
Application of Cooperative Learning Model Teams Games Tournament (TGT) Type to Increase Activity and Results of Biology Learning in Class X-MIA 2, MAN-1 Pekanbaru 2015-2016 Academic Year

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ABSTRACT

Student learning result of class X MIA-2 MAN-1 Pekanbaru still not satisfactory. The strategies and methods used by teachers have not been able to improve the learning outcomes of students' Biology subjects. So that, it is necessary to improve the activity and learning outcomes of students through the implementation of cooperative learning Teams Games Tournament Type. The purpose of this study is, to describe the influence of the application of cooperative learning Teams Games Tournament Type seen from the student activities and learning outcomes on the subjects of Biology, The topic is about Plantae in class X MIA-2 MAN-1 Pekanbaru.

This Research Type is Classroom Action Research, That is Reflective Research by behavior of action done by teacher to improve learning process, consist of 2 cycles. Each cycle consists of planning, execution, observation and reflection. Assessment instruments in this research is, form of student worksheets, and discussion activity Sheets. The results showed that Cooperative Learning Type Teams Games Tournament (TGT) can improve student activities and learning outcomes. Student activity in first cycle is 66,66 % (24 student succes) increase become 75 % (27 student succes) in cycle 2. While student learning outcomes increased from 69.44% in the first cycle to 80.55 on cycle 2. The conclusion of this study is Cooperative Learning Teams Games Tournament (TGT) can increase the activity and learning outcomes Biology class X-MIA 2 MAN-1 Pekanbaru Academic Year 2015-2016.

Keywords: *Cooperative Teams games Tournament type, Student activity, Learning outcomes, Plantae*

Introduction

The current educational system has been progressing rapidly. Various strategies and learning models are applied in the teaching and learning process, with the hope that teacher teaching will be more memorable and meaningful for the students.

The process of teaching and learning activities in the classroom should be applied by using various methods of learning, in the hope that students, can receive the lesson materials well and provide satisfactory results. The teaching method should be able to activate the left

brain and also the right brain (Asbullah, 2008: Agip, 2006).

Based on the observations and experiences of researchers, from several classes that researchers taking, in class X-MIA 2 is a class that is identified as having

low motivation and learning outcomes. Daily test results from some basic competencies, many still have not reached the minimal criteria number.

The low results of students daily reactions are caused by a lack of student motivation in learning. Teachers are still difficult to

motivate and foster interest in learning. The current teaching is mostly done by writing, reading and listening with the subject that most teachers hold. A teacher often uses lecture methods in relaying lessons. Students can not maximally utilize their potential because they are too teacher center. If this method is too often used then certainly can cause saturation because there is no new color in teaching and learning activities. Difficult mastery and understanding of the material by the students through the lecture method occurs in most of the lessons, not least the subjects Biology. Based on the issues mentioned above, action needs to be done in class X- MIA 2, and from the results of the action given the expected student learning outcomes can increase.

One of the learning models that can be applied to improve students' understanding in biology is Teams Games Tournament (TGT) model. This learning model involves more students actively in discussing the subject matter and discussing issues by way of inter-group competition (Undang, 2009). The dynamics of competition will enhance competitiveness so that students will play a more active role, especially if the questions are discussed using a game. The atmosphere of the competition will also bring the class up and build the spirit of learning. Thus the materials that are difficult to learn are expected to be more easily understood (Slavin, 1995)

Theory review

2.1. Learning and Learning Strategies

Learning is a process of interaction between teachers and students. In this process is expected transfer of knowledge from teacher to student can happen maximally. The success of learning is determined by the learning strategy. Learning strategies include several matters relating to the success of achieving

competence in learning, the subjects presented, methods and media to be used and how the classroom management. (Kirby *cit* Silberman, 1996) Saying that a strategy is basically a method to perform a task or to achieve a goal, difficult to change.

