APPLYING THE COOPERATIVE LEARNING MODEL TYPE OF TEAMS GAMES TOURNAMENTS (TGT) TO INCREASE MATHEMATICS LEARNING OUTCOMES FOR CLASS VIII STUDENTS OF S. ISLAMIAH HESSA AIR GENTING YEAR 2019/2020

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ABSTRACT

The purpose of this study was to determine learning outcomes using the TGT type cooperative learning model in mathematics. This research was conducted at SMP S Islamiyah Hessa Air Genting, Air Batu District, Asahan Regency. This research was conducted in Semester II of the 2019/2020 Academic Year, which is March – April 2020. The subjects in this study were students of class VIII-A SMP S Islamiyah Hessa Air Genting with a total of 32 people. The method used in this research is Classroom Action Research (CAR).

Through the application of the TGT type learning method, it can improve students' mathematics learning outcomes in class VIII-A SMP S Islamiyah Hessa Air Genting for the 2019/2020 academic year. This can be seen from the results of the final study test, there are 25 students who complete or 75%. But the activities in the first cycle have not been said to be successful because they have not met the classical completeness of 85% so that it needs to be repeated so that students' ability to study the material independently and discuss with their original group through the TGT type cooperative learning model can be improved, it is necessary to carry out improvements in carrying out actions classroom learning. For this reason, it was carried out in cycle II. The implementation in cycle II went better and more conducive. This can be seen from the results of the final study test, there are 28 students who complete or 87.5%.

Keywords:
Learning outcomes
Cooperative Learning
Teams Games Tournaments

1. INTRODUCTION

Education is carried out aiming to improve and develop the potential possessed as expressed by Hasibuan (in Yanti 2009: 1) that education is an effort or activity that increases a person's ability in all fields including knowledge, skills, and attitudes. Thus, education is a very important aspect of its role in efforts to foster and form high-quality human beings. Mathematics is one aspect of life that has a very important role in efforts to foster and form high-quality humans. As stated by Hudojo (in Yanti, 2009: 1) that in modern development,
Mathematics plays an important role because with mathematics all science is perfect. Learning mathematics in schools is a means of clear, critical, creative, systematic, and logical. A place to solve problems of everyday life, recognize patterns of relationships, and generalize experiences and develop creativity. This causes mathematics to be studied in schools by all students from SD/MI to SMA/MA/SMK even in universities. Based on the results of the author's interview with the mathematics teacher who teaches at VIII SMP S Islamiyah Hessa Air Genting in the 2018 - 2019 school year, namely Mrs. Damayanti, S.Pd that learning mathematics is the most difficult learning by students, resulting in low mathematics learning outcomes. This also happens because many students do not master the material. Although the discussion model has been implemented, the learning outcomes are still low. because in discussing students are still learning individually so that a compact discussion team is not created. In addition, students also do not dare to ask the teacher and express opinions, and have different abilities. From the problems above, it can be seen that the learning model used is less varied and attractive. For that we need a learning model that can improve learning abilities as well as fun for students when applied. And the right learning model is the cooperative learning model. According to Isjoni (2009) Cooperative learning or cooperative learning is a learning model that is currently widely used to realize student-centered teaching and learning activities (student oriented), especially to overcome the problems found by teachers in activating students who cannot cooperate with others, students who are aggressive, and students who do not care about others. There are several cooperative learning models including STAD (Student Team Achievement Division), Jigsaw, GI (Group Investigation), TGT (Teams Games Tournaments) and others. In this study, the researcher used the TGT (Teams Games Tournaments) type of cooperative learning model. This learning model is used to increase positive social values in the classroom and improve learning outcomes.

2. DISCUSSION
A. Understanding Learning
According to Thursan Hakim (2005:1), learning is a process of change in the human personality, and these changes are shown in the form of increasing the quality and quantity of behavior such as increasing skills, knowledge, attitudes, habits, understanding, skills, thinking power, and so on. -other abilities. The same thing was also expressed by Slameto (2003: 2), that "Learning is a business process carried out by a person to obtain a new change in behavior as a whole, as a result of his own experience in interaction with his environment". Furthermore, Djamarah and Zain (2006:11) say that "Learning is a behavioral process thanks to experience and practice. The essence of the activity is a change in behavior, both concerning knowledge, skills, and attitudes, even covering all aspects of the organism or personal. This is also supported by M. Sobry Sutikno (2007: 5) argues that, "Learning is a business process carried out by a person to obtain a new change as a result of his own experience in interaction with others." Learning is an activity for everyone. Knowledge, skills, habits, hobbies, and attitudes of a person are formed, modified and developed because someone learns. In learning activities, students must be active in seeking knowledge, not just knowledge in the form of participating in finding and thinking in obtaining that knowledge. It can be said that learning
is a person's activity to collect a certain amount of knowledge through practice so as to produce changes in knowledge and behavior in a person. Based on the above understanding, it can also be synthesized that learning is a change and improvement in the quality and quantity of a person's behavior in various fields that occur as a result of continuous interaction with the environment.

