The Effectiveness of Cooperative Learning Model of NHT Type Assistance in Teaching Materials in Improving Student Learning Outcomes in Social Science Students at State Junior High School 4 Pekanbaru

Hanifah*, Caska, Sri Kartikowati

Faculty of Education, Universitas Riau, Pekanbaru, Indonesia

*Pekanbaruhanifah.1972@gmail.com

Abstract

This study aims to determine the effectiveness of the Numbered Head Together (NHT) type of cooperative learning model assisted with teaching materials in improving student learning outcomes in social studies subjects at State Junior High School (SMPN) 4 Pekanbaru. The sampling technique using cluster random sampling techniques, namely class VII.3 as the experimental class, and VII.4 as the control class. Data were analyzed using randomized control group pretest-posttest design through the results of the T Test (Different Test). Based on the results of the study showed the results of pre-test 73.95 and post-test of 85.19 with a difference of 11.24. In the pre-test control class was 73.84 and the post-test results were 79.78 with a difference of 5.94. From the results of this difference can be seen that there is an increase in learning outcomes, especially in the experimental class where there are differences in completeness of learning outcomes between the control class and the experimental class. This is also supported by students' learning attitudes in the experimental class (VII.3) which are categorized as "good" (68%) in the learning process. Whereas in the control class, students have the category "quite good" (45.94%) in being following the learning process. The level of learning effectiveness is 5.30. Overall it can be concluded that the NHT learning model is assisted with effective teaching materials significantly in improving student learning outcomes.

Keywords: Effectiveness of NHT Learning Model Assisted by Teaching Material and Learning Outcomes.

Introduction

Learning outcomes are reviewed in terms of the measurement process, it can be said as a person's ability expressed by numbers. Thus, student learning outcomes can be obtained by the teacher first giving a set of tests to students to answer them. The results of student learning tests will provide an overview of information about the ability and mastery of student competencies in a subject matter which is then converted in the form of numbers.

Based on the results of preliminary observations at SMPNegeri 4 Pekanbaru, data obtained from the daily repeat scores of social studies subjects are still not optimal. because there are still many students who score below the Minimum Mastery Criteria 81 (KKM) 81, with an average grade of 77, with a percentage of completeness of approximately 50% of the total number of students who averaged 37 students per class of 5 class VII who became the study population. For this reason, an innovative teaching method is needed that can stimulate students 'interest to participate in learning, so as to increase students' understanding of teaching materials and the achievement of expected competencies. One way is to apply the NHT method assisted with teaching materials.

The Numbered Head Together (NHT) learning model is included in the cooperative learning group. Cooperative learning is a form of learning that is

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based on constructivist ideology. Cooperative learning is a learning strategy with a number of students as members of small groups with different levels of ability. In completing group assignments, each group member must work together and help one another to understand the subject matter (Isjoni, 2012).

Numbered Heads Together is a learning model by means of each student being numbered and made into a group, then randomly the teacher calls the number of students. In applying the NHT model the teacher has several phases such as; students are divided into groups, each student in a group is numbered, the teacher assigns an assignment / question and each group works on it, the group discusses to find the answer that is considered the most correct and ensures all group members know the answer, the teacher calls one number, and finally the student with the number called presents the answers to the results of their group discussion and other groups respond. Where to further maximize the results of the learning process teachers can use teaching materials as a tool or complement the teaching methods used. (Hamdani, 2011; Huda, 2011)

According to the Directorate of High School Development (2008), the understanding of teaching materials is any form of material used to assist teachers in carrying out teaching and learning activities. Based on the technology used, the Directorate of High School Development (2008) groups teaching materials into four categories, namely printed teaching materials including handouts, books, modules, student activity sheets (LKS), brochures, leaflets, wallcharts, photos / drawings, and models / models. Hearing materials (audio) include cassettes, radios, vinyl records, and audio compact disks. Learning visual material (audio visual) such as compact disk video and film. Interactive multimedia teaching material (interactive teaching material) such as CAI (Computer Assisted Instruction), interactive learning multimedia compact disk (CD) and web-based teaching material (web-based learning material). By using the help of teaching materials, the learning process will be more effective.

