



IMPLEMENTATION OF COOPERATIVE LEARNING MODEL TEAMS GAMES TOURNAMENT (TGT) ON LEARNING MATHEMATICS IN SMP N 12 PALEMBANG

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Abstract

This research aims to describe the implementation of learning mathematics by implementing cooperative learning model Teams Games Tournament (TGT). Implementation of learning views in student activities, teacher activities and learning result. The research subjects were students in 8.7th grades of Junior High School (SMP N) 12 Palembang which class consisting of 40 students. Data collection was done by observation and tests. Observation conducted to obtain data on the activities of students and teachers during the course of learning. Tests conducted to determine the completeness of student learning outcomes after using TGT. The results of student activity observations obtained average is 83.17 and the teachers activity is 82.57 both are means good categorized, and also the average of student learning outcomes is 87.17 completed categorized.. It is shows that the implementation of learning TGT performing well.

Key words: TGT, student and teacher activities, result learning

INTRODUCTION

Mathematics as a subject in school play an important role which aims to develop and establish personal learners accordance with the development of science and technology. Abdurahman (2003) states that Mathematics function to develop numeracy skills, measure, derive a formula and use it in life activity through the material measurement and geometry, algebra, and trigonometry. Based on the above explanation we can conclude that mathematics learning is an attempt to make students can develop mathematical thinking and the ability to count, measure, derive a formula and use it in life activity. Successful in mathematics learning one can be seen from the students understanding and utilizing mathematical understanding to solve problems of mathematics and other sciences. One of the scope of the Mathematics is geometry and measurement (Depdiknas:346). One of the material in geometry is Pythagorean Theorem which learned in grades 8th Junior High School (SMP).

Based on the information and experience of mathematics teacher of 8th grade in Junior High School 12 Palembang, said that the problems associated with the Pythagorean theorem. At that time, many students are not able to finish the material, about 50 % students didn't pass the study well. It was caused the students have difficulty, students are not trying to solve it by theirselves or with the help of friends and teacher, such as ask or propose to resolve the problem of difficulty in learning activities.

In the teaching and learning activities, the presence of known teaching purposes. Soedjadi (2000) suggested Teaching is a combination of the two activities of teaching and learning activities. Teaching activities regarding the role of the teacher in the context of seeking the creation of harmonious relationships and communications between learning and teaching. Communication fabric as an indicator of an activity or process that takes place with good teaching. Thus the purpose of teaching is the goal of a process of interaction between teachers and students in teaching and learning



activities in order to achieve the learning objectives.

In learning to achieve the goal of learning mathematics can be applied to one model of cooperative learning cooperative learning TGT. Will increase the student's knowledge of the game (tournament) during the learning process to resolve questions about the mathematics associated with the Pythagorean Theorem, learning model Teams Games Tournament (TGT) is one of the cooperative learning model that involves the interaction between teachers and students, involve students as a peer tutor and an element of the game and reinforcement. Worksheet (LKS) group learning activities and games in cooperative learning Teams Games Tournament (TGT) enable students to understand and solve the problem related to the Pythagorean Theorem in addition foster responsibility, honesty, cooperation, good competition and learning engagement in learning mathematics.

Research on cooperative learning ever done by Akrianti 2010 on "Improving Mathematics Student Learning Outcomes Through Cooperative Learning Model Type Games Tournament (TGT) in Class VII Junior High School 2 Banyuasin III" she suggests that in order to improve students participation, teachers can improve their teaching ability with TGT cooperative learning. It is necessary in describing the process of the activity between teachers and students in the implementation of learning Mathematics with TGT. Through the implementation of cooperative learning is expected to achieve the purpose of TGT maths learning. Based on the above, researchers interested in conducting research on "Application of Cooperative Learning Model Teams Games Tournament (TGT) in Mathematics Learning in SMP N 12 Palembang".

THEORETICAL BACKGROUND

Illus (2013) stated learning mathematics is a series of activities to teachers in teaching students to construct the concepts and principles of mathematics with its own capabilities through the internalization process, so that the concept or principle was awakened by a method or approach to teaching and its application in order to improve the competence base and ability of learners.