B. Understanding Learning Outcomes

Learning outcomes are the results achieved by students who have followed the teaching and learning process. Results are basically something that is obtained from an activity, while learning is a process that results in changes in individuals, namely changes in behavior, both aspects of knowledge, skills, and aspects of attitudes. Learning outcomes is a term used to indicate the level of success achieved by someone after making a certain effort. In this case the learning outcomes achieved by students in certain fields of study after following the teaching and learning process. According to Benjamin S. Bloom (Sumarni, 2007:30) states that there are three learning domains, namely cognitive, affective, and psychomotor. Learning outcomes are the output of an input processing. The input from the system is in the form of various kinds of information, while the output is the action or performance. Actions are an indication that the learning process has occurred and learning outcomes can be grouped into only two kinds, namely knowledge and skills. Still according to Sumarni (2007:30), knowledge consists of 4 categories, namely (1) knowledge of facts, (2) knowledge of procedures, (3) knowledge of concepts, and (4) knowledge of principles. Skills also consist of four categories, namely (1) thinking skills or cognitive skills, (2) acting skills or motor skills, (3) reacting or behaving skills, and (4) interacting skills. As for Soedijarto (Masnaini, 2003: 6) states that learning outcomes are the level of mastery achieved by students in participating in teaching and learning programs in accordance with educational goals. Learning outcomes in the framework of this study include areas of cognitive, affective, and the ability/speed of learning of a learner. It can be concluded that mathematics learning outcomes are the level of success in mastering the field of mathematics studies after gaining experience or teaching and learning processes within a certain period of time which will be shown through the scores obtained in the learning outcomes test. Mathematics learning outcomes in this study are real skills that can be measured directly by using learning outcomes tests and the ability/speed of learning of a student. It can be concluded that mathematics learning outcomes are the level of success in mastering the field of mathematics studies after gaining experience or teaching and learning processes within a certain period of time which will be shown through the scores obtained in the learning outcomes test. Mathematics learning outcomes in this study are real skills that can be measured directly by using learning outcomes tests and the ability/speed of learning of a student.
C. Cooperative Learning Model

In improving the quality of education, various efforts are needed, both in curriculum development, delivery of learning and fulfillment of educational facilities and infrastructure. For this reason, an interesting, varied and attractive learning model is needed. Learning is something students do, not made for students. The purpose of learning itself is the realization of the efficiency and effectiveness of learning activities carried out by students. One of the learning models currently developing is cooperative learning. Cooperative learning conditions students to be active and support each other in group work to solve problems in learning. This is supported by Effandi Zakaria (Isjoni, 2009: 21) which states that cooperative learning is designed with the aim of actively involving students in the learning process, talking with peers in small groups. According to Anita Lie (Isjoni, 2009:23) states that cooperative learning with the term mutual cooperation learning, is a learning system that provides opportunities for students to cooperate with other students in structured tasks. And according to the Ministry of National Education (in the Journal of Paedagogic Mathematics, 2010: 41) the cooperative learning model is a learning model that uses small groups, each student in the group has different levels of ability, using varied learning activities to improve students' understanding of the topic/ the material being taught. Each group is responsible for learning the material being taught but is also responsible for helping group members. The five basic elements that distinguish cooperative learning from group work according to Bennett (Isjoni, 2009: 60) are:

1) Positive interdependence is a reciprocal relationship based on the same interests or feelings among group members where one person's success is another's success or vice versa.
2) Face to face interaction, namely direct interaction between students without any intermediary.
3) There is personal responsibility regarding the subject matter in group members.
4) Requires flexibility so as to create an atmosphere of togetherness among fellow group members.
5) Improve skills to work together in solving problems (group process)

According to Slavin (Isjoni, 2009: 33) cooperative learning has three central concepts as characteristics, namely group rewards, individual responsibility, and equal opportunity to succeed. Cooperative learning develops discussion and communication with the aim that students share their abilities, think critically in learning, share opinions and respect the opinions of others, give each other opportunities to show abilities, help each other in learning, and assess each other's abilities, both their own abilities and abilities. others. As summarized by Ibrahim et.al (Isjoni, 2009:39), the cooperative learning model was developed to achieve at least three important learning objectives, namely academic learning outcomes, acceptance of individual differences,

