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Teams Games Tournament Learning Model on Students Activities and Learning Outcomes at Modern Islamic Boarding School

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Abstract: This research aims to find out the influence of the Teams Games Tournament (TGT) learning model on students activities and learning outcomes of class XI at Nurul Hakim Modern Islamic Boarding School. The type of this research is a Quasy Experiment. The population in this study was all students of class XI IPA of Nurul Hakim Modern Boarding School which amounted to 60 students. The sample used was class XI IPA 1 as an experimental class of 30 students and class XI IPA 2 as a control class of 30 students. Research instruments used to find out student learning activities are using a student learning activity questionnaire and for student learning outcomes was use multiple choices test of 25 questions. Data analysis was done using hypothesis tests. The percentage of students' learning activities in the experimental class was 83.70% which was higher than the learning activities of the control class students, which was 51.50%. The average learning outcome in the experimental class model was 82.00 and in the control class was 78.00. Based on the results of the analysis of $t_{hitung} > t_{tabel}$ which is 3.06 > 2.00, which means that H_a is accepted, and H_o is rejected. So, it could be concluded that there is an influence of student learning activities and outcomes using the Teams Games Tournament (TGT) learning model.

Keywords: Teams Games Tournament, Students' Activities, Learning Outcomes, Learning Model

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INTRODUCTION

The nine-year compulsory education initiated by the government is one of the efforts to educate the nation's life. In this effort, the government issued Law no. 20 of 2003 concerning the national education system which states that "Every citizen has the same right to obtain good quality in education" (Republik Indonesia, Undang-undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional, 2003). Education is a learning process that requires hard work to understand something through hearing, seeing, observing, writing, contemplating, and reading because with knowledge, humans can achieve everything. Education that is able to support the development of education in the future, it means that education can also develop the students potential, so that those concerned are able to face and solve life problems they face (Hamsir, 2017).

One of the efforts to improve the quality of education is by improve the quality of teachers. Teachers are facilities and models in education, so that teachers must be able to use appropriate methods or techniques when teaching in order to achieve student success in learning. Thus the learning process can be carried out optimally and education has increased from time to time (Republik Indonesia, Undang-undang Nomor 22 Tahun 2006 tentang Standar Isi, 2006).

But in fact, based on the results of initial observations at the Nurul Hakim Modern Islamic Boarding School, Indonesia through an interview with one of the biology teachers, Mrs. Rogayah, that the teaching and learning process at the Nurul Hakim Modern Islamic Boarding School still often uses conventional methods, including the lecture, question, answer, discussion, and assignment methods. This method focuses learning activities on the teacher (*teacher centered*). This learning place the students as listeners (objects), so that they tend to be passive (less active) as a result. Students looked bored when the teaching and learning process takes place.

Based on the learning model described above, it can be known that the learning process is entirely under control of the teacher. Students aren't given the opportunity to explore, so students have less experience in learning. There may be development of thought processes, but these processes are very limited and occur in low-level thinking processes. Through this learning pattern, the types of psychological factors in children are not fully developed. For example, students' mental and learning motivation. In addition, the biology learning of students in class XI at Nurul Hakim Modern Islamic Boarding School is still relatively low,

more than 50% of students have scores below the Minimum Completeness Criteria (KKM) while the KKM that must be achieved is 75.

To overcome this problem, the researcher use learning model of *Teams Games Tournament* with the aims that students being able to think critically and actively in learning and be able to understand the material being studied (Bolhassan & Taha, 2017; Kaeksi & Setiawati, 2019; Madhu Gupta & Pooja Pasrija, 2016). *Teams Games Tournament* (TGT) is a type of cooperative learning, where students learn in small groups with the main components in the form of class percentages, team discussions, academic games, and team recognition (Pradhita Yudhi Astri et al., 2018; Veloo & Chairhany, 2013)

Slavin (2014) states that the purpose of using TGT is to avoid problems that usually become a barrier in a learning process. Learning with group that usually dominated by one or two students can be avoided and abilities to discuss in group can be possessed by all students (Bolhassan & Taha, 2017). By using the TGT learning model, teammates will help each other in preparing for the game by studying the activity sheet and explaining the problems to each other, but when students are playing the game, their friends should not help to make sure it has happened to increase individual (Panggabean et al., 2021; Putri & Prasetyo, 2018; Wyk, 2011). So, each member has the opportunity to contribute for the group (Wulandari & Anggis, 2020).

METHOD

This research was a quasi-experimental study using a total sampling technique (Trianto, 2011). The population of this research was class XI IPA Nurul Hakim Modern Islamic Boarding School, Indonesia with sample of 2 classes, namely class XI IPA 1 as experimental class and class XI IPA 2 as control class. Total students in class XI IPA 1 was 30 students, and in XI IPA 2 was also 30 students. The learning model used in experimental class was Teams Games Tournament (TGT), and control class used a lecture model or usually it's called conventional model.

