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COMPARISON OF LEARNING COOPERATIVE TYPE NHT (NUMBERED HEADS TOGETHER) WITH CONVENTIONAL LEARNING AGAINST THE RESULTS OF THE STUDY IN THE REVIEW OF THE INTEREST STUDENTS OF CLASS X

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ABSTRACT

This research aims to know (1) what is the difference between the influence of the application of the learning model NHT (Numbered Heads Together) with the conventional model against the results of student learning; (2) whether there is influence of interest in student learning outcomes; (3) whether there is an interaction between the model of learning with student learning interest against the results of student learning. The selected sample was 72 students of class X 2017/2018 school year. This research uses descriptive types of quantitative research. Data collection is done by the spread of the question form and documentation. Data analysis variance Analysis using two directions with the same cells. The research results obtained explains that (1) the learning approach with NHT and conventional produce learning material on the same virtual classroom (2) learning Interest of students who follow learning learning model with more NHT high compared to the interest of students who follow the conventional learning content virtual classroom discussion (3) there is no significant interaction between the approach of learning and learning interest of students towards the learning results in the subject class Maya. The students, who follow the learning approach to learning that results had NHT equals celebrates student learning model with conventional lessons. High interest has more students for lessons on the virtual classroom learning model with NHT.

Keywords: learning, outcome orientation of interest study, digital simulation, virtual class, numbered heads together, conventional

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1. INTRODUCTION

In an effort to create an optimal and conducive education process, it is necessary to pay attention to the components that play an important role in it, one of which is the teacher. The learning process that aims to help the process of changing student attitudes requires a professional teacher who is required to be able to display his skills as a teacher in front of the class. The components that must be mastered are using a variety of learning models that can vary the interest of learning. The teacher is not only enough to give a lecture in front of the class. This does not mean that the lecture method is not good, but at one time, students will become bored if only the teacher himself speaks, while they sit quietly listening.

The conditions described above also occur in vocational high-school at Sawit class X TKJ 1 and X TKJ 2, the results of observations note that there are several obstacles in the learning process in class. The fact is that these constraints are that students find it difficult to collaborate effectively in learning groups that have been determined by the teacher. Students instead use the learning group well to improve their knowledge and learning abilities but instead spend learning time joking, playing and so on. This can be seen from the list of secondary data values, indicating that more than 50% of students in class X TKJ 1 and X TKJ 2 get the results below the Minimum Graduation Criteria (KKM) standard on digital simulation subjects (: secondary data list UTS grade X TKJ, th.2016/2017.)

One alternative to overcome the problem of learning in the classroom is the application of a learning model that activates students and who is able to develop students' social sensitivity, especially the ability of students to collaborate when they have to do assignments from the teacher in groups so as to improve student learning outcomes. The learning model in question is an NHT (Numbered Heads Together) cooperative learning model. In connection with the above, it is necessary to seek a form of learning that is not only conventional, but also has the ability to be of interest to students. Using NHT (Numbered Heads Together) type cooperative learning becomes increasingly important to develop mutual cooperation, have a sense of responsibility and are able to compete healthily between individuals and groups. Such traits and attitudes will form successful individuals in the face of higher-education challenges that are group-oriented.

Recognizing the important role of learning, it is necessary to conduct research using the NHT (Numbered Heads Together) cooperative learning model compared to conventional learning models. Through this study, it is expected that the application of the NHT (Numbered Heads Together) cooperative learning strategy can have a positive influence on the learning outcomes of class X students.

Research Questions

The following question was raised to guide the study:

1. Are there differences in the effect of applying NHT (Numbered Heads Together) learning models and conventional models on student learning outcomes?
2. Is there an influence of interest in student learning outcomes?
3. Is there an interaction between the learning model and students' learning interest in student learning outcomes?

Hypothesis

Based on the thinking framework described above, three hypotheses can be formulated:

1. There is a difference in the effect of applying the NHT (Numbered Heads Together) type cooperative learning model to conventional learning models on student learning outcomes.
2. There is an influence between interest in student learning outcomes.
3. There is an interaction between learning models with students' learning interest in student learning outcomes.