Strategies have broad meaning related to planning and problem determination. Determining the right way to achieve goals and using certain knowledge to respond to problems. In the learning process, strategies other than goal-oriented or the end result, but also focus on the learning process which means involving teachers and students. Nisbeth *cit* Sumiati & Asra (2008) divide learning strategies into 3 stages:

1. Preparation: Determining goals and associating new materials with previous ones.
2. Planning: Determine the best way to achieve the learning objectives and the skills and information required.
3. Reflection: Contemplating the quality of the learning generated, what can be learned and what aspects can be reused.

Liveliness in learning is reflected from the activities both done by teachers and students by using the following traits like, 1). Involvement of students in learning process, 2). The existence of intellectual-emotional involvement of students either through activities of experiencing, analyzing, doing and determining attitudes, 3). Creative participation of students in creating something suitable for the process of learning and 4). Teachers act as facilitators and coordinator of student learning activities, not as instructors that dominate class activities, (Syahza, 2009),

2.2. Cooperative Learning Model type Teams Games Tournament (TGT)

Many experts argue that cooperative learning models excel in helping students understand difficult concepts. Cooperative learning also according for them have an effect on the attitude of acceptance of difference between individual, religion, gender, social economy and others. In addition, most important cooperative learning teaches cooperative skills in group or team work. This skill is needed by the child when it is released to the society (Muchsan *et al.*, 2008)

Cooperative learning model has many variations. One of them is cooperative learning model type Teams Games Tournament (TGT). According to Saco (2006) in TGT students play games with other team members to score for their respective teams. The game can be composed by the teacher in the form of quiz in the form of questions related to the subject matter. Sometimes it can also be interspersed with questions relating to group identity.

The games in TGT can be as questions written on numbered cards. Each student pick up a numbered card and attempt to answer questions that match those numbers. The tournament should allow all students of varying degrees of ability to contribute points to their group. In principle, it is difficult for a smart student and an easier problem for a less intelligent student (Helma, 2012). All student have the possibility of scoring for the group. Games that are packed in the form of this tournament can serve as an alternative assessment or it could be a review of the subject matter (Silberman, 1996)

Methodologi

This research, conducted as Classroom Action Research. Its research model applied in the

classroom with TGT Model. Variable in this case is, the result of student learning and activity, while the independent variable is the Teams Games Tournament model. Conducted in MAN 1 Pekanbaru in class X MIA 2, consist of 36 students. The subject is about plantae. Plantae is one of kingdom in living things (Priadi, 2006; Ronal, 2004) Its start on February to May 2016. Implementation of the action consists of several cycles. The procedure of study research is 1). Planning, 2). Action, 3). Observation and 4). Reflection.

1. Planning

In This stage of planning in taking action to determine the action plan of research are: A). Preliminary activities, core activities, closing activities tailored to the method of assigning task sheets and answering questions. B). Selecting the subject for the application of learning by giving the task sheets, with the basic competence of this research is to make syllabus, planning teaching and student worksheet. C). Determine the learning group. D). Plan the observation sheet to observe the student's activity in answering questions. E). Preparing evaluation tools in the form of assessment of the work of groups and individuals, and making daily test questions. F). Planning a reflection at the end of each cycle is completed (Nur, 2005)

2. Action

Activities undertaken are implementing the planned teaching. Implementer of the action is a researcher as a Biology teacher. Implementation of the study along with observation and filling of observation sheets, consists of several cycles with: A). Sets the implementation of the number of cycles depending on the results of cycle I. and B). Implement cooperative learning TGT Model.

The model is a representation of reality presented with a degree of structure and sequence. TGT learning steps:

1. The teacher divides the class into several heterogeneous groups
2. Teacher explains the purpose of learning and group assignment
3. Students discuss group assignments and individual tasks.
4. The teacher prepares the cards containing the questions according to the material, from difficult until easy question.
5. To answer the question, put up some table tournament, each table occupied by 1 student with equal ability.
6. Tournament implementation, each student answer the question card
7. Get the score of individual values as well as group scores.
8. Evaluation

3. Observation

Observation activities carried out simultaneously with the implementation of learning. Conducted by 1 observer to observe the activities of students and teachers during the teaching and learning process, evaluation of group and individual work carried out at each meeting. The final evaluation is daily test at the end of the cycle.