In collecting data, researchers used research instruments in the form of written tests and questionnaires. The test was given to students before (pretest) and after learning (posttest) in the form of multiple choice questions, with the material being tested is the excretory system. As for the non-test instrument, namely a questionnaire, which was used to see student responses to student learning activities using the Teams Games Tournament learning model.

Written test and questionnaire have passed the validity stage before they were given to students. These instruments were carried out to Biology Education lecturer as material

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experts. Test instrument was also tested on students of class XII IPA. The design of this research is explained in **Table 1**.

Table 1. Research design

Class	Pretest	Treatment	Posttest
Experiment	O_1	X_1	O_2
Control	O_3	X_2	O_4

Description:
X_1 = Using the *Teams Games Tournament*
X_2 = Using the conventional model (lectures)
O_1 and O_3 = Both groups conducted a pretest (pretest)
O_2 = The experimental group conducted the final test (posttest)
O_4 = The control group did the final test (*posttest*)

FINDING AND DISCUSSION

Finding

The research conducted in class XI IPA Nurul Hakim Modern Islamic Boarding School Deli Serdang was a quasi-experimental study using total sampling technique to determine the effect of the TGT (Teams Games Tournament) learning model on learning activities and student learning outcomes with material of Excretion material in class XI IPA Nurul Hakim Modern Islamic Boarding School Deli Serdang. The data collection in this study was written tests (student learning outcomes, namely pretest and posttest) and student learning activities questionnaires. Data were collected from 60 students consisting of 30 students in class XI IPA 1 as the experimental class (by using TGT (Teams Games Tournament) and 30 students in class XI IPA 2 as the control class.

Learning Activities

Assessment of learning activities was carried out during the learning process, starting from the beginning to the end of learning in class. To find out student learning activities, statistical tests were used using the TCR formula (respondents' level of achievement) (Arikunto, 2013) So we get the data in **Table 2** and **Table 3.**

Table 2. Presentation of learning activities of experiment class

Meeting	Score	Percentage (%)	Description
1	619	61.90	Enough Active
2	843	84.30	Very Active
3	902	90.20	Very Active
4	984	98.40	Very Active
Average		83.70	

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Table 3. Presentation of learning activities of control class

Meeting	Score	Percentage (%)	Description
1	351	35.10	Not Active
2	425	42.50	Less Active
3	584	58.40	Enough Active
4	701	70.10	Active
Average		51.50	

Based on the results of student activities during learning process, it indicates that there are differences in the results of student activities in the experimental class and the control class. The percentage value of student activity in the experimental class > control class is 83.70% > 51.50%. So it can be concluded that H_a is accepted and H_o is rejected. So that these results answer the formulation of the problem in this study: There is an effect of applying the TGT (Teams Games Tournament) learning model to the learning activities of class XI IPA Nurul Hakim Modern Islamic Boarding School.

Learning Outcomes

Learning outcomes are a process of changing behavior that is better when compared to before learning (Sudjana, 2010). The data collection of student learning outcomes was obtained from the pretest and posttest scores. Analysis of student learning outcomes data using statistical tests with a probability of 0.05 such as the data in **Table 4**.

Table 4. Descriptive statistics of learning outcomes

Class	Experiment	Control
Mean	82	78
Standard deviation	6.09	5.62
Variance	37.08	31.56
$n_1 + n_{2-2}$	58	58
Correlation coefficient	-0.14	
$T_{arithmetic}$	3.06	
T_{table}	2.002	

Based on the table above, it is known that when $T_{table} > T_{count}$ then H_o accepted and H_a is rejected, then there is no influence of the TGT (Teams Games Tournament) learning model on the learning outcomes of class XI IPA Nurul Hakim Modern Islamic Boarding School. When $T_{table} < T_{count}$, then H_o rejected and H_a is accepted, then there is an effect of the TGT (Teams Games Tournament) learning model on the learning outcomes of students in class XI IPA Nurul Hakim Modern Islamic Boarding School. The result obtained that the value of $T_{arithmetic} = 3.06$ and $T_{table} = 2.002$. Thus it is known that $T_{arithmetic}$ (3.06) > T_{table} (2.002). So the null hypothesis (H_o) is rejected and the alternative hypothesis (H_a) is accepted, it means that

there is an influence of the TGT (Teams Games Tournament) learning model on the learning outcomes of students in class XI IPA Nurul Hakim Modern Islamic Boarding School.

