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The Effect of Team Games Tournament Cooperative Learning Model on Student Learning Outcomes

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ABSTRACT
This study aims to determine the learning outcomes of students taught with the Team Games Tournament type cooperative learning model and conventional, to determine student learning activities using the Team Games Tournament type cooperative learning model and to determine the effect of the Team Games Tournament type cooperative learning model on student learning outcomes. The type of research conducted was quasi-experiment. The research population was all students of class X MIA Semester I consisting of 2 classes. The sample was selected using purposive sampling technique. Class X MIA A as a control class using conventional learning and class X MIA B experiment using cooperative learning model type Team Games Tournament. The instruments used to determine student learning outcomes are learning outcomes test questions totaling 10 questions in the form of multiple choice. The data results can be seen from the average post-test scores of each class, the average post-test score of students using the Team Games Tournament type cooperative learning model is in the good enough criteria compared to the average post-test score of students using conventional learning. The average value of student learning activities during learning is classified as active and has increased every meeting. Thus, it is concluded that there is an effect of the Team Games Tournament type cooperative learning model on student learning outcomes on straight-line motion material.
Keywords: Team Games Tournament (TGT); Learning Outcomes; Learning Activity; Straight Motion

INTRODUCTION

School quality is influenced by several aspects, including the skills of educators, the availability of facilities and infrastructure, the skills of students, support from the school, the selection of learning models and so on. Another aspect that affects school quality is the learning activities that take place at school. The success of learning activities is strongly influenced by teachers and students. One indicator of the success of a learning activity is that students appear to be actively involved in the learning activity.

In order for learning activities to be successful, educators must be able to apply learning models that are interesting and practically relevant. Learning strategies used in schools are directly related to the success of the learning process of students. The use of learning models that minimally help students to be enthusiastic in learning affects the success of learning activities. This situation is especially evident in students who tend to be passive in their learning activities. The selection of learning models in the classroom should obtain an increase in student activity so that the learning process can be passed with optimal results.

Cooperative learning model means a learning model where students work

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in small teams of different abilities and each member works together to help each other when digesting learning materials when working on group assignments. Roger and David Johnson (in Rusman, 2012) identified 5 key elements of cooperative learning, namely (a) Collaboration (b) Personal responsibility, (c) Personal interaction, (d) Participation and discussion, (e) Assessment of the team system. Based on Isjoni (2009: 5) in cooperative learning model, students are given the opportunity to communicate using other students to achieve learning objectives, and the teacher is responsible for motivating and acting as an activity facilitator. This means that in this learning, students are active with knowledge developed by themselves and they are responsible for their learning outcomes.

One of the cooperative learning models is the TGT (Team Games Tournament) type described by David De Vries and Keith Edwards (1995). Rusman's (2014) opinion is that TGT is a form of collaborative learning that includes students in learning groups that include five-six students of different abilities, gender, ethnicity or race. Trianto's view (2009: 83) TGT learning model contains students who play games with other team members to score team points. The games are organized by the teacher in the form of quizzes motivated by conversations related to the subject matter. Based on the previous responses, the TGT type cooperative learning model is interpreted as a group learning model with heterogeneous members that stimulates students' active participation in the game and the teacher sets questions according to the subject matter.

The use of comic media in learning helps and encourages students to learn. Comic media can be an alternative media for learning. The function of comics themselves is to convey learning messages in the most way and make students interested in learning. In accordance with the opinion of Munadi (2018), comics can be used as learning media. Images in comics are usually in the form or character of cartoon images. It has a simple nature in its presentation and has elements of a story sequence that contains a large message but is presented concisely and easily digested, moreover equipped with dialogic verbal language. Based on this, comics can be utilized as learning media in the classroom. The unique images contained in comics can also attract students' attention to understand the subject matter that is the content of the comic story.

Armadani (2022) previously examined the effectiveness of using the TGT model and E- Comics media in terms of student interest and learning outcomes, concluding that the use of the TGT (Teams Games Tournament) learning model and E-comics media can make it easier for students to understand the material and easily analyze and work on cases if the explanation of the material is related to real life so that student scores are maximized. Then the use of e-comics media will be more effective in explaining the material, students will be more interested in listening to the explanation delivered by the teacher so that they can absorb all the material well. Furthermore, with a high interest in learning from within students that affects student learning outcomes.

One of the learning models that provides a way out to develop learning outcomes and student activity is the Team Games Tournament (TGT) type cooperative learning model using Comic (Webtoon) media. In addition, the TGT learning model is a flexible learning model, meaning that the games used can be applied to any material, in this study using straight motion material. The use of media supported by animated media makes students more excited when learning

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physics while making students like physics lessons more.