4. Reflection

Reflection is a way of rethinking what has just been learned or thinking what has been done in the past. It can also be said that reflection is a response to events, activity or new knowledge received.

The data obtained from the observation, then reflected to take action on the next cycle. Evaluation of the implementation of learning in cycle one become the reference to

implement the learning process in the second cycle. If not successfully, followed by the third cycle.. The study was stopped when student competence has reached. Data collection techniques used, is a percentage technique that compares the emergence of the overall multiplied by 100%. The value of learning results obtained by the formula:

$$NH = \text{Value of Learning Outcomes}$$

$$PKK = \text{Classical Counseling Presentation}$$

$$SDS = \text{Scores obtained by students}$$

$$JST = \text{Number of students completed}$$

$$SMT = \text{Maximum score of test}$$

In this study the instrument used in the form of objective test. The data collected is quantitative data. According to BNSP (Ministry of National Education) processing of learning outcomes for understanding the concept with objective problems formulated as follows:

$$\text{Value} = \frac{\text{Totally correct answers}}{\text{Total of questions}} \times 100$$

Total of questions

Criteria interval understanding of the concept as follows:

- A. 85 - 100 = very good
- B. 70 - 84 = good
- C. 50 - 69 = enough
- D. 0 - 49 = less good

Result and discussion

This research conducted in 2 cycles and previously held group determination. Student divide into several group. Criteria question consists of:

- Problem A: Very difficult
- Problem B: Difficult
- Problem C: A little difficult

Problem D: Moderate

Problem E: Easy

Problem F: Very easy

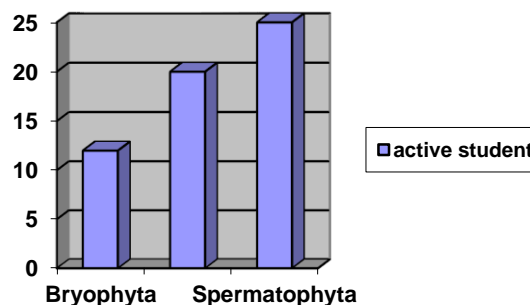
Cycle one was conducted in 6 meetings with subject matter of kingdom plantae including Bryophyte, Pterydophyt and Spermatophyte (Samsuri, 2004:Thomy, 1996). While the second cycle is done in 4 meetings with the subject matter kingdom animaliainclude phylum Porifera, Phylum Coelentera, phylum Mollusca and phylum Echinodermata.

The data collected in the form of student learning outcomes both in doing worksheet and in answering the questions on tournament, student activities in groups and completeness of learning outcomes from daily test.

Data shows that the truth of the students answer questions with the ability level is easy and very easy, very good. This can be seen from the percentage of students about 66,6-100% who completed. As for the problems with the level of the problem is difficult and difficult (A and question B) is still quite low, is about 0-16 %. The truth of the answers shows improvement as the easier the questions on the cards are given. This is seen from almost all learners who answer the question with the code E and F can answer the question correctly. For the implementation of third time cycleone, the number of questions is added because the material is more. We got the results of this session, scores obtained students are also not maximal. For problems with difficult and difficult levels are still low. But this can be said quite good because there is still an increase in the truth answers for each category of questions. For questions C, D, E and F the level of mastery can be summed up either.

For discussion activities conducted is categorized well. In addition to discussing the subject matter in each group, students are also

required to work on the Student Sheet. Indicator observed by observer is activity in discussion and Doing (work sheet). Graph 1 illustrates the level of student activity in group discussionsn



Graph 1: Student activity in first cycle

After the learning process using cooperative learning model TGT cycle one is completed, then the daily test is done to measure the completeness of the students' learning outcomes in cycle 1. The daily test issue consists of 20 objective questions. The result of students' learning mastery in cycle one is presented in Table 1.

