

The Effectiveness of the Structured Numbered Head Learning Model on the Social Studies Learning Outcomes of Class V

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Abstract

Based to the result, the observation and interview the low quality of education in Indonesia was caused by students' learning outcomes in some subjects were classified as low. This was supported by the data on social studies learning outcomes in the 5th grade students of elementary school of Kartini Cluster, Banjarnegara Regency, that were quite low. One of the reason was the teachers had not applied the appropriate learning model in accordance with educational regulations. The teachers used a teacher-centered learning model. The purpose of this study was to test the effectiveness of the Structured Numbered Heads model to result of social studies learning outcomes of 5th grade students of elementary school of Kartini Cluster, Banjarnegara Regency. This research used quantitative method with experiment design and nonequivalent control group design. The sample technique was cluster random sampling of 97 participants. Data collection used test, observation and documentation. Hypothesis test result showed that $t_{count} > t_{tabel}$ (5,8883 > 2,0003) which mean structured numbered heads model is was more effective to result of social studies learning outcomes of 5th grade students. The experiment class n-gain test result 0,4611 belong to medium criteria while control class n-gain test result 0.481 belong to low criteria. The conclusion of this research is structured numbered heads was effective to be used in social studies learning material of 5th grade students of elementary school of Kartini Cluster, Banjarnegara Regency Data collection used test, observation and documentation. Hypothesis test result showed that $t_{count} > t_{tabel}$ (5,8883 > 2,0003) which mean structured numbered heads model is was more effective to result of social studies learning outcomes of 5th grade students. The experiment class n-gain test result 0,4611 belong to medium criteria while control class n-gain test result 0.481 belong to low criteria. The conclusion of this research is structured numbered heads was effective to be used in social studies learning material of 5th grade students of elementary school of Kartini Cluster, Banjarnegara Regency Data collection used test, observation and documentation. Hypothesis test result showed that $t_{count} > t_{tabel}$ (5,8883 > 2,0003) which mean structured numbered heads model is was more effective to result of social studies learning outcomes of 5th grade students. The experiment class n-gain test result 0,4611 belong to medium criteria while control class n-gain test result 0.481 belong to low criteria. The conclusion of this research is structured numbered heads was effective to be used in social studies learning material of 5th grade students of elementary school of Kartini Cluster, Banjarnegara Regency 0003) which mean structured numbered heads model is was more effective to result of social studies learning outcomes of 5th grade students. The experiment class n-gain test result 0,4611 belong to medium criteria while control class n-gain test result 0.481 belong to low criteria. The conclusion of this research is structured numbered heads was effective to be used in social studies learning material of 5th grade students of elementary school of Kartini Cluster, Banjarnegara Regency 0003) which mean structured numbered heads model is was more effective to result of social studies learning outcomes of 5th grade students. The experiment class n-gain test result 0,4611 belong to medium criteria while control class n-gain test result 0.481 belong to low criteria. The conclusion of this research is structured numbered heads was effective to be used in social studies learning material of 5th grade students of elementary school of Kartini Cluster, Banjarnegara Regency

Keywords: study result; IPS; Effectiveness; Structured Numbered Heads

1. INTRODUCTION

According to Surahman and Mukminan (2017: 2) Social Sciences (IPS) is a subject matter that can be formed due to problems, social facts, and phenomena through an interdisciplinary approach by combining knowledge in social and humanities clumps to create a society that is able to play an active role in solving social problems. Susanto (2016: 145) argues that the main goal in social studies learning is to develop students' potential so that they are sensitive to social problems that occur in the surrounding environment, have a positive mental attitude towards improvements in all imbalances that are

occurring, and are skilled in solving problems found in real life both that happens to oneself and in society. The implementation of social studies learning in elementary schools has been running according to the objectives of social studies, but in its implementation there are still various problems. In line with what Roseramadhana (2017: 52) argues, social studies learning problems start from two factors, namely students and teachers. Weaknesses of teachers in social studies learning are in mastery of material, media and management of learning resources, as well as conventional.

Based on the data from the observation and observation interviews with the fifth grade teacher of SDN Gugus Kartini Banjarnegara, when

the teacher implements the implementation of social studies learning using the lecture method and direct instruction, students tend to be more bored and it is easier to divert their attention from the teacher who explains in front. This is because the communication of learning activities on social studies subject content in class V SD Gugus Kartini is still carried out in one direction with a lot of material coverage and is memorizing in nature, student understanding only occurs when learning takes place so that students easily forget the material that has been delivered. This problem is reinforced by the data on the learning outcomes of the fifth grade students of SD Gugus Kartini for social studies subject matter. The data shows that the average UTS score for the subject matter is low students or as many as (45.80%) have reached the KKM.