The effectiveness of the Numbered Head Together (NHT) learning model is closely related to the comparison between the level of achievement of the objectives and the plans that have been prepared previously, or the comparison of real results with planned results. The effectiveness of teaching preparation can be seen based on system theory, so the effectiveness criteria must reflect the entire input-process-output cycle, not only output or learning outcomes, and must reflect the reciprocal relationship between teaching preparation and the surrounding environment. (Mulyasa, 2009)

Based on the description of existing theories, the purpose of this study is to determine whether there is an increase in the average value before and after treatment, the presence or absence of differences in the treatment of learning experiments with NHT methods assisted with teaching materials and to find out how much effectiveness the Type Numbered cooperative learning model Head Together (NHT) assisted with teaching materials in improving student learning outcomes in social studies subjects at SMPN 4 Pekanbaru.

From the results of several previous studies it is known that the application of the Learning Model Headed Together (NHT) can improve concept understanding. Using the Numbered Head Together (NHT) learning model can achieve the specified effectiveness qualifications and the ability to understand

concepts using the Numbered Head Together (NHT) learning model better than expository learning methods. (Titik. S., 2009; Rahma, W., et al, 2014).

Effective Numbered Head Together (NHT) Experimentation learning model in improving student learning achievement. Cooperative learning model Type Numbered Head Together (NHT) is more effective in learning to students. (Abundol.A., N., 2007; Yekti, P.K., et al., 2014)

Based on the theory and the results of existing research journals, it can be made a hypothesis that answers the objectives of this study. There is a significant increase between the average value of students' social studies learning outcomes with the pre-test average learning outcomes, there are differences in the improvement of student learning outcomes who use the cooperative learning model Type Numbered Head Together (NHT) assisted with teaching materials in students of SMP 4 Pekanbaru, the cooperative learning model Type Numbered Head Together (NHT) teaching material assistance is more effective than learning using the lecture method in improving student learning outcomes in subjects Social Sciences at SMPN 4 Pekanbaru.

Methodology

This research is a descriptive quantitative research with experiments. Conducted at SMP Negeri 4 Pekanbaru from January to June 2018. The sampling technique was using cluster random sampling technique, so that class VII.3 was obtained as an experimental class, and VII.4 as a control class. Data collection uses cognitive assessment instruments (pretest-posttest) and learning attitudes (students' self-evaluation questionnaire). Where the data obtained were analyzed using randomized control group pretest-posttest design analysis through the results of the T Test (Difference Test).

Results and Discussion

After doing the validity and reliability test where it is stated that both the cognitive test comprehension test questions (pretest-posttest) and learning attitudes (students' self-evaluation questionnaire) are equally valid and highly reliable. Then proceed with the prerequisite test statistical analysis of different test (T), namely the test of morality and homogeneity which both indicate that the research data is normally distributed and homogeneous, which means the research data can be used to continue the research.

The following are presented learning outcomes for the assessment of concept / cognitive understanding before (pretest) and after treatment (posttest) of the experimental class and control class students;

Learning Results Before (Pretest) and After Treatment (Post test) Experimental and Control Class Students

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Variant	Exsp Pre	Exsp Post	Contrl Pre	Contrl Post
Average Maxs	73.95	85.19	73.84	79.18
N. Maxsimal	84.00	96.00	88.00	92.00
N. Minimal	56.00	68.00	56.00	60.00
Σcomplete	11	31	12	27
% complete	29.72%	83.78%	32.4%	73%
Stand. Dev	7.20844	6.97592	6.09870	6.46777

Based on the findings of the learning outcomes after the pretest and posttest in the experimental class and the control class such as Table 1, it is known that the mean scores of the experimental and control class pretest have almost the same, namely 73.95 and 73.84, but after the treatment and posttest are held there is an increase and the difference in the average value of the experimental class and the control class that is 85.19 and 79.78 with an average difference in value of 5.41. As for the assessment of learning attitudes through the student's self-assessment journal (EDS) can be seen from the following;

Category Assessment of Student Learning Activities Through EDS Against the Learning Process Using the Lecture Method in Experimental and Control Classes.

In accordance with the findings that the researchers got through research in the category of learning attitude assessment through self-evaluation, as seen in table 2, that the learning attitudes of students in the experimental class using NHT learning methods assisted with good teaching materials compared to the Control class which was only categorized sufficiently well. This can be caused by students who are bored with conventional learning methods or lectures used by the teacher in the control class.