METHODS

This research was conducted at SMA Global Prima Medan which is located at Jalan Brigjend Katamso No. 282 - 283, Sei Mati, Kec. Medan Maimun, Medan City, North Sumatra Province. This study used all X grade students of SMA Global Prima Medan in the 2022/2023 school year as many as 2 classes were selected as the study population. The sample was selected using purposive sampling technique because the sampling technique was based on assessment. This study used 2 classes, namely 1 experimental class that used the Team Games Tournament type cooperative learning model and the second class, the control class that used the conventional learning model. The technique for obtaining data is a test by loading questions in the form of objective tests. The objective test form used by researchers is a multiple choice test distributed at the beginning (pre-test) while at the end (post-test) to find out the learning outcomes in the experimental and control classes in a total of 10 questions for answers a,b,c,d and e. For the initial test given before learning and for the final test conducted after learning. Observation is a tool to measure student activeness. This instrument is used to record student activeness during the learning process. During the learning process, monitoring the development of students' personalities in each session with the help of two observers. The roles observed are responding to questions, asking questions to the teacher, determining hypotheses, conducting experiments, combining data, analyzing data and drawing conclusions. The prerequisite tests in this study consisted of normality, homogeneity and mean difference tests (t-test). The following research procedure scheme can be seen in Figure 1.

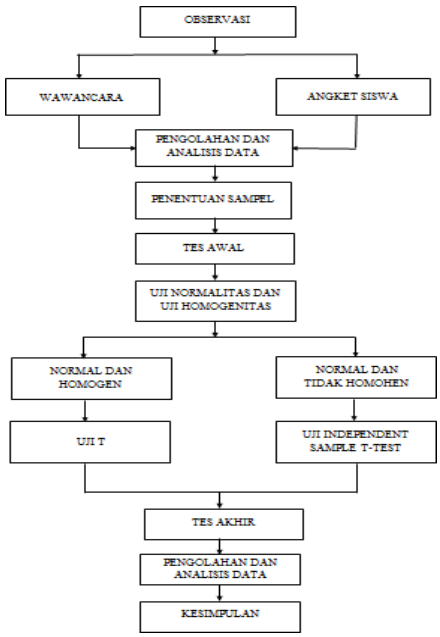

Figure 1: Schematic of Research Procedure

RESULT & DISCUSSION

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At the time of students' initial ability, the research results for the experimental class were very low at 34.66. After using the TGT type cooperative learning model, learning outcomes in straight motion material reached 80.33 with the category of completion. The increase in learning outcomes in the experimental class from the pre-test value to the posttest value of 45.67 was higher than the increase in learning outcomes by 19.66 over the control class from the pre-test value of 36 to the posttest value of 55.66. The average value of student learning activities when the first meeting of the experimental class was 72.96 including an active level. The average student learning activity score at meeting II was 80.37, including a very active level. During meetings I and II, the average student learning activity was 76.66 including the active category and increased at each meeting. The following Table 1 summarizes the results of the pre-test and post-test in the experimental class and control class.

	Average	Standard Deviation
Pre-test	34,66	14,55
Post-test	80,33	14,25

Table 1. Summary of pre-test and post-test in the Experimental Class

In the pre-test, the experimental class was still relatively low because the treatment of the TGT type cooperative learning model was not distributed. The post-test results of the experimental class showed that the TGT type cooperative learning model increased relevantly. The following overall student learning outcomes in the experimental class are presented in graphical form.

No	Value Range	Size	No	Value Range	Size
1	10-18	3	1	50-58	2
2	19-27	5	2	59-67	2
3	28-36	7	3	68-76	6
4	37-45	8	4	77-85	8
5	46-54	4	5	86-94	7
6	55-63	3	6	95-103	5
	Total	30		Total	30

Table 2. Distribution of Pre-test and Post-test Values of Experimental Classes

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	36,5	45,5	54,5	63,5
Post-test	2	7	8	3
Pre-test	3	2	8	5

Figure 2. Diagram of Pre-test and Post-test Learning Outcomes in Experimental Classes

In the control class, the summary of student learning outcomes can be arranged in the form of the following Table-3.

	Rata-rata	Standar Deviasi
Pre-test	36	14,52
Post-test	55,66	14,54

Table 3. Summary of Pre-test and Post-test in Control Class

The pre-test and post-test scores of learning outcomes for the control class showed an increase in good learning outcomes, although some students had not yet achieved a complete score. The following overall student learning outcomes in the experimental class are presented in the form of a graph. The pre-test and post-test learning outcomes for the control class showed an increase in good learning outcomes, although some students had not yet reached the completion grade. The following are the overall learning outcomes of students in the experimental class presented in graph form.

