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Implementation of team games tournament learning model to improve student learning outcomes on animalia material

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ABSTRACT

This research is motivated by the fact that many students still obtained cognitive learning outcomes below the minimum completeness criteria (KKM). This study aims to improve student learning outcomes and to find out the learning process using the *team games tournament* learning model on Animalia material in class X IPA 5 SMA Negeri 3 Pontianak. The research method used class action research conducted in two cycles, each cycle consisted of four stages, namely planning, action implementation, observation, and reflection. The research instruments used include observation sheets of the learning implementation process, as well as learning outcomes test questions. The data analysis technique used descriptive statistics. The results showed an increase in the implementation of the learning process, namely in cycle I at 79.16% and cycle II at 95.83%. Student learning outcomes in cycle I amounted to 78.13% and increased in cycle II by 81.25%. It can be concluded that the application of the Team Games Tournament learning model can improve student learning outcomes.

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INTRODUCTION

Education is very important in human life. Through education, people can gain the knowledge, skills, and attitudes needed for themselves as an individual and society (Alpian et al., 2019). Education is also a conscious effort made by an educator to guide and develop the potentials that exist within each individual. This is by the Law of the Republic of Indonesia Number 20 of 2023 Article I Paragraph I which states that "education is a conscious and planned

effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, intelligence personality, noble character, and skills needed by themselves, society, nation, and state".

The learning process in the classroom is a very important part of education (Sugiata, 2018). To achieve good results, a good learning planning process is also needed. Therefore, teachers as educators have a very important role in organizing the classroom as part of the learning process. Teachers also have the task of creating learning activities that are interesting and can motivate students to learn (Dirgari et al., 2023). This needs to be done so that students are not bored in participating in learning activities and can trigger students' curiosity to learn. It aims that they can achieve the desired learning outcomes. As stated by Saleh (2021) the role of the teacher is a pattern of behavior that has responsibility for student learning outcomes through teaching and learning interactions that can create the best possible learning conditions. The role of teachers in the process of educational progress plays a very important role because teachers play a role in improving learning outcomes (Fatmawati & Yuliatin, 2019).

Learning outcomes are important to observe the achievement of learning objectives and become a benchmark for students to succeed in participating in learning activities. The parameter used to measure the level of mastery of students' knowledge and skills in subjects in educational units is the establishment of a minimum limit of learning completeness (Sari & Yulhendri, 2020).

Based on the data obtained from the results of the researcher's teaching experience in class X IPA 5 SMA Negeri 3 Pontianak using the discovery learning model, it was found that student learning outcomes were low and had not reached the minimum completeness criteria (KKM) of 78. The number of students who participated in the learning was 32 people with an average score of 70.3 and the percentage of classical completeness was only 34.37%. This is due to the use of models that are too often used and never varied, which causes the students to experience boredom and are not motivated to learn (Nurhidayah, 2018). Another factor that causes low learning outcomes is that Biology material tends to be large and complex and many scientific terms are difficult to remember (Zulfadli & Kurniati, 2020). This statement is in line with the research of Rahmawati et al. (2020) that weaknesses affect learning outcomes, namely low student participation in learning, students are not motivated to learn, and students are less interested in the process the teacher presents the material because the learning methods and models applied are not varied. To overcome these problems, teachers must innovate in the learning process, one of which is by using the right learning model that can support the achievement of learning objectives so that students can achieve knowledge of the underlying concepts and principles (Zulfira et al., 2019).

The learning model used must also be able to create learning that is fun, meaningful, and involves students' motor and cognitive activities. Researchers tried to apply the Team Games Tournament (TGT) type cooperative learning model to improve student learning outcomes. The cooperative learning model is a learning model that places students to learn and work in small groups collaboratively. Each group consists of four to six people who are heterogeneous in terms of ability, gender, religion, and ethnicity (Rusman, 2012). One type of cooperative learning is TGT which is characterized by in-class tournaments. The winner of this tournament will be given an award by the teacher which can increase students' learning motivation (Zulfadli & Kurniati, 2020). The TGT learning model consists of 5 stages, namely learning activities starting with paying attention to the teacher's explanation (class presentation), teams (learning in groups), games (playing games), tournament (academic tournament), and team recognition (Mulyani et al., 2018). The advantages of the TGT-type cooperative model are that it trains students to express or convey their ideas, trains students to respect the opinions and ideas of others, and fosters a sense of social responsibility in each student (Siregar, 2021).