Sardiman (2008) which is defined as the activity is activity that is physical or mental . Yasa (2008) argues that teachers teach math activity set containing the class as well as possible and to create a conducive Events so that students can learn mathematics . Teacher activities are activities that teachers do during the learning process. The understanding of student activity According Sardiman (2008) are the activities that support student learning success. Activity arising from the student will result in the formation of knowledge and skills that will lead to increased achievement.

According Dimiyati and Mudjiono (2006:3), learning outcomes are the result of an interaction acts and acts of teaching and learning. This is consistent with that proposed by Ahmadi (1984:35) that "learning outcomes are the results achieved in a business, in this case the student learning effort is seen after take the test".

RESEARCH METHODOLOGY

Types of Research is classified into descriptive research that aims to describe how the implementation of learning mathematics with cooperative learning model Teams Games Tournament (TGT). The description of the implementation of learning gained through an overview of activity of students, teachers and learning outcomes. Subjects in this study were 8.7th grades of Junior high school 12 Palembang which consisting 40 students. It was performed in the first semester of the school year 2013/2014.

Procedure Research

This research was conducted in three phases: preparation, implementation phase which includes a preliminary stage, presenting the material, study groups, tournaments, awards and analysis phase.

Data Collection Techniques

Data was collected through observation to find a picture and description of the implementation of learning activities of students and teachers during the learning TGT. The tests were conducted to obtain students' learning outcomes after the implementation of learning TGT.

Data Analysis Technique

Analisis Data Observasi

observation data in this study is qualitative data that will be transformed into quantitative data in order to easily perform data analysis The steps of analyzing observational data is

1. Fill out the observation sheet based upon observations of learning activities take place.
2. Write down the scores for each descriptor that appears and 0 for descriptors that do not show up.
3. Then to obtain an overall final score used formula:

$$P = \frac{\text{Score obtained}}{\text{maximum score}} \times 100\%$$

P = percentage score

(Sudjana : 2010)

Results Data were analyzed with the following guidelines in Table 3.2.

Table 3.3 Percentage of Learning Implementation Guidelines

Percentage Range (%)	category
90% ≤ NR ≤ 100%	Very good
80% ≤ NR < 90%	Good
70% ≤ NR < 80%	Enough
60% ≤ NR < 70%	Low
0% ≤ NR < 60%	Very low

Learning is said to be successful if the implementation includes both categories, ie at least 80% done.

Analisis Data Test

The data obtained from the test results will be analyzed, namely the last meeting with the formula:

The average value of the class is calculated by the formula:

$$NR = \frac{\text{number of student grades}}{\text{many student}}$$

Percentage of students tuntas calculated by the formula:

$$P = \frac{\text{many students completed}}{\text{many students}} \times 100$$

Criteria if the student is said to pass the study with values ≥ 75 according KKM. KKM used by Junior High School 12 Palembang.

Table 3.4 Criteria mastery learning students

The final value	Description
≥ 75	Complete
< 75	Not complete

Implementation of learning TGT, obtained from the learning activities of students, teachers learning activities with TGT and learning results.

Factors	Criteria			
	Very Good	Good	Fair	Low
Student activities	Very Good	Good	Fair	Low
Teachers Activitie	Good	Good	Fair	Low
Student result	Comple- ted	Comp- leted	Comp- leted	Comp- leted

RESULTS AND DISCUSSION

The study consisted of three phases: preparation, implementation phase, and the phase of data processing.

Preparation Phase

At this stage , researchers conducted the following activities:

1. Compile learning instruments.

Compiling learning instruments like the lesson plan (RPP), Student worksheet (LKS), observation sheets and test questions. RPP arranged for 2 meetings (4 x 40 minutes) with the Pythagorean Theorem material . RPP compiled together teachers who will teach in accordance with the stages of cooperative learning model Teams Games Tournament (TGT) . Then the researchers make the Student Worksheet (LKS) arranged for 2 meetings. LKS at the first meeting contains questions about determining the length of the sides of a right triangle using the Pythagorean theorem, LKS at the second meeting contains questions on solving problems associated with flat wake

Pythagorean Theorem. Researchers also compiled observation sheet to see the activities of teachers and students in accordance with the stages of TGT. Furthermore, researchers set about test consists of 4 questions about determining the length of the sides of a right triangle and break down the problems associated with flat wake Pythagorean theorem is validated by the teacher assistant is Lahrihlina, S.Pd. 2 . Determine the subject of research.

