# The Effectiveness Of The Teams Games Tournament (TGT) Cooperative Learning Model Application On Physics Learning Outcomes Of Students

Nadrah Nadrah

Elementary Education Study Program, Universitas Muhammadiyah Makassar, Indonesia
*Corresponding Author:
Email: nadrah@unismuh.ac.id

***Abstract***.

*The purpose of this study was (1) to find out the physics learning outcomes of students who were taught using the Teams Games Tournament (TGT) cooperative learning model in class XI SMA Negeri 2 Makassar. (2) to find out the physics learning outcomes of students who are taught without using the Teams Games Tournament (TGT) cooperative learning model in class XI SMA Negeri 2 Makassar. (3) to analyze the effectiveness of Teams Games Tournament type cooperative learning model application on the physics learning outcomes of students in class XI SMA Negeri 2 Makassar. This type of research is a quasi-experimental design with nonequivalent control group design using descriptive statistical analysis techniques and inferential statistical analysis. The descriptive research results obtained an average physics learning result in class XI IPA-6 which was taught using the Teams Games Tournament type cooperative learning model of 85.50 and was in the Very Good category, while the average student learning outcomes in class XI IPA-7 taught without using the Teams Games Tournament type cooperative learning model of 79.25 are in the Good category. Based on the results of inferential statistical analysis using hypothesis testing (Independent samples t-test) SPSS data processing obtained Sig = 0.000, it can be concluded that Ho is rejected and H1 is accepted because sig (2-tailet) < α or (0.000 < 0.05 ), thus it can be concluded that there is a significant difference in student physics learning outcomes between classes taught with the Teams Games Tournament (TGT) cooperative learning model and classes taught without the Teams Games Tournament (TGT) cooperative learning model.*

***Keywords:*** *Cooperative Learning Model, TGT and Physics Learning Outcomes.*

## I. INTRODUCTION

Education is an activity in carrying out the learning process in the classroom to develop the potential that exists in him so that he can increase his desire, as well as his curiosity in learning [1]. When the learning process in class takes place sometimes students feel bored and sleepy in class, this is because educators cannot make the class atmosphere pleasant, therefore the duties and roles of an educator in teaching are to guide, train, assess, evaluate in the learning process, this is very important to implement, besides that educators must choose and implement learning models that can arouse students' enthusiasm and train patience in applying the learning process [2]. Teaching and learning are two sides of the same coin that influence each other during the educational process. In this situation, the activity that takes place is an example of instructor teaching and student learning [3]. Learning is considered successful and of good quality if all or at least most of the students participate actively in the learning process at all three levels (physical, cognitive, and emotional) and show a high level of enthusiasm for learning and a high level of enthusiasm for the learning process. extraordinary, and remember to have faith in yourself [4]. Given the information presented above, it is clear that the instructor's efforts to promote active learning in students are of the utmost importance. Active learning in students is a key factor that determines how effectively learning is carried out.Learning is not enough to just involve hearing and seeing. Instead, students must also be involved in other activities, such as reading, asking, responding, debating, carrying out assignments, sketching, communicating, presenting, considering, and concluding, as well as using equipment [5].

During the learning process, the instructor will present physics questions in class and encourage students to identify problems, find solutions, synthesize findings, and then present these results. As coordinator and advisor, it is the instructor's responsibility to offer students assistance and guidance. In addition to communicating with the instructor, students have the option of engaging in conversation with each other and asking each other questions when they are having difficulty completing their assignments. Students are considered active learners when they lead in educational exercises. Students are required to use

their cognitive abilities deliberately, whether it is to ascertain the core concepts of the material, find solutions to challenges, or apply what they have learned. In an activity session, it involves not only students who are active in learning, but also teachers who must arrange situations that can motivate students in learning [6]. On the other hand, students are people who are active in learning. Therefore, one thing teachers can do to help students become more engaged in their learning is to design and implement learning models that achieve these learning goals. TGT cooperative learning is learning where after the presence of the teacher, students move to their respective groups to help each other answer questions from the material provided. The teacher will no longer hold a written test to evaluate the learning outcomes, but each student will compete in each tournament table at the end of the lesson. The tournament must allow all students from the ability level to contribute points so that the questions are made based on their level of ability.