The use of the TGT learning model can affect student learning activities in the classroom. Students are very enthusiastic about participating in the learning process because the game, tournament system, and group assessment make students more interested and challenged (Nurayani, 2020). In addition, the TGT learning model also gives students the freedom to interact and express their opinions, increases students' confidence, students' behavior that disrupts the learning process, increases learning motivation, sensitivity, and tolerance between students will increase, cooperation between students, and the learning process will become active and not boring (Ismah, 2018). According to Adnyana (2020), the use of the TGT learning model can improve student learning outcomes on cell structure material. This is indicated by an increase in student learning completeness in cycle I by 69.33% then increased in cycle II by 97%. This is also in line with research by Nehru (2022), that the TGT learning model can improve the learning outcomes of students of SMAN 2 Woha. This is evidenced by the results of student learning tests that have increased from cycle I of 46.67% to 76.67% in cycle II.

Based on the description above, class action research was conducted with the title "Application of Team Games Tournament (TGT) Learning Model to Improve Student Learning Outcomes on Animalia Material" in Class X IPA 5 SMA Negeri 3 Pontianak. This study aims to improve student learning outcomes and find out the learning process using the team games tournament learning on Animalia material in class X IPA 5 SMA Negeri 3 Pontianak.

RESEARCH METHODS

Research Design

The type of research is classroom action research. Azizah (2021) argues that classroom action research is research conducted by teachers in their classrooms carried out in ordinary learning not in special classes. This classroom action research was carried out collaboratively between researchers as teachers who taught in class and assisted by Biology teachers at SMA Negeri 3 Pontianak. Classroom action research is carried out in a cycle, each cycle consists of four stages, namely planning, implementation (action), observation (observation), and reflection (Arikunto, 2013). The stages of each PTK flow can be seen in Figure 1.

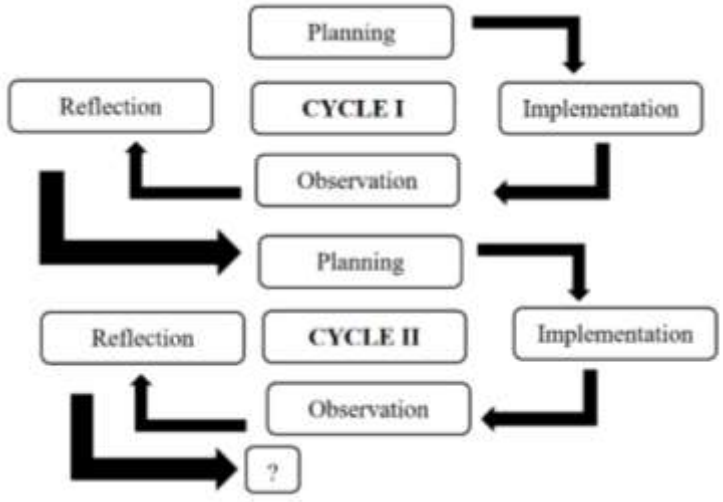

Figure 1. Classroom Action Research Flow (Arikunto, 2013).

Population and Samples

The subjects in this research were students of class X IPA SMA Negeri 3 Pontianak in the 2022/2023 academic year consisting of six parallel classes. The object of this research is class X IPA 5 which has a total of 32 students, consisting of 13 male students and 19 female students.

Instruments

The instruments used in this research include observation sheets and cognitive test devices in the form of multiple-choice test questions. The data collection technique used was direct observation using an observation sheet to observe teacher activities in managing learning. Measurement of learning outcomes using tests in the form of multiple-choice questions totaling 10 items with 5 alternative answer choices given at the end of each cycle. Documentation is a data collection tool in the form of documents such as lesson plans, evaluation questions, learning outcomes, photos, and learning videos that can strengthen research results.

Procedures

This research was conducted over two cycles with each cycle consisting of four stages, namely planning, implementation, observation, and reflection. This class action research was conducted from March to April 2023. The planning stage includes the preparation of the Learning Implementation Plan (RPP), student worksheets, evaluation questions, learning media, and observation sheets to observe the implementation of the learning process. The implementation and observation stages were carried out in two meetings with a total time allocation of 3x40 minutes to observe the implementation of learning using observation sheets and documentation. Data collection on student learning outcomes was carried out at the end of learning in each cycle. The reflection stage is carried out by the teacher and observer to discuss the findings of the research process which will be used as a basis for improvement in the next cycle..

Data Analysis

According to Fitriyana (2020), the data analysis technique used is descriptive statistics. Data analysis is done by giving a score. The score obtained from the observation of the implementation of learning by the teacher is then calculated as the average and percentage. The results obtained were then compared with the assessment criteria referring to Mugas (2014) presented in Table 1.