Table1. Rekapitulation of daily test in cycle 1

No	Subject test	Total student		Minimal Criteria (score= 78)
		Finish	unfinish	Finish percentage
1	Test resultcycle 1	25	11	69,44

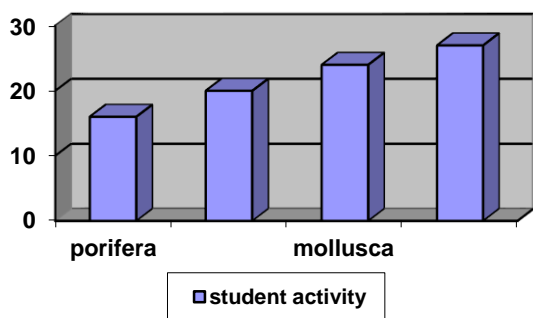
From daily test resultin cycle one, topic plantae, percentage finish student is 69,44%. These results have not met the target expected. At the next meeting it was improved by the way teachers gave important points about the discussion materials and indicators to be mastered by each group member. To improve the liveliness of the group members' discussions, the observer and the teacher go around each group and assist the student in solving the problem. The next meeting of the students has been assigned to read the

material to be learned at the next meeting. And at the next learning meeting that is on the basic competence of animal physiology characteristics and its role for the life of the students are expected to have read first at home. It is expected that with the learning of the material before the students' learning can be better understood and the discussion process in the group can walk more alive. Increased ability to answer question in cycle 2 is quite significant compared to cycle 1, More than 50% of students have been able to answer the question correctly. Table 2 show the result ability student to answer question TGT in cycle 2.

Tabel 2. Rekapitulation of ability to answer Question in cycle 2.

NO	Subject test	Total student		Note
		Finish	unfinish	
1	Question game in Cycle 2	28	8	77,77

Completeness in answering questions on basic competence mollusca quite good because it reached 77.77%. At this stage all questions have the same level of difficulty. Improved values can also arise because the more diligent students ask, this can be seen from the observation of student activity monitored by the observer. Graph 2. Present a recap of student activity in cycle 2.



Graph 2. Student activity in cycle 2

After the learning process using cooperative learning cycle 2, to measure the completeness

of student learning outcomes in cycle 2 we done daily test. Daily test consists of 20 objectivequestion. The result of students' learning mastery in cycle 2 is presented in Table 3.

Table3. Rekapitulation daily test in cycle 2.

NO	Subject test	Total student		Minimal criteria78
		Finish	unfinish	
1	Daily test 2	29	7	80,55

The use of TGT learning model that starts from cycle one shows the truth of the students in answering the problem is only 58%. However this percentage increased in the second cognitive test meeting that is 69%. The same thing also happened in cognitive test in cycle oneis about 72%. This increase is possible because students begin to actively discuss before answering questions.

The competency test result for daily test 1and2, it was found that the completeness of daily test 1 was 25 students or 69,44% while in UH 2 students were 29 students finish. This means an increase in mastery of 11.11%.There is an increase in learning achievement by using cooperative learning model type TGT because students have learned to understand teaching materials by way of thinking, discussion and answering questions. The implementation of this method is categorized well and can be used as one of the learning that can be applied to the next learning process. According Saco (2006), the TGT model enables students to become more active and more enthusiastic because there is competition between groups. Games that are packed in the form of this tournament can serve as an alternative or as a review of subject matter

Conclusions and Suggestion

Based on the results of classroom action research that has been done can be concluded as follows: 1. Learning TGT model can improve learning outcomes in Plantae material. This increase is seen from the value of daily replication completeness. 2. Learning of TGT model can improve student's learning motivation which can be seen from discussion activity

Cooperative learning model type TGT can be an alternative learning model for other teachers. Cooperative learning model type TGT can be collaborated with other methods to better maximize the creativity and activities

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