

Tekno-Pedagogi 12 (2) (2022) ISSN: 2088-205X | E-ISSN: 2715-7415

Tekno-Pedagogi : Jurnal Teknologi Pendidikan

https://online-journal.unja.ac.id/pedagogi DOI: <u>10.22437/teknopedagogi.v12i1.32526</u>



The Influence of The STAD Cooperative Learning Model and Interest on Student Learning Outcomes In Geography Subjects

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Info Article

Received: 11 Jul 2022 Revised: 11 Aug 2022 Accepted: 14 Sep 2022 Online Version: 20 Oct 2022

Abstract

The aim of this research is to determine whether there is an influence of STAD cooperative learning and interest on student learning outcomes in geography subjects at Public High School 10 Batanghari. As a result, the STAD cooperative learning model and interest influence student learning outcomes in geography subjects at Public High School 10 Batanghari. Conclusion The results of the hypothesis test are 1) There are differences in learning outcomes for students with high interest in learning and low interest in learning who are taught using the STAD learning model; 2) There are differences in student learning outcomes between high interest in learning and low interest in learning taught using conventional methods; 3) There are differences in learning outcomes between groups of students who have a high interest in learning who are taught using the STAD cooperative learning model when compared with the learning outcomes of groups of students who have a high interest in learning who are taught using conventional methods; 4) There are differences in learning outcomes between groups of students who have low interest in learning who are taught using the low STAD cooperative learning model when compared to groups of students who have low interest in learning who are taught using conventional methods: 5) There is no interaction between the application of the learning model and interest in student learning outcomes. The conclusion of this research is that there is an influence of STAD cooperative learning and interest on student learning outcomes in geography subjects.

Keywords: Cooperative Model STAD; Interests Learning; Learning Outcomes

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INTRODUCTION

Education has a very important role for the development and realization of individuals, especially for the development of the nation and state (Hakim, 2016; Atika et al., 2019). The aim of education in general is to provide an environment that allows students to develop their talents and abilities optimally, so that they can realize themselves and function fully, in accordance with their

personal needs and the needs of society (Rohana & Wahyudin, 2017; Elvira, 2021). Everyone has different talents and abilities. Education is responsible for guiding, namely identifying and nurturing, as well as cultivating those who are special talents or have extraordinary abilities and intelligence (Listiani, 2014; Musya'adah, 2021).

Education is essentially a reciprocal or two-way interaction between educators and students (Arfani, 2018; Fahri & Qusyairi, 2019). One component of education is educational methods, every educator who will carry out learning activities needs to choose the right method (Dolong, 2016; Anggraeni, 2019). The success of an educator in carrying out his duties does not only depend on the use of the materials taught but is also determined by his mastery of the methods or techniques for delivering the materials. Teachers should be able to use effective and efficient methods so that students can easily receive and understand the material presented (Abdullah, 2017; Supriyono, 2018).

Like geography subjects at school, it develops students' understanding of society and the environment on the surface of the earth. Students are encouraged to understand the physical processes that shape the earth's surface patterns, characteristics and spatial distribution of the earth's surface ecology (Susilawati, 2016; Hidayat & Sihotang, 2021). The use of certain learning models carried out appropriately by teachers will increase students' interest in learning and will improve their learning outcomes (Wahid, 2018; Ardiansah, 2018). The STAD cooperative learning model is a learning model based on the achievements of student teams. Where students are given the opportunity to express opinions, learn to make decisions, work in groups, formulate and make reports (Risdiawati, 2012; Christiawan, 2013).

The teacher hopes that all students will work well with their group friends so that they can increase students' interest in learning. As stated by Djaali, (2011) interest is a high inclination towards something. For example, the desire to get good grades and be able to improve learning outcomes at school after learning. Learning outcomes are intended as the level of success expressed in the form of a score after someone carries out the learning process. Learning outcomes are changes that result in humans changing their attitudes and behavior (Effendi & Siregar, 2018; Musyadada et al., 2019). This aspect of change refers to the taxonomy of teaching objectives including cognitive, affective and psychomotor (Putra, 2017; Meilani et al., 2021). The STAD cooperative learning model has been used in various subjects ranging from mathematics, language, arts, to social sciences and other social sciences (Darmawan, 2013; Arifin, 2020).