Normality Test

Data normality test is used to see that the data is normally distributed or not. The principle of the normal distribution test is to compare the distribution of the data obtained (observed) and the distribution of the normal data (expected). In this study, the data normality test used the Kolmogrov Smirnov test, with a probability of 0.05%, with the criteria $L_o < L_{table}$, the data were normally distributed (Sugiyono, 2016). Normality test result of experiment class and control class showed in **Table 5** and **Table 6.**

Table 5. Normality test result of experiment class

Type	Experiment Class		Test
	D_{max}	$D_{critical}$	
Pretest	0.123	0.247	Normal
Posttest	0.132	0.242	Normal

Table 6. Normality test result of control class

Type	Control Class		Test
	D_{max}	$D_{critical}$	
Pretest	0.125	0.242	Normal
Posttest	0.116	0.242	Normal

Homogeneity Test

Data homogeneity test is used to see whether the data has a homogeneous variance or not. In this study, the homogeneity of the data was tested using the F test. With the criteria if $F_{count} < F_{table}$ then H_o is accepted and H_a is rejected means the variance is homogeneous. if $F_{count} < F_{table}$ then H_o is rejected and H_a is accepted or the variance is not homogeneous (Sugiyono, 2016). The homogeneity test of the pretest and posttest has a significant level of 0.05. Homogenity of variable data showed in **Table 7** with a test value of $F_{calculated} = 0.85$ and $F_{table} = 2.40$ and degrees of freedom (dk) 58. Then it is known that $F_{count} < F_{table} = 0.85 < 2.40$. Thus, it can be concluded that the data of the two groups are homogeneous.

Table 7. Homogeneity of variable data

Control Class	31.55	Homogeneous
Experimental Class	37.08	Homogeneous

Hypothesis Testing

Hypothesis testing is used to see whether the hypothesis proposed by the researcher is accepted or rejected. Because the data is normally distributed and has a homogeneous

variance. The hypothesis test is carried out using the t-test formula. By looking at the significance level of 5%. If probability > 0.05 then H_o accepted. On the other hand, if the probability is < 0.05, then H_o rejected. One technique that can be used in hypothesis testing is the t-test (*student-test*) analysis technique using Microsoft Excel 2016 (Arikunto, 2013). Hypothesis testing showed in **Table 8**.

Table 8. Hypothesis testing (t-test)

Class	Experiment	Control
Mean	82	78
Standard deviation	6.09	5.62
Variance	37.08	31.56
$n_1 + n_{2-2}$	58	58
Correlation coefficient	-0.14	
$T_{arithmetic}$	3.06	
T_{table}	2.002	

Based on **Table 8** it can be seen that when $T_{table} > T_{count}$ then H_o accepted and H_a is rejected, then there is no influence of the TGT (Teams Games Tournament) learning model on the learning outcomes of class XI science students at Pondok Modern Nurul Hakim. When $T_{table} < T_{count}$, then H_0 rejected and Ha_{is} accepted, then there is an effect of the *Teams Games Tournament* on the learning outcomes of students in class XI IPA Nurul Hakim Modern Islamic Boarding School. After testing the hypothesis analysis, the value of $T_{arithmetic} = 3.06$ and $T_{table} = 2.002$ is obtained. Thus, it is known that $T_{arithmetic}$ (3.06) > T_{table} (2.002). So the null hypothesis (H_o) is rejected and the alternative hypothesis (H_a) is accepted, it means that there is an influence of the TGT (Teams Games Tournament) learning model on the learning outcomes of students in class XI IPA Nurul Hakim Modern Islamic Boarding School.

Discussion

Learning Activities

The results of the analysis of this study found facts by researchers that the learning process can be understood because the experimental class received treatment in the form of a Teams Games Tournament *(*TGT) learning model. When learning took place students were trained to be kinesthetic, communicate, and think, so that students became more interested to participate in learning activities, besides that, this TGT also uses games/games in learning so that students are more active in understanding human excretion material. In addition, the use of the Teams Games Tournament (TGT) model makes his curiosity increase, due to the existence of games/games during learning. It is also different from the control class, which

does not use the Teams Games Tournament (TGT) model, which makes students less active because students only receive the learning delivered from the teacher.

When using the Teams Games Tournament *(*TGT) learning model in the experimental class, it has an effect on learning activities, especially in student learning activities so as to improve students' cognitive learning outcomes compared to the control class without using the Teams Games Tournament (TGT) learning model. The TGT type of cooperative learning model allows students to learn more relaxed while fostering responsibility, cooperation, healthy competition, and learning engagement (Harwinanda, 2019). This research is supported by Sudjana (2010) and Hidayah & Sari (2020), that students can have the highest value from learning outcomes what they achieve with the help of learning media. Learning media can enhance their learning outcomes (Sudjana, 2010). This result is also in accordance with the opinion of Kristiana et al. (2017) that student activities in the learning process have eight activities, including listening, seeing, smelling, feeling, touching, processing ideas, expressing ideas and doing exercises.