The value of each student will be accumulated into group value [7].One of the efforts to solve the problem of the Fiqh learning process is to use a cooperative learning model. Cooperative learning is the exploitation of small groups in learning that allows students to have similar tasks to optimize learning in groups. Cooperative learning has many types, here the author takes one of them, namely the type of Team Games Tournament (TGT) which has an effect on improving student learning [8]. The Teams Games Tournament type of cooperative learning model is one of the types or models of cooperative learning that is easy to apply, involving the activities of all students without having to have differences in status so that it involves the role of students as peer tutors and contains elements of play and reinforcement [9]. Learning activities with games designed in the TGT model of cooperative learning allow students to learn more relaxed in additio to fostering responsibility, cooperation, healthy competition and learning engagement.TGT is a learning model where students are placed into teams with different abilities to face all tournaments. Slavin said that TGT consists of three regular cycles of teaching: 1) Teaching where the teacher gives lessons, 2) Learning team where students work on activity sheets in their respective teams, 3) Tournaments where students play academic games in homogeneous abilities at each tournament table, 4) Team recognition where the score is calculated based on the team member's tournament score. The team will win if they are able to exceed the criteria that have been set. With the TGT students will enjoy how the tournament atmosphere is, and because they are competent with groups that have an equal composition of abilities, the competence in TGT feels fairer than competence in traditional learning in general [10].

With the cooperative learning model, this type of team games tournament provides opportunities for students to be more active in talking with teachers or other students in the classroom, as a result, there is a lively learning in the classroom. In this model, each student is required to share the results of dialogue, collaboration in groups, opinions, ideas, especially to answer questions given by the teacher.The use of a variety of learning models can help students improve the learning process so that it is more active and fun because if all of these are well established, they will also provide good learning outcomes. One of the learning models that can be applied is the TGT cooperative learning model, because this type of learning can create variations in the learning process because the syntax of this learning model has games arranged by educators in the form of quizzes in the form of questions related to subject matter. Apart from that, it can also be interspersed with a number of questions related to the subject matter of each previously formed group, thus this learning model can actively involve all students in the learning process and in turn the learning outcomes will increase [11]. Learning outcomes are basically the process of changing from not knowing to knowing, then collaborating with the provision of a cooperative learning model of the TGT type which is expected to generate enthusiasm for students in learning in class, as well as by providing games in it so that they can achieve the expected learning outcomes. Learning outcomes are abilities possessed by students after they receive learning experiences.

He pointed out that, in the national education system the formulation of educational goals, both curricular and instructional goals, uses the classification of learning outcomes from Benjamin Bloom, which broadly divides them into three domains, namely: cognitive, affective, and psychomotor. In addition, learning outcomes can be operationalized in the form of indicators in the form of report cards, study achievement indexes, graduation rates, and predicates of success [12]. Thus, it can be said that learning

outcomes are actual abilities that can be measured and are tangible mastery of science, attitudes of skills, and values achieved by students as a result of the learning process in school. Learning outcomes obtained by students in a subject are expressed in the form of values called learning outcomes. Departing from the learning outcomes during the observations of several Physics subject teachers at SMA Negeri 2 Makassar, it is undeniable that there are still a number of class XI students who have low Physics learning outcomes who have not reached the predetermined standard of completeness, this fact is based on low daily test results under the minimum completeness criteria (KKM) the completeness limit at school is 80 before being given remedial [13].

From the results of these observations it is known that the low learning outcomes are influenced by several factors that influence during the learning process, one of which is the lack of use of learning media, the methods used during the learning process, namely lectures and assignments, this gives the impression of monotonous lessons and makes students bored, student participation in the learning process is low so that it impacts students to be passive, students are less trained in thinking so that mindsets are difficult to develop.The results of the research conducted by Wijayanti on Basic Physics learning by applying the cooperative type TGT model can increase conceptual understanding and the overall participation of students of science education [14]. Another study conducted by Ahriani concluded that the average learning outcomes of students taught with the cooperative learning model of the TGT type were higher than those taught with the STAD type cooperative learning model, while the research by Van Wyk concluded the application of cooperative learning models TGT type is better than conventional models [15].Based on this, the researcher assumes that the Teams Games and Tournament (TGT) cooperative learning model can improve student learning outcomes because this learning model is very suitable to be applied and contains elements of games so that it can make students enthusiastic in learning and ultimately achieve maximum learning results according to hope, so that researchers are inspired to conduct research entitled "The Effectiveness of the application of the Tames Games Tournament (TGT) cooperative learning model on Physics learning outcomes for class XI students at SMA Negeri 2 Makassar.