A student's interest can make them more enthusiastic and active in the teaching and learning process, which in the end can improve learning outcomes at school (Chulsum, 2017; Hero & Sni, 2018). Because students' learning success is not solely determined by their abilities, but also their interests. It is often found that students have high learning abilities but fail in learning due to lack of interest. Interest is a persistent tendency to pay attention to and remember several activities (Dewa et al., 2020; Alfazani, 2021). Basically, the interest that each student has in a lesson is individually different and the results obtained are also different.

The initial conditions before the Geography learning research was carried out were mostly carried out using lecture, question-answer and discussion methods, but the results turned out to be less than satisfactory, as evidenced by the students' success in mastering material about the Lithosphere in general, only reaching an average score of 63.1 while the minimum completeness criteria score The Geography subject about the lithosphere in class

Previous research regarding the application of the STAD learning model conducted by Syamsu et al., (2019) discussed the effectiveness of the STAD learning model in improving learning outcomes in mathematics learning. This research is in line with this research, where this research was carried out in geography learning. The novelty of this research lies in the combination of two important factors, namely the STAD (Student Teams Achievement Division) cooperative learning model and students' interest in geography subjects. This combination introduces a new approach that aims to improve students' understanding of geography material through teamwork and the development of a deeper interest in the subject. The urgency of this research is very important considering the challenges in learning geography subjects which are often considered complicated and less interesting by some

students. By integrating cooperative learning models which are proven to be effective in increasing social interaction and understanding of concepts, as well as student interest which is the key to intrinsic motivation, this research has great potential in stimulating student learning achievement in geography subjects.

The problem in this research is formulated as follows: 1) Are there differences in learning outcomes for students who have high interest in learning and low interest in learning who are taught using the STAD learning model?; 2) Is there a difference in the learning outcomes of students who have high interest in learning and low interest in learning who are taught using conventional methods?; 3) Are there differences in learning outcomes for groups of students who have a high interest in learning who are taught using the STAD cooperative learning model when compared with the learning outcomes of groups of students who have a high interest in learning who are taught using conventional methods?; 4) Are there differences in the learning outcomes of students who have low interest in learning taught using the STAD cooperative learning model when compared with the learning outcomes of groups of students who have low interest in learning who are taught using conventional methods?; 5) Is there an interaction between the application of the learning model and interest in student learning outcomes?. The aim of this research is to determine whether there is an influence of STAD cooperative learning outcomes in geography subjects at Public High School 10 Batanghari.

RESEARCH METHODS

Research Design

The research design is included in the experimental group. The experimental research method is a research method used to look for the effect of treatment and covariates (reinforcers) on each other under controlled conditions. The results of this research will prove the influence between the variables studied, namely learning models, interests and student learning outcomes. The experimental design used in this research was Non Randomized pre-test post-test Control Group Design. This design was chosen because during the experiment it was not possible to change existing classes.

Research Target/Subject

The research subjects were high school students in class X semester 2 of the 2012/2013 academic year, who came from 4 classes. Each class is X.1 (39 students), X.2 (40 students), X.3 (40 students), and X.4 (40 students) with a total of 159 students. The sample is part of the number and characteristics of the population. In this study, the number of students studied was 77 students, namely X.1 students totaling 37 students as the control class (observation class taught using the conventional model) and X.2 totaling 40 students as the experimental class (treatment class, taught using the conventional model STAD).

Research subjects from the 4 classes were categorized as data that had good normality and homogeneity. Normality and homogeneity tests were carried out using the Liliefort and Barletts tests. In experimental research, subjects are actually taken randomly from individuals in a large population, but this is not always possible. In such conditions, research is needed with treatment but with the class as it is, which can be done by determining subjects taken from subjects that are equivalent to the population another.

