrahim et al in Trianto (2010) there are six main steps or stages in learning that use cooperative learning. The steps are shown in the following table

Table 1: Steps of the Cooperative Learning Model

phase	Phase Teacher's behavior
Phase-1	Convey goals and motivate students Teachers deliver all learning objectives to be achieved in the lesson and

	motivate students to learn.
Phase-2	Presenting Master information presents information to students by way of demonstration or through reading material
Phase-3	Organizing students into cooperative groups The teacher explains to the students how their teachers form learning groups and helps each group to transition efficiently.
Phase-4	² Guiding group work and study Teachers guide learning groups as they do their work.
Phase-5	Evaluation Teachers evaluate learning outcomes about the material they have learned or each group presents their work.
Phase-6	Group awards

Rewarding² Teachers seek ways to appreciate both individual and group effort and learning outcomes.

From the description of the review of cooperative learning, it can be concluded that cooperative learning requires cooperation among students and interdependence in the structure of achievement of tasks, goals, and rewards. The success of this learning depends on the success of each individual and group, where success is very meaningful to achieve a positive goal in group learning

In the learning activities of mathematics a lot of learning strategies that can be applied so that students can understand the concept of mathematics well and create a fun learning conditions. One of the learning

strategies used is Team Game Tournament. According to Slavin (2010) TGT is generally the same as STAD except for one thing: TGT uses an academic tournament, and uses quizzes and an individual progress scoring system, where students compete as their team representatives with other team members of previous academic performance their equivalent. TGT is very often used with STAD combinations, by adding tournaments to the usual STAD structure. The components of cooperative learning type TGT according to Slavin (2010) are as follows: a) presentation in class, b) group activities, c) Games and Games, d) group awards, e) transfer.

Methodology

Research procedure

Below is a chart of the class action research cycle (PTK) according to Suharsimi (2008)

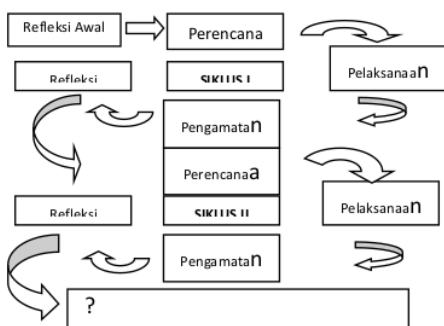


Figure 1. The Class Action Execution Cycle

A. Research Subject

As the subject of this study are students of class VIII2 public junior high school 24 Pekanbaru academic year 2011/2012 as many as 33 students consisting of 12 male students and 21 female students with high ability, medium and low.

B. Data Collection Techniques

1. Observation Technique

The observation sheet is filled by the observer by looking at the activities of the teacher and the student during the learning activities for each meeting. Learning should be carefully observed, seen smoothness, suitability and deviation from the plan, difficulties or obstacles encountered and other aspects related to the learning process.

2. Test Technique

This technique is used to obtain data about students' mathematics learning outcomes in the form of daily test questions on the subject matter of relations and functions.

C. Data Analysis Technique

Data analysis technique used is descriptive statistical analysis which aims to describe / describe data about student and teacher activity during learning process and data about student learning result of mathematics on subject matter of relation and function.

Research Result

1. Frequency Distribution Analysis

Improved learning outcomes can also be seen from comparing scores of students' learning outcomes after the action, ie daily repeat scores I and daily repetition II with a baseline score. To see the improvement of students' mathematics learning outcomes can be seen from the following frequency distribution tables:

Table 2. Frequency Distribution Analysis of Student Learning Outcomes Before Action, Cycle I and II

Nilai	Banyak Siswa Skor Dasar	Banyak Siswa Siklus I (UH I)	Banyak Siswa Siklus II (UH II)	Kriteria Nilai
16 – 30	6	3	0	Sangat Rendah
30 – 44	4	1	2	Rendah
44 – 58	9	3	5	Sedang
58 – 72	7	8	15	Sedang
72 – 86	5	6	10	Tinggi
86-100	2	12	1	Sangat Tinggi
Jumlah Siswa	33	33	33	

Source: processed data of researchers (Annex J1, Hal: 238)

From table IV.9 above, then the data of mathematics learning result of students showed that the number of students who included very low score on the basic score there were 6 students (18.18%), daily repeat I had 3 students (09.09%) and no daily test II or (00.00%). While the number of students who scored low (value under KKM 64) on the basic score there are 4 students (12.12%), daily test I have 1 student (03.03%), and on the daily test II there are 2 people students (06.06%).