Table 1. Classification of Teacher Activity Score Levels in Managing Learning

Criteria for Completion	Rating Scale
19.5 ≤ score ≤ 24	Very good
13 ≤ score ≤ 19.5	Good
6.5 ≤ score ≤ 13	Simply
0 ≤ score ≤ 6.5	Less

Learning outcome data were analyzed by giving test scores, converting scores into grades, and calculating the percentage of classical completeness. The indicator used to measure the success of learning activities with the TGT model is that student learning completeness reaches ≥ 75% of 32 students with a minimum completeness criteria (KKM) of 78. According to Maulidya et al (2023) if student learning completeness exceeds 75% of the number of students in a particular class, then there is a significant increase in learning outcomes.

RESULTS

Learning outcomes are an important aspect of a learning activity to see the achievement of learning objectives and become a benchmark for student success in participating in learning. Based on the research that has been conducted, data on the learning implementation process and student learning outcomes data in cycle I and cycle II using the Team Games Tournament (TGT) model are obtained. The data on the learning implementation process carried out is presented in Table 2.

Table 2. Results of the Learning Implementation Process with the Team Games Tournament Model

Aspects observed	Achievement	
	Cycle I (%)	Cycle II%
Preparing students for the activity learning and preparing the facilities needed	87.50	100
Conducting early learning activities	87.50	93.75
Presenting learning materials	75.00	93.75
Guiding students in discussion and presentation	75.00	87.50
Conducting a team games tournament	75.00	100
Closing the lesson	75.00	100
Average	79.16	95.83

Based on Table 2, it is known that there was an increase in the percentage of the learning implementation process. The increase occurred in all aspects observed in the learning process. The results in cycle II show that overall the learning stages have been carried out with very good criteria. Students' understanding of the learning process with the TGT model on Animalia material can be seen from the results obtained in the implementation of evaluations at the end of learning cycle I and cycle II. The data on the percentage of competency achievement indicators obtained by students in cycle I and cycle II are presented in Table 3 and Table 4.

Table 3. Percentage of Achievement of Competency Achievement Indicators Cycle I

Competency Achievement Indicators	Question Item	Percentage Answer	
		Correct (%)	Incorrect (%)
Identify the characteristics of invertebrate animals	1, 2, 3, 4, 5, 6	83.85	16.15
Connecting the role of invertebrates in life	7, 8, 9, 10	77.34	22.66
Average		80.59	19.41

Table 4. Percentage of Achievement of Cycle II Competency Achievement Indicators

Competency Achievement Indicators	Question Item	Percentage Answer	
		Correct (%)	Incorrect (%)
Identify common features of vertebrates	1, 2	87.49	12.51
Analyze the characteristics of the animal classification vertebrates	3, 4, 5, 6, 7, 8	82.28	17.72
Connecting the role of vertebrates in life	9, 10	100	0
Average		89.92	10.08

Table 5. Student Learning Outcomes Using the Team Games Tournament Model

No.	Completeness	Cycle I		Cycle II	
		Total	Percentage (%)	Total	Percentage (%)
1.	Completed	25	78.13	26	81.25
2.	Not Completed	7	21.88	6	18.75

Based on Table 3 and Table 4, it can be seen that the percentage of students' correct answers for each indicator is greater than the wrong answers. The results of the analysis of the average GPA achievement are directly proportional to the learning outcomes obtained by students. The student

learning outcomes are presented in Table 5. Based on Table 5, it can be seen that there was an increase in student learning outcomes in cycle II using the TGT model.

DISCUSSION

Cycle I

The implementation of learning carried out in this class action research consists of two cycles. In cycle I there are several stages, the first is planning by designing learning instruments in the form of a Learning Implementation Plan (RPP) that applies the TGT-type cooperative learning model, student worksheets (LKPD), evaluation questions, observation sheets to observe the implementation of the learning process, and preparing media that will be used in the implementation of the tournament. The second stage is the implementation of actions carried out in two meetings with a total time allocation of 3x40 minutes.

The observation stage is carried out when learning activities take place. The results of the observation of the learning implementation process are, (1) The teacher must convey the learning steps to be carried out along with the time allocation for each activity; (2) Pay attention to the condition of the students before explaining the material; (3) Arrange the place and position of the students' seats to minimize noise; (4) Design the rules in the implementation of the tournament in detail and convey them to the students; (5) Provide supervision and give punishment in the form of a reduction in grades to groups that cheat.