Determination on the subject of research conducted August 22nd 2013 . Classes are used as research subjects is VIII.7 class . Researchers chose VIII.7 class because the class her students have heterogeneous capabilities. The implementation of cooperative learning TGT will be done by the teacher in the classroom to teach Mathematics VIII.7 class is Mrs. Lahrilina , S.Pd. When teachers teach the researcher as an observer to see the implementation of the implementation of cooperative learning TGT.

Implementation phase

Learning Research TGT was held on November, 20nd 2013 and November, 27th 2013 at Junior High School 12 Palembang . The study was conducted in class VIII.7 Semester 1 (one) with many students 40 people. With details of 22 male students and 18 female. From the data of students' math test given by the teacher, the students apply learning with TGT were divided into 10 groups to complete worksheets that consists of 4 students with heterogeneous ability levels and 8 groups for tournaments consisting of 5 students with similar capabilities. Allocation of time used in this study were 6 school hours (6 x 40 minutes) or 3 times face to face. The learning process is done twice meetings and one-time test.

Description of Observation Data and Data Analysis Student Activities

Data from the observation of student activity scores calculated for each student, based on descriptors that appear with the following four indicators:

- 1.Existence of individual students' learning activities to solve the problem.
- 2.Existence of student learning activities in the form of a group to apply the concepts, principles andgeneralizations.
- 3.Existence of the participation of each student in his learning task.
- 4.Existence of effort for each student to assess the learning result.

Table 4.1 Results of observations on the implementation of learning activities students TGT.

meeting	Score	Percente Score	category	Percentase score average	category
1	10	83,33	Good	82,57	Good
2	9	81.81	Good	82,57	Goog

Description Data and Data Analysis Teacher Observation Activities

Observations during the learning process takes place in two sessions conducted also by researchers, researchers observed the activity of teachers who implement cooperative learning model type Teams Games Tournament (TGT) during the learning process takes place with the following four indicators:

1. Teacher tells how students learn teaching materials.
2. Teachers pose problems or learning tasks to students, either individually or in groups
3. Teacher to monitor the students' learning process.
4. Teachers encourage student motivation through rewards.

Table 4.2 Results of observations of teachers in the implementation of learning activities TGT.

Meeting	score	Percentage	Category	Percentage category score an average	Category
1	10	83,33	Good	82,57	Good
2	9	81,81	Good		

Description and Analysis of Test Data

Analysis of test data taken from the test questions. In the form of an essay test consists of 4 questions. test scores graders of grade 8.7th Junior high School 12 Palembang can be seen in Table 4.3

table 4.3 Mastery learning students

Value	f	%	Explanation
≥ 75	34	87,17	Completed
< 75	5	12,83	Not Completed
jumlah	39	100	

Feasibility study TGT seen from the learning activities of students, teachers teaching activities and learning performing well.

Table 4.4 Learning results

Factor	Criteria
student learning activities	Good
teachers teaching activities	Good
Student learning result	Completed
	Good

DISCUSSION

At the second meeting of the implementation of learning in the learning phase TGT group of students did not perform due to a percentage grade tournament time but the teacher has to make-sure that students are ready to follow the tournament Because students do not have difficulty completing matter the worksheets in the group. There are 5 students who tests are not completed, the student is due to the low activity during the implementation of learning TGT. The only good learning outcomes Achieved through good learning process anyway (Afriliani 2013). Students who do not complete the learning outcomes of students who are not Achieving its TGT activity score of feasibility. It is also the caused by faulty work on the problems of students in the test. However TGT cooperative learning has been performing well.

ADVICE

As for some suggestions from researchers after conducting this research that.

1. Those teachers can implement cooperative learning model in teaching TGT further because it can provide excitement to students during the implementation of learning.
2. Those students , in order to keep up with the learning of TGT to obtain and maintain a good learning outcomes.
3. Those researchers can apply the learning model in accordance with the curriculum TGT 2013 forming well.

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