## II. METHODS

This type of research is categorized as quasi-experimental research (Quasi experimental Design). The quasi-experimental design provides a way to compare groups [16]. In this quasi-experimental design, an experimental class and a control class were carried out, namely comparing classes given the Teams Games Tournament (TGT) cooperative learning model and classes not given the Teams Games Tournament (TGT) cooperative learning model but using conventional learning models to see learning outcomes of students [17]. The research design used was an experimental group with pre-test and post-test (pretest-posttest control group design).

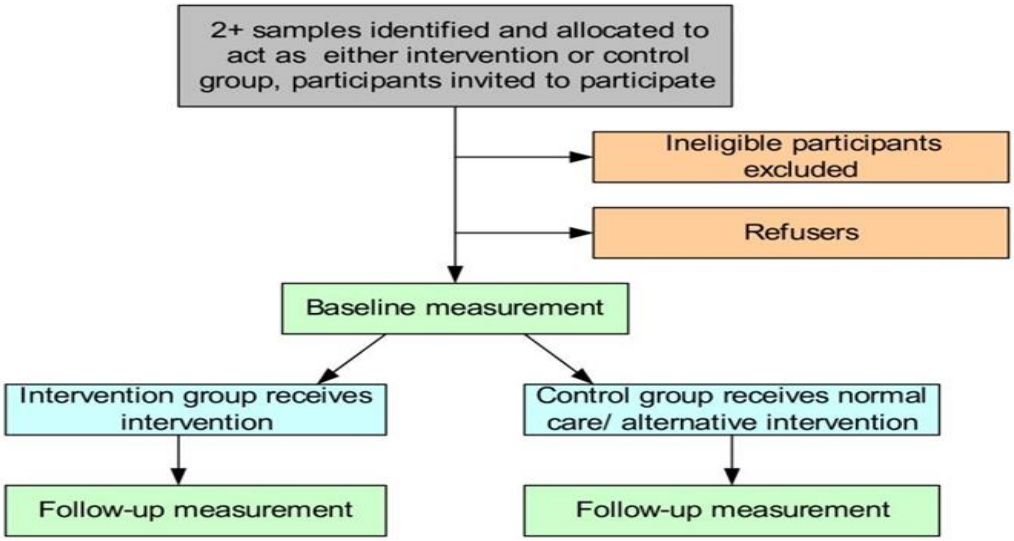


**Fig 1**. Quasi-Experimental Research Design

This design involves two groups, namely the experimental group and the control group. Both groups will be given a pre-test before being given treatment. The experimental group is the group that is given treatment using Teams Games Tournament (TGT) cooperative learning, while the control group is the group that is given treatment using conventional learning [18]. After the two groups were given treatment, then the posttest was given.

## III. RESULT AND DISCUSSION

### 1. Description of Research Results

**Table 1.** Control Class Frequency Distribution

| No | Interval Class | | | Frequency | | | Qualification |
|---|---|---|---|---|---|---|---|
| | | | | Absolute | Relative(%) | Cumulative | |
| 1 | 0 | - | 25 | 0 | 0% | 0 | Less Satisfactory |
| 2 | 26 | - | 50 | 0 | 0% | 0 | Satisfactory |
| 3 | 51 | - | 75 | 29 | 81% | 29 | Good |
| 4 | 76 | - | 100 | 7 | 19% | 7 | Very Good |
| | Amount | | | 36 | 100% | | |

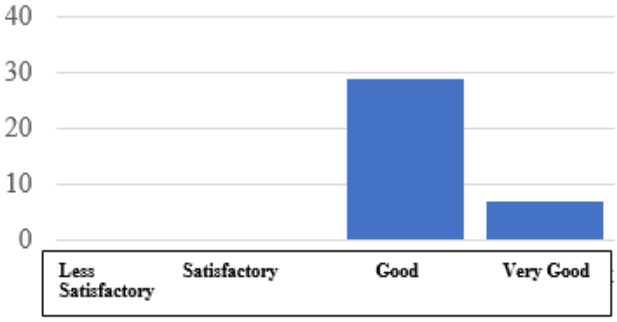


**Fig 2.** Graph of Distribution of Control Class Values

Based on Figure 1 it can be seen that the scores of students in the control class only ranged from "good". Of the 36 students, only 7 scored in the "very good" category or around 19% while those who scored in the "good" category were 81%. This shows that students generally understand the contents of teaching materials but have not fully understood them [19]. For this reason, it is necessary to carry out treatment that can increase their understanding.