Based on data informing student activities, it is known that student learning activities data at the first, second, third, and fourth meetings in the experimental class showed different results where student learning activities at the second, third, and fourth meetings were more active than at the first meeting. In the experimental class at the first meeting it was in the sufficient category (61.90%), because students did not understand and pay attention to the explanations from the teacher during the learning process. While the student learning activities at the second meeting experienced an increase, namely (84.00%) were in the very active category, because many students feel concerned when learning takes place and student activities at the third meeting has increased, namely (90.00%) in the very active category because many students understand the material presented by the teacher during the learning process and the fourth meeting has increased (98%) is included in the very active category because many students are active during the learning process.

It can be seen from the percentage of student learning activities at the first, second, third, and fourth meetings in the control class showing different results where student learning activities at the second, third, and fourth meetings increased more actively than at the first meeting. In the control class at the first meeting it was in the inactive category (35.10%), because students did not understand the material presented by the teacher during the learning process. While student learning activities at the second meeting increased, namely (42.00%) were in the less active category, because many students do not care about the material presented by the teacher during the learning process. Student activity at the third meeting has

increased, namely (58.00%) is in the fairly active category because many students do not pay attention to the explanation of the material presented by the teacher during the learning process. The fourth meeting experienced an increase, namely (70%) in the active category because many students were active and understood the material during the learning process.

The control class without the use of the Teams Games Tournament (TGT) learning model has lower activities than the experimental class. This is due to the absence of attractive learning models and media so that students are less interested in taking part in learning, only a few students are active so that it has an impact on the low learning activities of students. The description above shows that in general learning biology on the material of the human excretory system with the Teams Games Tournament *(*TGT) learning model has a positive and effective influence in increasing the activities of class XI IPA Nurul Hakim Modern Islamic Boarding School. Based on the activities of the control class and experimental class students, the results showed that the experimental class seemed to be more improved than the control class. This shows that the use of the Teams Games Tournament (TGT) learning model can help in increasing student activities than conventional learning.

Therefore, based on the results of student activities during learning, it indicates that there are differences in the results of student activities in the experimental class and the control class. The percentage value of student activity in the experimental class > control class is 83.70% > 51.50%. So, it can be concluded that H_a is accepted and H_o is rejected. So that these results answer the formulation of the problem in this study, there is an effect of applying the Teams Games Tournament (TGT) learning model to the learning activities of class XI IPA Nurul Hakim Modern Islamic Boarding School**.**

Learning Outcomes

Based on the statistical descriptive table, it is known that the highest score obtained by students in the control class is 52 while the experimental class is 60. The lowest score obtained by students in the control class is 28 and the experimental class is 32. The average (mean) overall score in the control class is 40.66 while in the experimental class of 48.26. The standard deviation in the control class is 6.65 while in the experimental class it is 7.04. The variance in the control class is 44.23 while in the experimental class 49.58.

So that it is known that the experimental class using the Teams Games Tournament (TGT) learning model and the control class using the conventional learning model has increased from the pretest value to the posttest value. The increase in learning outcomes with the Teams Games Tournament (TGT) learning model is higher than the conventional learning model.

CONCLUSION

Based on the results of the research and discussion above, it can be concluded that there is an influence of the Teams Games Tournament *(*TGT) learning model on student learning activities on the Excretion System material in Class XI IPA Nurul Hakim Modern Islamic Boarding School with the value of learning activities in the experimental class with an average of 83.70% with criteria of very active. While the value of student learning activities in the control class with an average of 51.50% with sufficient criteria. Then the value of the percentage of student activities in the experimental class > control class is 83.70% > 51.50%. So it can be concluded that H_a accepted and Ho is rejected.

Teams Games Tournament (TGT) learning model on student learning outcomes on the Excretion System material in Class XI IPA Nurul Hakim Modern Islamic Boarding School. With the average value of students in the experimental class of 82 and in the control class of 78. This shows that there is a significant difference in the average value between the experimental class and the control class. And the results of hypothesis testing with $T_{count} > T_{table}$ are 3.06 > 2.002, then H_a was accepted and H_o was rejected.

Based on the results of these studies, Biology teachers, especially in teaching excretory material, should be willing to try using the Teams Games Tournament (TGT) learning model so that students can more easily understand the subject matter by actively participating in teaching and learning activities. For students, it is hoped that they will be able to master learning models so that the overall achievement of student learning outcomes can be even better. And for researchers, it is expected to be a means of experience that can provide input on what will happen if they are directly at school to carry out the right learning process.

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