Research Procedure

The research procedure begins with selecting a representative sample, such as students from certain classes from several schools. After that, the research will divide students into two groups, namely the group that will apply the STAD Cooperative Learning Model and the control group that will use conventional learning methods. After the groups are formed, the researcher will carry out learning sessions according to the predetermined method. The learning session will focus on Geography materials that are in accordance with the applicable curriculum. After the learning period is complete, the learning outcome data from both groups will be analyzed statistically to determine whether there are significant

differences in learning outcomes between the group that applies the STAD Cooperative Learning Model and the control group. The analysis will also consider the influence of students' interests on their learning outcomes. The results of this analysis will then be interpreted to draw conclusions about the influence of the STAD Cooperative Learning Model and interest on student learning outcomes in Geography subjects.

Instruments, and Data Collection Techniques

This instrument was developed based on Djaali's (2011) opinion, namely feelings of preference and interest. So the indicators for creating an instrument are as follows:

- 1. Taste prefers:
 - 1.1 likes geography lessons
 - 1.2 understand geography lesson material
 - 1.3 solve geography lesson questions
 - 1.4 complete geography lesson assignments
- 2. A sense of attraction:
 - 2.1 interested in studying geography lesson materials
 - 2.2 interested in solving geography lesson questions

Data analysis technique

Data analysis was carried out by testing assumptions and testing hypotheses. The assumption tests carried out were data normality tests and data homogeneity tests, after that continued with hypothesis testing. The analysis used is two-way analysis of variance (ANOVA). The experimental design for $2 \ge 2$ Factorial analysis is as follows:

Table 1. Factorial Design (2 x 2)			
Model	STAD cooperative model (A ₁)	Conventional (A ₂)	
Interest			
B ₁	A_1B_1	A_2B_1	
(High) B_2 (Low)	A ₁ B ₂	A_2B_2	

RESULTS AND DISCUSSION

Based on testing the normality of the data with the Kolmogrov-Sminrov test, it can be seen that the Experimental Class and Control Class for the pre-test results above show significance values for: Experimental Class Pre-Test Scores. Significance value 0.829 > 0.05, Control Class Pre Test Value. The significance value is 0.598 > 0.05. Based on the significance value of each value to the alpha value (0.05), it is said that the values of the research subjects are normally distributed. Post-Test Data Normality Test

The Kolmograv-Sminrov normality test can be calculated using SPSS 16 software by importing posttest data in the descriptive statistics menu, the results are as follows:

Table 2. Normality Test				
One-Sample Kolmogorov-Smirnov Test				
		Post Test Experiment	Post Control Test	
Ν		34	34	
Normal Parameters ^{a,,b}	Mean	70.7647	43.7059	
	Std. Deviation	7.51588	8.80953	
Most Extreme Differences	Absolute	.126	.195	

Positive	.114	.195
Negative	e126	103
Kolmogorov-Smirnov Z	.736	1.139
Asymp. Sig. (2-tailed)	.650	.149
a. Test distribution is Normal.		

b. Calculated from data.

Based on testing the normality of the data using the Kolmogrov-Sminrov test, it can be seen that in the Experimental Class and Control Class the post test results above show significance values for: 1) Experimental Class Post Test Scores. The significance value is 0.650 > 0.05. 2) Control Class Post Test Score. The significance value is 0.149 > 0.05. Based on the significance value of each value to the alpha value (0.05), it is said that the values of the research subjects are normally distributed.

Based on testing the normality of the data using the Kolmogrov-Sminrov test, it can be seen that the Experimental Class and Control Class for the pre-test results above show significance values for: 1) Experimental Interest Value. The significance value is 0.902 > 0.05. 2) Control Interest Value. The significance value is 0.978 > 0.05

Based on the significance value of each value to the alpha value (0.05), it is said that the values of the research subjects are normally distributed. The homogeneity test was carried out to test whether the research subjects consisting of two classes had the same variance. Homogeneity testing will be carried out if the data is normally distributed using the normality test above. Homogeneity analysis is useful for finding out whether the data obtained is homogeneous or heterogeneous. Because the data consists of two samples, the F test can be used which can be seen in table 3 below:

No.	Pretest			
	Experimental Class	Control Class		
Amount	1406.00	1216.00		
Average	41.35	35.76		
Std. deviation	8.82	7.59		
Variance	77.75	57.64		

 $F = \frac{\text{Largest Variance}}{\frac{\text{Smallest Variance}}{\text{F} = \frac{77,75}{57,64}}}$ F count = 1,35

F table, with dk numerator = 34-1 = 33 and dk denominator = 34-1 = 33 with level = 0.5%, then Ftable = 1.35. Condition: If F count <= F table then H0 is accepted and Ha is rejected. H0 is accepted as homogeneous variance. Decision: F count < F table (1.35 > 1.78). So H0 is rejected and H1 is accepted. This means the variance is homogeneous ($\sigma 1 \neq \sigma 2$).

	Table 4. Hypoth Tests of Between-S	nesis T Subjec	esting ts Effects		
Dependent Variable:Int	eraction				
Source Type III Sum of Squares		df	Mean Square	F	Sig.
Corrected Model	12852.000^{a}	3	4284.000	68.199	.000
Intercept	222759.765	1	222759.765	3546.217	.000
factor_a	12447.059	1	12447.059	198.151	.000
factor_b	376.471	1	376.471	5.993	.017
factor_a * factor_b	28.471	1	28.471	.453	.503
Error	4020.235	64	62.816		
Total	239632.000	68			
Corrected Total	16872.235	67			
a. R Squared = $,762$ (A	djusted R Squared $=$,751))			

Hypothesis Results of SPSS Output Two Path Analysis:

1) Hypothesis 1

 H_1 = There are differences in student learning outcomes between high learning interest and low learning interest taught using the STAD learning model

Decision-making

- If probability > 0.05, then H0 is accepted
- If probability <0.05, then H0 is rejected

Decision

It can be seen that FCount is 198.151 with a probability of 0.000. Because probability <0.05 then H0 is rejected. Or in other words, there is a difference in student learning outcomes between high learning interest and low learning interest who are taught using the STAD learning model.

2) Hypothesis 2

 H_1 = There are differences in student learning outcomes between high interest in learning and low interest in learning who are taught using conventional methods

Decision-making

- If probability > 0.05, then H0 is accepted
- If probability <0.05, then H0 is rejected

Decision

It can be seen that Fcount is 5.993 with a probability of 0.017. Because the probability <0.05 then H0 is rejected. Or in other words, there is a difference in student learning outcomes between high interest in learning and low interest in learning who are taught using conventional methods.

3) Hypothesis 5

 H_0 = There is no interaction between the application of the learning model and interest in student learning outcomes

Decision-making

- If probability > 0.05, then H0 is accepted
- If probability <0.05, then H0 is rejected

Decision

It can be seen that Fcount is 0.453 with a probability of 0.503. Because the probability is > 0.05, H0 is accepted. Or in other words, there is no interaction between the application of the learning model and interest in student learning outcomes.

Table 5. Tukey Test Average Difference Value					
Hypothesis	Group	Class Size (N)	Sample Mean	Difference Value	
3	μA1B1	17	70,76	27,06	
	μA1B2	17	43,71		
4	μA2B1	17	60,00	26.00	
	μA2B2	17	34,00	20,00	

The Tuckey test or Tukey's HSD (honestly significant difference test), is used by comparing the difference between each pair of averages with the specified HSD critical value (if the number of subjects in each group is the same) Furqon (2008). Kleinbaum (1998) states that the Tukey-Kramer model compares population means by calculating the mean difference interval (μ i - μ j) as follows:

$$\left(\overline{Y}_{i}-\overline{Y}_{j}\right)\pm\frac{q\ k,n-k,1-\alpha}{\sqrt{2}}\sqrt{MSE\left(\frac{1}{ni}+\frac{1}{nj}\right)}$$