Based on table IV.9 above, it can be described the frequency distribution of student learning outcomes in the form of polygons as follows:

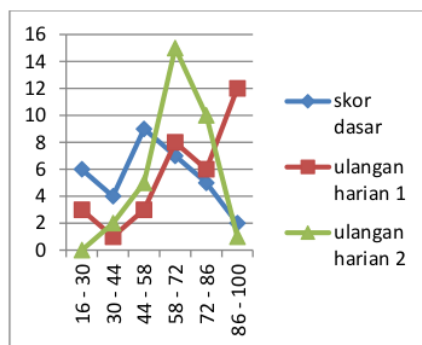


Figure 2. Polygon Analysis of the Distribution of Frequency of Student Learning Outcomes

Based on the above polygon, students' learning outcomes have increased, where the number of students who score low on the basic score (blue line) at intervals (16 - 58) is above the red line and green line and the number of students who score high in the daily test II (72 - 100) was above the blue line, but in the daily test II at intervals (86 - 100) decreased due to the level of difficulty of the subject matter on the basic competence. If seen in classical then the success of students increased from the basic score

Data analysis of the central tendency

Based on the results of Daily Deuteronomy I, II and the basic score obtained by the students, the improvement of students' mathematics learning outcomes can also be seen using the data of central tendencies, namely Mean, Mode, and Median. The data of the central tendency of student learning outcomes are as follows:

Table 3. Data Analysis of Central Tendency In Cycles I and II

Nilai	Nilai Dasar	Ulangan Harian I	Ulangan Harian
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			II
Rata – rata	54,06	73,33	66,36
Median	55	76	70
Modus	30	100	75

Source: Processed Research Data (Annex K1, Hal: 240)

In table 3 above seen student learning outcomes increased in daily repetition I and II of the basic score. The mean score of the students' basic learning scores increased on the daily test II of the baseline score, and the mean score of the students' learning outcomes in the daily test II increased from daily repetition I. On the mean score of 54.06 learning outcomes, on the daily I increased to 73.33, but in daily test II decreased 66.36 because the level of material difficulty in the daily test II is higher when compared with daily repetition I. So also with the mode of student learning outcomes is the mode of data on student learning outcomes on the base score 30, whereas in daily repeat I was 100 and daily repeat of II was 75, while median data of student learning result on base score was 55, and in daily repeat I was 76, and daily repeat II was 70.

Result and Discussion

Based on the experience of researchers during the learning process took place, the activity and interaction of students in the group very well. Visible students are more eager in learning and more participate in the learning process. In following each learning activity students try to understand the material by asking the teacher and also ask friends, attention to the students who presented the results of the discussion in front of the class.

It is also seen from the number of students who reach the KKM has an increase in daily repetition I and II of the basic score, which in daily test I student who reached KKM as many as 25 students or 75.75%. the number increased from the students who reached the KKM on the basic score that is only 10 students or 30.30% and 26 students or 78.78% in the daily test II

With the implementation of cooperative learning model with Team Game Tournament (TGT) type, students are given the opportunity to perform thinking activities because there is a class presentation from the teacher to support the students' work practice. Students in each group try to master the taught material and then ask each other questions to prepare the tournament and always active maximally as well as develop aspects of personality and cooperation responsibilities so that when appointed to deliver the answer can contribute scores for the group. Further communication will be established between students and students, students with teachers, so that learning will be effective and efficient because students are active and passionate in learning activities.

Conclusion

Based on the results of research that has been carried out in two cycles and the discussion on CHAPTER IV can be concluded that the application of cooperative learning with Team Game Tournament type can improve the results and learning activities of mathematics students of class VIII2 public junior high school 24 Pekanbaru. It is known from the number of students who reached KKM increased in daily repetition I and II of the basic score. The number of students who scored lower decreased in daily repetition I

and II of the baseline score, and the number of students who gained height increased in the daily test II of daily test 1.

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