2. RESEARCH METHOD

The method used is experiment research. The experimental method used by researchers is quasi. Experiments were carried out on class X students taken by two classes, then given a pretest to find out whether there were differences between the control class and the experimental class. The first class as the control class or treatment class that will be treated with the previous method is conventional learning, the second class as the experimental class which is treated with NHT (Numbered Heads Together) cooperative learning. The research was conducted at State Vocational Highschool 1 Sawit, Solo – Yogya Highway, Km. 15, Bendosari Sawit, Boyolali Regency. The study was carried out in the odd semester of class X of the academic year 2017/2018. The population in this study were students of State Vocational High School 1 Sawit Boyolali which consists of 2 classes totalling 72 students consisting of class X TKJ 1 with a total of 36 students and class X TKJ 2 with a total of 36 students. The sample of this study includes the population of the research subject. In the present study used a saturated sampling technique. Data collection techniques used in the form of documentation, test, and questionnaire. Data analysis techniques in this study consisted of: (1) Instrument Validity and Reliability Test, (2) test prerequisites: (a) test of normality (b) homogeneity test and (3) balance test to find out whether the research sample used is from a balanced class or not, it needs to be tested by the two-party formula (4) testing of hypotheses using two-way variance analysis with unequal cells was used, if the anova H0 is rejected, then a double comparison test with the Scheffe method is carried out.

3. RESULT AND ANALYSIS

3.1. RESULT

Test prerequisites result

a. Balance Test

Table 1. Test Statistics Value and Balance Criticism Value

Sample	n	Average	n-1	Si2	S2 combined	t	ta/2;36
Experiment class	36	51.76	35	291.74	16.203	0.436	2.028
Control class	36	50.09	35	233.32			

The test statistic value of the experimental group and the control group is t = 0.436, while ta / 2; 36 for the significance level of 0.025 is ta / 2; 36 = 2.028. Because t = 0.436> ta / 2; 36 = 2.028, then Ho is not rejected. This means that the two groups come from balanced populations.

b. Normality Test

Normality test of each sample using the Liliefors method.

Table 2. Test Statistics Value and Criticism Normality Test Value

Source	L	$L_{\alpha;n}$	Test Decision	Conclusion
1. Control	0.1423	0.2368	H_0 tidak ditolak	Normal
2. Experiment	0.1171	0.2215	H_0 tidak ditolak	Normal

L = Maximum {| F (zi) - S (zi) |} value in the exploited group, the control group, does not exceed the value of L table, so H0 is not rejected. This means that each sample comes from a population that is normally distributed.

c. Homogeneity Test

Homogeneity test using the Bartlett method.

Table 3. Test Statistics Value and Criticism Homogenity Value

Source	K	χ^2	$\chi^2_{a.k-1}$	Test Decision	Conclusion
Experiment and Control Group	3	0.437	5.991	H_0 tidak Ditolak	Homogen
Learning Interest Group	3	3.609	5.991	H_0 tidak Ditolak	Homogen

The test statistic value of the experimental and control groups is $\chi 2 = 0.437$, while $\chi 2$ for the 0.05 level of significance is 0.05, 2 = 5.991. Because $\chi 2 = 0.437 < \chi 2$ 0.05;2 = 5.991 then Ho is not rejected. This means that the group is homogeneous. The test statistic value of the group of students with high learning interest and low learning interest is $\chi 2$ 3.609, while $\chi 2$ for the 0.05 level of significance is $\chi^2_{0.05;2} = 5.991$. Karena $\chi^2 = 3.609 < \chi^2_{0.05;2} = 5.991$, then Ho is not rejected. This means that the group is homogeneous.

Hypothesis Test Results

Table 4. Summary of Variant Analysis of Two Roads with Unequal Cells

Sumber	JK	dK	RK	F_{hit}	F_α	Test Decision
Learning approaches	0.216	1	0.216	0.003	3.988	H_{OA} not rejected
Interest to learn	107188.2	2	53594.08	819.2	3.138	H_{OB} rejected
Interaction	100.1	2	50.07	0.765	3.138	H_{OAB} not rejected
Error	4318.063	66	65.43			
Total	111606.58	71				

a. In the main effect line (A). H0A is not rejected.
This means that Digital Simulation learning using NHT (Numbered Heads Together) learning methods produces the same results (no influence) with conventional approaches on the subject of the virtual class.

b. There is the main effect of column (B), H0B is rejected.
This means that there is an influence of high learning interest and low interest in students' learning on Digital Simulation learning outcomes on the subject of the virtual class.

c. In the main effect of interaction (AB), HOAB is not rejected.
This means that there is no interaction between the learning model and students' learning interest in the results of Digital Simulation learning on the subject of virtual classes.