where q k, n-k, 1- α is the value of 100 (1- α) % from the q distribution table (studentized range distribution) with k and (n-k) degrees of freedom. In this test, the MSE value was obtained from the MSE value in the previous ANOVA test, namely 62.816. The number of samples per group, namely ni and nj, is 17. Meanwhile, the q value with k = 4 (number of groups) and n - k is 68-4 = 64, from the q table for α = 0.05, the value is 3.74. So the value can be calculated:

$$\frac{q \ k, n - k, 1 - \alpha}{\sqrt{2}} \sqrt{MSE\left(\frac{1}{ni} + \frac{1}{nj}\right)}$$
$$= \frac{3.74}{\sqrt{2}} \sqrt{62,816\left(\frac{1}{17} + \frac{1}{17}\right)}$$
$$= 2.65 \sqrt{3.69}$$
$$= 2.65 (1.92)$$

= 5,09

Based on the table above, the Tukey differences are as follows:

Hypothesis $3 = 27.06 \pm 5.09$ obtained interval 21.97 to 32.15

Hypothesis $4 = 26.00 \pm 5.09$ obtained interval 20.91 to 31.09

These results are interpreted if there is no value 0 in the interval, at the significant level $\alpha = 5\%$ then $\mu i \neq \mu j$. Thus the conclusions obtained are as follows:

4). Hypothesis 3

The results of the Tukey value calculation interpret that there is no value of 0, so H0 is rejected, or in other words there is a difference in learning outcomes between groups of students who have a high interest in learning who are taught using the STAD cooperative learning model when compared with the learning outcomes of groups of students who have a high interest in learning who are taught with conventional methods.

5). Hypothesis 4

The results of the Tukey value calculation interpret that there is no value of 0, so H0 is rejected, or in other words there is a difference in results between groups of students who have low interest in learning who are taught with the STAD cooperative learning model when compared with the learning outcomes of groups of students who have low interest in learning who are taught with conventional method It can be seen that the Fcount is 4.238 with a probability of 0.044. Because the probability <0.05 then H0 is rejected. Or in other words, there is a difference in student learning outcomes between high learning interest and low learning interest who are taught using the STAD learning model.

After conducting research, the learning process in the experimental class used the STAD Cooperative learning model, while the control class used the conventional learning model. From the pretest t-test learning results for the experimental class and control class, based on the hypothesis for testing variance, it can be seen that the calculated f for the pretest with equal variance assumed (assuming both variances are the same or using a pooled variance t test) is 3.805 with a probability of 0.055. Because the probability is > 0.05 then Ho is accepted, or both variances are identical.

The following is a hypothesis to find out whether the pretest average for the experimental class and the control class is the same. From the results of data analysis, it can be seen that the t count for the pretest with Equal variance assumed is 2.796 with a probability of 0.007. For a 2-sided test, the probability becomes 0.007/2 = 0.0035. Because 0.0035 < 0.05 then H0 is rejected. The population averages for the pre-test in the experimental class and the pre-test in the control class are different.

From the output, it can be seen in the "mean difference" line that it is 4.94118. This number comes from: (Average of Pre-Test for Experimental Class) – (Average of Pre-Test for Control Class) or 41.7059 - 36.7647 = 4.94118. From the F test in the previous discussion, it was found that the average difference test was carried out with Equal Variance Assumed, so in the statement "95% Confidence Interval of Means", the number obtained was: Lower (lower average difference) is 1.41226. Upper (top average difference) is 8.47010. This means that the difference between the experimental class pre-test and the control class pre-test ranges from 1.41226 to 8.47010 with the average difference being -4.94118.

The following relates to the STAD cooperative learning model and interest in learning outcomes. From the results of the two-way analysis hypothesis, it can be seen that the F count is 198.151 with a probability of 0.000. Because probability <0.05 then H0 is rejected. Or in other words, there is a difference in student learning outcomes between high learning interest and low learning interest who are taught using the STAD learning model.