The cooperative learning model used in this study is the TGT type cooperative learning model. According to Andy (in the Journal of Paedagogic Mathematics, 2012: 133) states that learning with the TGT method is a learning model that is easy to apply and allows students...
D. Cooperative Learning Model type TGT (Teams Games Tournament)

Learning with the TGT method is cooperative learning that contains elements of games and reinforcement. Learning activities with games designed in the TGT learning method allow students to learn more relaxed in addition to fostering a sense of responsibility, cooperation, healthy competition, and learning engagement. Isjoni (2009: 83) describes that TGT is a type of cooperative learning that places students in study groups consisting of 5 to 6 students who have different abilities, gender, and ethnicity or race. The teacher presents the material, and students work in their respective groups. In group work the teacher gives worksheets to each group. The tasks given are done together with group members. If any of the group members do not understand the given task, then the other group members are responsible for answering or explaining, before asking the question to the teacher. Finally, to ensure that all group members have mastered the lesson, all students will be given academic games. In academic games students will be divided into tournament tables, where each tournament table consists of 5 to 6 people who are representatives of their respective groups. At each game table, it is attempted so that no participants come from the same group. Students are grouped in one tournament table homogeneously in terms of academic ability. This can be determined by looking at the scores they got at the pre-test. The score obtained by each participant in the academic game is recorded on the score sheet. Group scores are obtained by adding up the scores obtained by members of a group, then dividing by the number of members of the group. This group score is used to award the team in the form of a certificate by including certain predicates. According to Slavin (Journal of Paedagogic Mathematics, 2012: 133) cooperative learning consists of 5 stages, namely: 1. Stages of class presentation (class presentation). 2. Study in groups (teams). 3. Games (games). 4. Tournament or Competition (tournament). 5. Group awards (teams recognition). Then divided by the number of members of the group. This group score is used to award the team in the form of a certificate by including certain predicates. According to Slavin (Journal of Paedagogic Mathematics, 2012: 133) cooperative learning consists of 5 stages, namely: 1. Stages of class presentation (class presentation). 2. Study in groups (teams). 3. Games (games). 4. Tournament or Competition (tournament). 5. Group awards (teams recognition). Then divided by the number of members of the group. This group score is used to award the team in the form of a certificate by including certain predicates. According to Slavin (Journal of Mathematics Paedagogic, 2012: 133) cooperative learning consists of 5 steps, namely: 1. Stages of class presentation (class presentation). 2. Study in groups (teams). 3. Games (games). 4. Tournament or Competition (tournament). 5. Group awards (teams recognition). Games (games). 4. Tournament or Competition (tournament). 5. Group awards (teams recognition). Games (games). 4. Tournament or Competition (tournament). 5. Group awards (teams recognition). In accordance with these five components, briefly the scenario in this TGT model is as follows: 1. The teacher conveys the goals to be achieved and conveys the material to be discussed that day. Then make heterogeneous student groups of 5-6 people, then provide information on the subject matter and the mechanism of the activity. 2. Prepare a tournament or competition table sufficiently, for example 10 tables and for each table occupied by 5-6 students of equal ability, the first table is filled by students with the
highest level from each group and so on until the tenth table is occupied by students with the lowest level. The determination of each student sitting at a certain table is the result of group agreement. 3. Next is the implementation of tournaments or competitions, each student takes a question card that has been provided at each table and works on it for a certain period of time (e.g., 3 minutes). Students can work on more than one question and the results are checked and assessed, so that a tournament or competition score is obtained for each individual and at the same time the score for the home group. Students at each table in the tournament or competition according to the score they get are given the title (title) superior, very good, good, and medium. 4. Likewise for the third-fourth tournament or race, and so on. And a seat shift is made at the tournament or competition table according to the title, superior students in the same tournament or competition table group, as well as other tournament or competition tables filled by students with the same title. 5. The TGT type of cooperative learning model is a learning model that refers to a cooperative approach between groups by developing interpersonal cooperation.

3. RESEARCH METHODS
The research method used is classroom action research (CAR). In this study, the PTK model that will be used is the Kemmis and McTaggart model. The CAR model used consists of four stages, namely: planning, action, observation and reflection.

Figure 1. Cycle Kemmis and McTaggart

The object of this research is class VIII-A SMP S Isilamiyah Hessa Air Genting with a total of 32 people. Students will be given a pre-test before learning begins. Then students were given treatment in the form of cooperative learning model type TGT. When given the
treatment, the observer observed student learning activities and teacher activities. The research instrument used was a test (pre test and post test), observation of student learning activities and teacher activities.