**Table 2.** Experiment Class Frequency Distribution

| No | Interval Class | | | Frequency | | | Qualification |
|---|---|---|---|---|---|---|---|
| | | | | Absolute | Relative(%) | Cumulative | |
| 1 | 0 | - | 25 | 0 | 0% | 0 | Less Satisfactory |
| 2 | 26 | - | 50 | 0 | 0% | 0 | Satisfactory |
| 3 | 51 | - | 75 | 5 | 16% | 5 | Good |
| 4 | 76 | - | 100 | 26 | 84% | 31 | Very Good |
| | Jumlah | | | 31 | 100% | | |

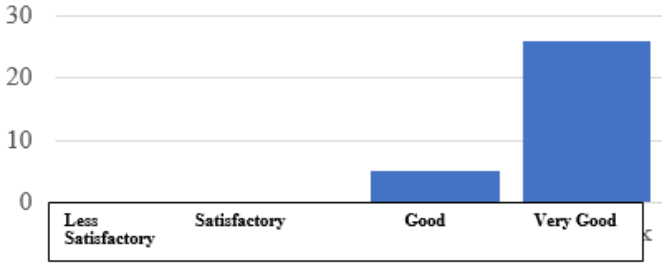


**Fig 3.** Graph of Experiment Class Value Distribution

Based on Figure 2 it can be seen that the scores of students in the experimental class are in the "very good" category. Of the 36 students, only 5 students scored in the "good" category or around 16%, while those in the "very good" category scored 84%. This shows that students in general have understood the contents of the teaching material to the fullest.

**2. Prerequisite Analysis Test**

**Table 3.** Homogeneity Test

| | | Levene Statistic | df 1 | df2 | Sig. |
|---|---|---|---|---|---|
| Value | Based on Mean | .811 | 1 | 70 | .371 |
| | Based on Median | .874 | 1 | 70 | .353 |
| | Based on Median and with adjusted df | .874 | 1 | 67.465 | .353 |
| | Based on trimmed mean | .884 | 1 | 70 | .350 |

Based on the results of the analysis, the significance value of the Test of Homogeneity of Variances Based on Mean was 0.371. This value is greater than 0.05 so it can be concluded that the data is homogeneous.

**Table 4.** Normality Test

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Experiment | .125 | 36 | .166 | .961 | 36 | .223 |
| Control | .110 | 36 | .200* | .964 | 36 | .292 |

Based on the results of the analysis, it was obtained that the Kolmogorov-Smirnov significance value for the Experiment Class and Control Class values was more than 0.05. Thus the data is normally distributed

**3. Hypothesis Test**

**Table 5.** T-Independent Test

| | | Levene's Test | | t-test for Equality of Means | | | |
|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference |
| Value | Equal variances assumed | .811 | .371 | 5.090 | 70 | .000 | 6.25000 |
| | Equal variances not assumed | | | 5.090 | 67.953 | .000 | 6.25000 |

Based on the results of the independent t-test analysis, a significance value of <0.001 was obtained, so Ho was rejected. Thus it can be concluded that the Cooperative learning model of the Teams Games Tournament (TGT) type is effective for physics learning outcomes for class XI students at SMAN 2 Makassar.

**Discussion**

Based on the description of the data that has been described previously seen the average value of competence physics experimental class students who follow the model of cooperative learning TGT significantly better than the control class that follows the conventional learning [20]. According to research conducted by Valia et al. shows that with the application of TGT learning model can improve the learning outcomes of students with better and more significant. The high value of the average competence grade students experiment is 81% compared to 72% in the control classes due to the provision of treatment given to the experimental class that is a model of cooperative learning TGT. This is in line with the results Rohendi, et al. states that there are significant differences between the study of students using TGT learning model compared with conventional learning models Cooperative learning consists of a small group of students working together as a team to solve a problem, complete a task, or perform some activity to make progress towards a common goal [21]. The learning method is referred to as a "cooperative" system or cooperative learning when it provides opportunities for students to work together with fellow students on predetermined projects. Cooperative learning is another term for this teaching method. It can be concluded that cooperative learning is a learning paradigm that allows students to study in small groups or teams to help each other in the process of solving problems, completing a task, or carrying out an activity to make progress towards a common goal in an educational context.