No	Value Range	Size	No	Value Range	Size
1	10-18	3	1	30-38	3
2	19-27	4	2	39-47	4
3	28-36	6	3	48-56	7
4	37-45	9	4	57-65	8
5	46-54	5	5	66-74	5
6	55-63	3	6	75-83	3
	Total	30		Total	30

Table 4. Control Class Pre-test and Post-test Score Distribution

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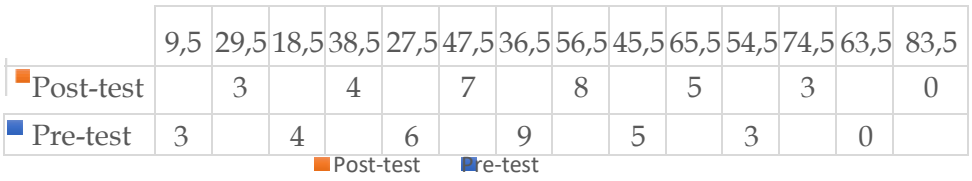

Figure-3. Diagram of Pre-test and Post-test Learning Outcomes in the Control Class

The difference in learning outcomes is caused by student participation in teaching and learning which motivates students to learn. They tend to discuss and ask for explanations on what material they do not understand to fellow team mates. Discussion in the TGT stage is intended to make students in a group more compact and able to solve the problems given. Similarly, Sari's research (2022) which applied the TGT type cooperative learning model succeeded in improving students' learning outcomes both cognitive, affective and psychomotor in the experimental class scores than the control class by 84 and 42.2.

Play-based learning activities designed according to the TGT model for cooperative learning allow better understanding of topics through several processes such as study groups, tournaments and awarding so that activities can be proven in student learning outcomes that affect student activity. The improvement of students' activity development can be seen in each meeting in Table 5.

Meeting	Total Score	Value	Decsription
I	2188	72,96	Aktive
II	2411	80,37	Very Aktive
Average	76,66		Aktive

Table 5. Student Activity Data in Experimental Class

Observers who assessed student activities found that the TGT type cooperative learning model contributed to student learning activities during meetings I and II. The average value of student learning activities at meeting I of the experimental class was 72.96, including an active level. The average value of student learning activity at meeting II was 80.37, including a very active level. During meetings I and II, the average student learning activity was 76.66 including the active category and increased at each meeting.

The lack of learning activities during the first meeting was because students in the experimental class had not been taught using the TGT type cooperative learning model. For the next meeting, students began to adapt to the TGT cooperative learning model, allowing many students to begin to involve themselves during the learning process. These results are in accordance with

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research conducted by Aruan (2020) showing that there is an effect of students' learning activities at each meeting which increases from meeting I (71.18), II (77.33) and III (84.22).

In using comic media (Webtoon), students become more motivated to learn and their curiosity increases. When the teacher introduced and demonstrated the comic media (Webtoon), students paid close attention to the learning. They were very enthusiastic in learning and asking questions which showed students' interest increased. The researcher pointed out that

using the help of Webtoon media, making students take an active role in the learning process by being given questions in teams that can increase the sense of responsibility of fellow teams and be able to increase the enthusiasm to study hard and attract students' attention. So it can be concluded that comics (Webtoon) are efficient when used in cooperative learning models. This is in accordance with the results of Hasfiyah's research (2020), which shows that there is an effect of the TGT model on physics learning outcomes and there is an effect in increasing student learning activities over two meetings by 73% and 78%.

The improvement of learning outcomes when using a learning model assisted by comic media (Webtoon) includes (1) being able to attract students' attention during the learning process so that students can play an active role when teaching and learning. (2) Encouraging students to learn by providing opportunities for students to develop deep understanding. (3) The TGT type cooperative learning model supported by Webtoon media educates students to practice socializing with other friends.

CONCLUSION

From the results of the research that has been done, it can be concluded that the learning outcomes of students using the Team Games Tournament type cooperative learning model are higher than the learning outcomes using conventional learning models. This can be seen from the average post-test scores of each class, the average post-test score of students using the Team Games Tournament type cooperative learning model is in the good enough criteria with an average score of 80.33 while using conventional learning the average post-test score of students is in the poor category with an average score of 55.66. So that student learning activities during the learning process when meetings I and II were treated with the TGT type cooperative learning model were in the active category with an average score of 76.66.

There is a difference due to the effect of the use of the TGT type cooperative learning model on student learning outcomes on straight motion material in Class X Semester I of Global Prima National Plus Private Senior High School Medan T.A 2022/2023 which can be seen in the results of the hypothesis test obtained $thitung > ttabel$ (6.632 > 2.002) then Ha is accepted, so it can be concluded that learning using the Team Games Tournament type cooperative learning model has better learning outcomes.

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