While the results of calculating the mean and the marginal averages are as follows

Table 5. Average and Marginal Average

Learning Model	Interest to Learn		Marginal Average
	High Interest	Low Interest	
Conventional	62.46	36.27	49.4
NHT	64.29	34.22	49.3
Marginal Average	63.37	35.25	

3.2. ANALYSIS

Hypotheses 1 : There is a difference in the effect of applying the NHT (Numbered Heads Together) type cooperative learning model to conventional learning models on student learning outcomes

The results of the calculation of two-way variance analysis with unequal cells obtained Fa = 0.0033 <3.988 = Fb.05; 2; 66 so that the Fa is not a member of the criticized area. As a result, H0A is not rejected, which means that student learning outcomes with NHT learning models and students with conventional learning models get the same learning outcomes.

H0A did not reject it, giving an understanding that students who use NHT learning models have the same learning outcomes as students who use conventional learning models. So the acceptance of H0A is contrary to the first research hypothesis which states that groups of students with NHT learning models will have better learning outcomes than students with conventional learning models.

The incompatibility with hipótesis research may be because students with conventional learning models already have to learn support factors beyond learning in school, for example as students learn by looking for other material that is broader in understanding from various sources. While students who were given lessons with the NHT learning model tended only to receive subject matter that was only given by the teacher in the classroom and students were too cool with the learning model that was carried out with the NHT model because students thought NHT learning was game-based learning and made students less focused on material is given.

Hypotheses 2: There is an influence between interest in student learning outcomes.

The results of the calculation of the two-way variance analysis with unequal cells obtained Fb = 819.17> 3.138 = Fb.05; 1; 66 so that Fb is a member of the criticism area. As a result, HOB is rejected, this means that there are influences on learning outcomes with high learning interest and low learning interest. The results of the analysis obtained the average learning interest of students who followed learning using the NHT learning model had a high interest of 64.29 and only had a low interest of 34.22. This shows that the learning interest of students who follow learning with NHT learning model is higher than the learning interest of students who take conventional learning. Thus it can be concluded that the above is in accordance with the second research hypothesis which states that there is an influence of learning between interest in learning outcomes.

Hypotheses 3: There is an interaction between learning models with students' learning interest in student learning outcomes

The result of the calculation of the two-way variance analysis with unequal cells was obtained Fab = 0,01124 <3,138 = Fab.05; 2; 66 so that Fab was not a member of the criticism area. As a result, H0AB is not rejected, so there is no need for further testing of Anava. By not rejecting H0AB means there is no interaction between the learning model and students' learning interest in student learning outcomes on virtual classroom material.

The first hypothesis test states that students' learning outcomes that follow learning with Numbered Heads Together learning models with students who follow conventional learning have the same results. The results of the second hypothesis test state that students with high learning interest and students with low learning interest are playing different learning outcomes.

Because there is no interaction between learning models and student learning interests, it means that for each learning interest, whether high learning interest or low learning interest in the use of Numbered Heads Together cooperative learning models and conventional learning models produces the same good learning outcomes. From the explanation, it can be concluded that both Numbered Heads Together (NHT) and conventional learning methods are methods that build precisely to think, reflect and organize ideas and increase students' interest in the lessons given by the teacher. In addition, it can also be possible because of the influence of other independent variables not included in this study, for example, initial ability, creativity, motivation, learning style or student discipline. This is not in accordance with the research hypothesis that there is an interaction between learning models with students' learning interest in learning outcomes

4. CONCLUSION

(1) There were no differences in learning outcomes between students who followed the NHT (Numbered Heads Together) learning model and students who took conventional learning. The results of learning with NHT and Conventional models produce the same learning outcomes. Because students are only more interested in the way the teacher provides the NHT learning model but students are not even focused on the material provided so that the learning outcomes of students with NHT and Conventional learning models are the same. (2) High learning interest and low interest in learning provide differences in learning outcomes. Students with high learning interest have better learning outcomes. (3) There is no significant interaction between learning models and students' learning interest in learning outcomes. Students who take part in learning with NHT and conventional learning models have the same good learning outcomes for students who have high learning interest and low learning interest.

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