Discussion

Improvement of Learning Outcomes Before Pretest and Posttest
With a tailed Sig.2 value of 0.00 <0.05, Ho is declared rejected, which means that there is a significant increase between student grades before and after the learning process. On the average results (mean) the pre-test value of 73.95 and the average post-test value of 85.19. So it can be concluded an increase in experimental class learning outcomes from pre-test to post-test. Whereas the Control class also experienced an increase, with a pre-test score of 73.84 and an average post-test score of 79.78. Where the increase is much smaller compared to the experimental class.
The results of this study are in accordance with previous research studies where it is said that the application of the NHT learning model can improve student learning outcomes. It was also said that learning by the NHT method could increase collaboration, activeness, timeliness and student learning outcomes. It was also said that the application of the NHT learning model can improve student motivation and learning outcomes for the better (Delismar, 2012; Fahrisa., Et al., 2013; Yunida, I., N., 2017)

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Differences in PostTest Learning Outcomes

With sig (2-tailed) at equal variances assumed = 0.012 less than the significance level = 0.05, then Ho is declared rejected which means there is a difference. This implies that the average concept learning outcomes of students who are treated with learning by using the cooperative learning model Numbered Heads Together (NHT) assisted with teaching materials is better than that carried out by the learning process without using the cooperative learning model Numbered Heads Together (NHT) model assisted with teaching materials. This can also be seen from the statistical group the mean value (mean) of the experimental class by 85.19, while the mean value (mean) of the control class by 79.78. Then the difference obtained in the average value of student learning outcomes is 5.41.

For the number of students who have thoroughly studied in the experimental class before and after being given NHT treatment assisted with teaching materials have shown an increase of more than 75% classically. While in the Control class the lecture method applied has not been able to increase the number of students who have finished learning or is still below 75%, namely only 73%. So it can be stated that there are significant differences in learning outcomes between NHT classes and Non NHT classes.

The difference in learning outcomes in this study is also supported by several previous studies which state that, learning outcomes in the NHT class are better than non-NHT learning outcomes, while other studies state that the value of students' reasoning results is much better if using the NHT learning method. It also stated that there were significant differences in learning outcomes when using the NHT method. NHT method (Joko, S., et al, 2011; Lailatul, S., et al. 2012)

The effectiveness of the NHT / Randomized Control Group pre-post-test test

To see the effectiveness of the application of NHT learning models assisted by teaching materials (worksheets and pictures) through the Hypothesis Test using the Randomized Control Group Pre-Test, Post-Test design. This design uses pre-test, post-test and control sample or control group.

The Control Group design results are as follows: 3. Randomized Control Group PreTest – PostTest

Group	Rt-rt N. Pre	Provision of Treatment	Rt-rt
Exsp.	73.95	$\longrightarrow$	85.19
Contrl.	73.84	$\longrightarrow$	79.78

From the results of the Randomized Control Group Pre-Test-Post Test analysis as shown in table 3, shows the results of the implementation of the experimental class using cooperative learning model Numbered Heads Together (NHT) assisted with teaching materials 85.19 - 73.95 = 11.24 and the control class who do not use cooperative learning with the Numbered Heads Together (NHT) model with learning teaching material that is 79.78 - 73.84 = 5.94. So that the

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total effectiveness of the provision of learning with cooperative learning model Numbered Heads Together (NHT) assisted with learning teaching material is 5.30 (11.24 - 5.94 = 5.30). Then from the results of the pre-test post test design learning effectiveness can be seen as follows:

Total Learning Effectiveness

Group	PreTest	PostTest	Gap
Exsp.	73.95	85.19	11.24
Contrl.	73.84	79.78	5.94
Effectiveness			**5.30**

Based on the effectiveness of total learning, as listed in table 4, where the experimental class showed an average result before it was carried out (pre-test) of 73.95 and after the cooperative learning model Numbered Heads Together (NHT) assisted with teaching materials, the results of the post -test has increased by 85.19 with a difference of 11.24. In the control class the average pre-test score was 73.84 after the lecture learning the results of the post-test also increased by 79.78 with a difference of 5.94. From the difference results it can be seen that the average increase in learning outcomes of the experimental class is higher than the control class and the level of learning effectiveness by using cooperative learning with the Numbered Heads Together (NHT) model assisted by teaching and learning materials by 5.30.

The results of the study were strengthened by the results of the study which stated that the application of the learning model Numbered Head Together (NHT) could improve concept understanding. The Numbered Head Together (NHT) type of cooperative learning model has also been studied in international research conducted by those who conclude that Numbered Head Together (NHT) cooperative learning is more effective in learning to students. (Abundol A., N., 2007; Titik S., 2009)

Conclusion

Based on the description of theories and previous research journals that support, especially the findings and discussion of research results, it can be concluded that there is an increase in student learning outcomes between the experimental class and the control class. The increase has a very significant difference that the experimental class has an increase in learning outcomes higher than the control class, so that the cooperative learning model Numbered Heads Together (NHT) assisted with teaching materials is more effective than the teaching method assisted teaching method.

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