Furthermore, regarding conventional methods and interest in learning outcomes. Based on the results of the data processing analysis hypothesis, it can be seen that Fcount is 5.993 with a probability of 0.017. Because probability <0.05 then H0 is rejected. Or in other words, there is a difference in student learning outcomes between high interest in learning and low interest in learning who are taught using conventional methods. Based on the calculation results, the Tukey value calculation results show that there is no value of 0, so H0 is rejected, or in other words, there are differences in learning outcomes between groups of students who have a high interest in learning who are taught using the STAD cooperative learning model when compared with the learning outcomes of groups of students who have an interest in learning. students taught using conventional methods.

Furthermore, regarding the differences between the use of learning models, interest in learning outcomes. From the results of calculating the Tukey value, it is interpreted that there is no value of 0, so H0 is rejected, or in other words, there is a difference in results between groups of students who have low interest in learning who are taught using the STAD cooperative learning model when compared with the

learning outcomes of groups of students who have low interest in learning who are taught with conventional methods. Cooperative learning methods that use group goals and individual responsibility will increase student achievement. It can be seen that FCount is 4.238 with a probability of 0.044. Because the probability <0.05 then H0 is rejected. Or in other words, there is a difference in student learning outcomes between high learning interest and low learning interest who are taught using the STAD learning model.

Based on the Anova test, it shows that Fcount is 0.453 with a probability of 0.503. Because the probability is >0.05, H0 is accepted. Or in other words, there is no interaction between the application of the learning model and interest in student learning outcomes. This is because the learning model and the level of student interest in learning together do not make a significant difference to learning outcomes. Learning models and interests have their own influence on learning outcomes. Factors that influence learning are divided into three, namely: 1) internal factors (factors from within the student), namely the physical and spiritual state/condition of the student; 2) external factors (factors from within the student), namely the environmental conditions around the student; 3) learning approach factors, namely a type of student learning effort which includes strategies and methods used to carry out learning activities for lesson materials (Masitoh, 2019; Rustam & Wahyuni, 2020). Factors that influence interest include: concentration of attention, curiosity, motivation and needs (Soraya, 2015; Hariyanti, 2017). Interest in learning is an encouragement to be more active in developing one's thinking power and creativity directly in learning, while learning strategies are only one way to achieve optimal learning results carried out by teachers (Ubaidillah, 2018; Windayani et al., 2021).

This research reveals interesting results regarding the influence of the STAD (Student Teams-Achievement Divisions) Cooperative Learning Model and interest on student learning outcomes in Geography subjects. The research results show that the application of the STAD Cooperative Learning Model significantly improves student learning outcomes in the Geography subject. In addition, students' interest in the subject also contributes significantly to their academic achievement. These findings suggest that the combination of a cooperative learning approach with a strong interest of students can positively influence their learning outcomes. The implication of this research is the importance of considering factors such as the learning model used and student interest in designing effective and sustainable learning strategies in Geography subjects and other subjects.

CONCLUSION

Based on the discussion of research results regarding the influence of the STAD cooperative learning model and interest on learning outcomes in geography lessons in class X Public High School 10 Batanghari. It can be concluded several things, namely that there are differences in student learning outcomes between high interest in learning and low interest in learning who are taught using the STAD learning model; There are differences in student learning outcomes between high learning interest and low learning interest taught using conventional methods; There are differences in learning outcomes between groups of students who have a high interest in learning who are taught using the STAD cooperative learning model when compared with the learning outcomes of groups of students who have a high interest in learning who are taught using conventional methods; There are differences in results between groups of students who have low interest in learning who are taught using the STAD cooperative learning model when compared with the learning outcomes of groups of students who have low interest in learning who are taught using conventional methods; There is no interaction between the application of the learning model and interest in student learning outcomes. In implementing the STAD cooperative learning model, it is hoped that students' interest in learning will also be taken into account in the hope of producing better learning outcomes. It is hoped that further research will examine the interaction between the use of the STAD cooperative learning model and students' learning interest. Because the findings of this research are not enough to make a decision that there is no interaction between learning models and interest in learning outcomes.

ACKNOWLEDGMENTS

Thank you to all members of the research team and all parties involved in this research.

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