The cooperative learning paradigm includes at least three different educational goals. The first objective is to improve students' scholastic learning outcomes in classes where they are expected to complete assigned work. This approach, according to the claims of a number of knowledgeable individuals, is very effective in assisting students in understanding complex ideas. The researchers who developed this model demonstrated that it is possible for students to have more positive evaluations of scholastic learning as well as changes in standards related to their educational consequences as a result of using the cooperative incentive structure model [22]. The second goal of cooperative learning is to provide opportunities for students from diverse backgrounds and circumstances to depend on one another for common tasks, and through the use of cooperative incentive structures, they will learn to respect one another. This will achieve the second goal of cooperative learning. The third goal of cooperative learning is to instill in students the skills needed to work effectively with others. In a culture where most of the adult workforce is performed in interconnected organizations, having this kind of ability is absolutely necessary [23].Students participate as representatives of their squad against other team members of similar academic talent in the Teams Games Tournament (TGT) academic competition, in which a scoring and ranking system of individual progress is also used. Consequently, students in each group with the lowest average achievement have the same opportunity to earn points for their group as students with the highest average achievement [24].

Although group members do not change, the students selected to participate on behalf of the group may differ depending on the achievements and performances of the various members. For example, low achieving students who initially compete with students of equal abilities may eventually compete with high achieving students as they become more capable. This is because low achieving students initially compete with students with similar abilities. It is clear, based on the research findings previously described, that the cooperative learning paradigm in the form of Teams Games Tournament (TGT) can improve student learning outcomes. Cooperative learning is a teaching method that has the potential to involve students [25]. There are many different formats for cooperative education, and one of these formats is known as the Teams-Games-Tournament (TGT) format. This kind of learning procedure consists of several phases that must be completed before proceeding. Students initially work together in groups to complete assignments, which are based on content developed in advance by instructors. After that, the students compete against each other in a competition for class prizes [26]. In addition, there is competition between groups disguised as games so that the learning process is not boring. With TGT cooperative learning model can build teamwork and social skills. Learners are expected to understand their role in the group, receiving the views of others, can give a sense even to people who perhaps do not they enjoy as well as cooperative learning model TGT can motivate or to arouse the interest of the self learners, because we create a problem with the job context, The learning process requires students to be independent with the business of learning.

The spirit of "responsible for learning" Cooperative learning of the Teams Games Tournament (TGT) type also encourages students to actively seek solutions to problems and communicate their knowledge to others, which ultimately results in each student becoming more proficient with the subject matter. During Teams Games Tournament (TGT) style learning, the instructor goes around among students to guide them through their group work. Therefore, students can communicate with their instructors [27]. It is hoped that by facing students, students will not be afraid to ask questions or offer their thoughts to the instructor, and this fear will disappear. Using the model of cooperative learning TGT, then the student will be able to learn actively and creatively because in this learning students discuss in small groups, in which they help each other in the understanding of the material. When the TGT cooperative learning model is used well in the learning process, the learning objectives to be achieved will be realized in line with what was expected. Inaccordance with the opinion of Ibrahim cooperative learning Teams Games Tournament (TGT) is a cooperative learning, where teachers present the students' learning and cooperate with each other in doing LKS then held the tournament at the end of the lesson. The implementation of cooperative learning model TGT a positive impact on students' cognitive learning competencies. In line with the research Adnyana, et al. in small groups all students are actively involved to participate solve the existing problems within the group and the learning process can take place optimally so as to improve student learning outcomes either individually or in groups [28].

The combination of cooperative learning model TGT a positive impact on teachers, because most of the time to devote to guide student learning. The positive impact for students that may affect patterns of interaction of students because it gives equal opportunity to called for every individual in every group that foster a sense of responsibility, self confidence and actively participate in the learning process. Based on the above, it can be concluded that the affective learning competencies of students who follow the model of cooperative learning TGT better the significance of the affective learning competencies of students who take conventional learning [29].Students can be encouraged to strive for greater future success if they are rewarded for the progress they have made. Compliments, awards, awards and certificates of achievement are forms of appreciation that can be taken [30]. According to Edward L. Thorndike it is stated that in the law of impact it is explained that gratification born from incentives from teachers will provide satisfaction for children, and children try to do or improve what has been achieved as a result of this satisfaction. In this case, compliments, applause, certificates and gifts are all considered as gifts.

## IV. CONCLUSION

Based on the description above, it can be concluded that the Team Games Tournament (TGT) learning model is able to improve student learning outcomes when compared to conventional learning models. With this learning model, it is hoped that the teacher will be able to apply it to materials that are considered difficult for students to understand. So that students feel no longer difficult in learning the material. Basically one of the determinants of student success is the accuracy of the selection of learning models. The right learning model will produce a good learning climate which will indirectly increase the value of student learning outcomes.

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