The last stage is reflection, as for the results of reflection on cycle I which must be improved in the implementation of cycle II, namely, (1) Delivering learning steps in the initial activities of learning; (2) Checking student attendance and readiness before starting learning; (3) Providing direction in the discussion process; (4) Arranging rules in the implementation of tournaments; (5) Supervising and giving score reductions to groups that do not obey the rules.

The learning process in cycle I can be carried out well and has a percentage of success of 79.16%. Students' learning outcomes on Animalia material classically have also reached the success indicator with student learning completeness reaching 78.13% and the number of students who completed 25 people. The teacher's ability to manage learning has a positive influence on student performance and mastery of learning materials (Lakapu, 2023).

Cycle II

In the implementation of learning in cycle II, at the planning stage, researchers prepared research instruments as in cycle I with additional improvements from the results of the reflection. In the second stage, the implementation of the action was carried out in two meetings with a total time allocation of 3x40 minutes. In the observation stage, the results obtained are, (1) Learning activities have been carried out well and all stages of learning have been carried out by the designed lesson plan; (2) Students actively participate in discussion activities so that during presentations many students ask questions and express opinions; (3) The teacher can pay attention and provide guidance to all groups; (4) Tournament activities can run effectively; (5) Reflection activities have been carried out by asking about concepts that have been understood and concepts that are still difficult to understand.

The last stage is reflection, as for the results of reflection in cycle II, namely, (1) The teacher has carried out all learning activities carefully and well; (2) Discussion and presentation activities have been able to make students active in learning activities; (3) The teacher has been able to provide comprehensive guidance to all groups; (4) Tournament activities have run conducive and effectively; (5) Reflection activities have been carried out at the end of learning.

The learning process in cycle II has improved from cycle I with a percentage of 95.83%. The criteria for implementing learning in cycle II are very good because all stages of learning can be

done during the implementation of learning. The excellent learning process using the TGT model was directly proportional to the learning outcomes of students in class X IPA 5 SMA Negeri 3 Pontianak on Animalia material which also increased from cycle I. The percentage of classical learning completeness in cycle II was 95.83%. The percentage of classical learning completeness in cycle II was 81.25%.

Improved Student Learning Outcomes

Based on Table 5, learning outcomes based on the number of students who completed the first cycle were 25 people with a percentage of completeness of 78.13%, then increased in cycle II by 26 people with a percentage of completeness of 81.25%. This shows that the application of the TGT model can improve student learning outcomes. This is in line with the results of previous research which showed that the TGT learning model successfully improved student learning outcomes (Zulfadli & Kurniati, 2020). Similar research also concluded that learning activities using the TGT model affected improving student learning outcomes on cognitive aspects of the human digestive system material (Lestari, 2023).

The learning outcomes obtained are reinforced by the percentage of students who answered correctly per competency achievement indicator in each cycle. Based on Table 3 and Table 4, the average number of students who answered correctly in cycle I was 80.59% and increased in cycle II by 89.92%. This proves that the application of the TGT model can improve student learning outcomes. This is in line with Adnyana's research (2020) that the TGT model can be used to increase student activeness and achievement in learning biology.

Thus it can be seen that one of the efforts that can be made by teachers in improving the learning outcomes of students in class X IPA 5 at SMA Negeri 3 Pontianak in Animalia material is using the TGT learning model. The increase in student learning outcomes using the TGT learning model is due to the game/tournament and awarded at the end of the tournament to create positive learning competition and motivate students to achieve optimal learning outcomes (Hikmah et al., 2018). Similar research also states that learning activities using the TGT model are very fun because students can learn while playing (Mustika, 2020). This is again reinforced by Lestari's research (2022) that the use of the TGT learning model has a positive effect on student learning outcomes. Based on learning activities, the following TGT model is shown in Table 6.

Table 6. Learning Process Using Team Games Tournament Model

Figure	Note
	Group Activities
	Games and Tournaments
	Calculating Individual Progress Score

	Team Recognition
	Draw Conclusions
	Evaluation

CONCLUSION

Based on the research findings, it can be concluded that it is necessary to carry out the learning process by using the team games tournament learning model to improve student learning outcomes on Animalia material. The increase in student learning outcomes from cycle I to cycle II is supported by improvement efforts made by teachers in the learning process. The results showed that learning by using the team games tournament model on Animalia material in class X IPA 5 State Senior High School 3 Pontianak was well implemented and could improve student learning outcomes. The implementation of learning activities has increased from 79.16% in Cycle I to 95.83% in Cycle II. Student learning outcomes in cycle I amounted to 78.13% and in cycle II amounted to 81.25%.

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