4. **RESEARCH RESULTS AND DISCUSSION**

Student learning outcomes obtained from the results of the pre test and post test. The average value of the pre test and post test each cycle (Figure 2).

![Figure 2. Average pre-test and post-test scores](chart)

In the implementation of the first cycle, several deficiencies were found that must be corrected in the second cycle, namely the learning process cannot carry out discovery activities effectively this is because the time for discussion is too short so that students have difficulty answering or solving questions given by the teacher. In addition to the short discussion time, which makes it difficult for students to understand the material, the learning methods used are also new to students. This is indicated by the fact that there are still some students who are confused in following the stages of TGT type cooperative learning so that some students are less active in participating in the learning process, and there are still groups that are not active in carrying out discussions because some of the members are passive.

In accordance with the indicators of success, namely 85% of students scored 70, classroom action research in cycle I was categorized as unsuccessful because 75% of students scored 70 and the average grade was 78. The success of this learning process was caused by the relatively short student discussion time. and students are not used to carrying out the learning process using the TGT type cooperative method so that some students (25% of 32 students) look passive during the learning process and get a score of 70. If the implementation of the first cycle research is not successful, the researcher will continue with the cycle research II. To avoid failure in cycle II the researcher will extend the students' discussion time, provide an explanation of the stages of the TGT type cooperative learning method before the implementation of the learning process takes place, and the teacher will be more active as a facilitator during the learning process. Based on the test results in the first cycle, 75% of students got a score of 70 and the class average was 78, and the test
results in the second cycle were 87.5% of students (28 out of 32 students) scored 70 and the class average 88. From the observations during the learning process, it was found that the teacher was accustomed to applying the TGT type cooperative method, and was able to carry out the methods that were scripted in the lesson plan using the TGT type cooperative method. Broadly speaking, teachers have practiced this method effectively in the learning process. As many as 75% (24 of 32 students) in the first cycle had followed the lesson well, while the rest seemed passive. Teachers are more active in carrying out their role as facilitators and more intensively in controlling the learning process, so that the learning process takes place effectively and fun. The action in cycle II, 28% of the passive students get more attention from the teacher, so they become active like other students.

Longer discussion time helps students to understand the material being taught, so that in the implementation of the tournament students become more enthusiastic, enthusiastic, and active in competing. Through learning using the TGT type cooperative method, student learning outcomes in mathematics can be improved. Based on the results of the study, after being given action in the first cycle through learning using the TGT type cooperative method, the students' average score was 78 and 75% completeness. Then the increase in the second cycle through learning using the TGT type cooperative method obtained an average score of 88 students and 87.5% completeness. These results indicate that learning activities using the TGT type cooperative method can improve student learning outcomes in mathematics subjects in class VIII-A SMP S. Islamiyah Hessa Air Genting. In the learning process, grouping students in discussions and tournaments can help students become more skilled at understanding questions and applying concepts in solving math problems. This can be seen from the results of student learning tests after learning using the TGT type cooperative learning method. Based on the research data, it can be stated that efforts to improve mathematics learning outcomes using the TGT type cooperative learning method have an important role as an effort to improve students' mathematics learning outcomes. In the learning process, grouping students in discussions and tournaments can help students become more skilled at understanding questions and applying concepts in solving math problems. This can be seen from the results of student learning tests after learning using the TGT type cooperative learning method. Based on the research data, it can be stated that efforts to improve mathematics learning outcomes using the TGT type cooperative learning method have an important role as an effort to improve students' mathematics learning outcomes.
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5. CONCLUSIONS AND SUGGESTIONS

The conclusion in this study is that the application of cooperative learning type TGT can improve student learning outcomes and activities, this is proven in the first cycle through the learning outcomes test obtained 24 students (75%) who have achieved the level of mastery learning with an average student learning outcome of 78. Meanwhile learning outcomes in the second cycle obtained 28 students (87.5%) who have reached the level of completeness with an average student learning outcomes of 88.

Based on classroom action research in class VIII-A of SMP S Islamiyah Hessa Air Genting for the 2019-2020 academic year, the suggestions that can be recommended are as follows:

1. For teachers who apply the TGT type of cooperative learning, it is better to plan beforehand so that when carrying out the learning process they do not find it difficult to present the material to be taught.
2. For teachers who apply the TGT type of cooperative learning, this method should be applied to schools with medium and high levels of student ability, while schools with low student ability levels are not appropriate.
3. It is recommended for mathematics teachers to use this method on other suitable materials as an alternative learning.

REFERENCES