Based on the problem of learning social studies content, the researcher wanted to test the effectiveness of the model, namely the Structured Numbered Head model in learning because this learning model can form cooperative learning conditions, structured creatively and fun. So that the use of the Structured Number Head learning model is expected to improve student learning outcomes.

According to Baloche and Brody (2017: 274-275) cooperative learning has its own place as a pedagogical which is respected in various countries in the world because it has the potential to influence student achievement, motivation to learn, relationships with others, and think critically and creatively in solving problems. According to Gull and Shehzad (2015: 247) cooperative learning has advantages over others, teaching methods in terms of their effectiveness for improving cognition, social skills and motivation.

According to Huda (2015: 139) Structured Numbered Head is a development of the numbered head technique learning model, but in this structured numbered head model in addition to each student being numbered, there is a sequential assignment. The Structural Numbered Head Model is a modification of the Numbered Heads Together learning model used by Spancer Kagan.

By Todd Haydon, Lawrence Maheady, and William Hunter (2010), show that the Numbered Head Together learning model, or cooperative learning, is more effective than lecture methods in academic fields such as social and science lessons.

The research that supports this research is research conducted by Maimuna Rizqi Aulia (2018) entitled "The Effectiveness of the Structured Number Head Learning Model with Zig Zag Media on Writing Skills for Class V of SDN Gugus Arjuna Semarang City". The results of the t-test or hypothesis testing showed the t-count value of $1.692 > t$ table 1.666. These results can be

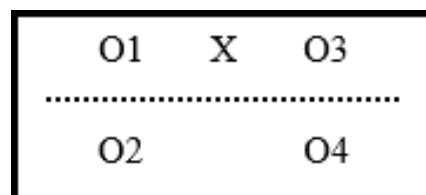
interpreted that the learning outcomes in the experimental class are higher than in the control class. Research conducted by Fika Tivany, Fuad Abdurachman, and Hartono in 2016 entitled "Application of a Structured Number Head Learning Model to Improve Student Chemistry Learning Outcomes". The results obtained in this study indicate that the Structured Number Head learning model can increase the average chemistry learning outcomes.

The formulation of the problems in this study were: (1) Is the Structured Number Head Learning Model more effective than the Direct Instruction learning model in increasing social studies learning outcomes if initial knowledge is taken into account? (2) Is the Structured Numbered Head Learning Model more effective than the Direct Instruction learning model in improving social studies learning outcomes if initial knowledge is not taken into account? (3) What is the level of effectiveness of the structured numbered head learning model on social studies learning outcomes for fifth grade students of SDN Gugus Kartini, Banjarnegara Regency?

Based on the formulation of the problem, the purpose of this study is to test the effectiveness of the Structured Numbered Head Learning Model in improving Social Studies Learning Outcomes if initial knowledge is taken into account, Testing the Effectiveness of the Structured Numbered Head Learning Model in improving Social Studies Learning Outcomes if initial knowledge is not taken into account and Finding the level of effectiveness of the learning model Heads with Structured Numbers on Social Studies Learning Outcomes for Grade V SDN Gugus Kartini, Banjarnegara Regency.

2. RESEARCH METHODS

This research uses quantitative methods. This type of research is experimental research with the research subjects of fifth grade students of SDN Gugus Kartini, Banjarnegara Regency. The design of this research is Quasi Experimental *Design* with the form of Nonequivalent Control Group Design which is described by the following formula (Sugiyono, 2015: 116).



(design drawing Nonequivalent Control Group Design)

The population of this study were all fifth grade students of SDN Gugus Kartini,

Banjarnegara Regency, which consisted of 6 elementary schools with a total of 147 students. The independent variable in this experimental research is the structured numbered head learning model and the dependent variable is the learning outcomes of social studies content. Data collection techniques using tests and documentation. Analyzing the test instruments in the form of validity, reliability, difficulty level of questions and different power of questions before the instrument is used in data collection.

The analysis technique consists of preliminary data analysis and final data analysis. Initial data analysis is normality test and homogeneity test, while final data analysis is normality test, homogeneity test, hypothesis test and n-gain test. The calculation of the hypothesis test uses the t-test with the help of Microsoft Excel.

Hypothesis testing is used to determine the effectiveness of the structured numbered head learning model in the experimental class on social studies learning outcomes. The t-test calculation uses the independent sample t-test with the help of Microsoft Excel. The testing criteria according to Priyatno (2017: 201), namely if $t_{count} > t_{table}$ or a significance value > 0.05 , then H_0 is rejected. While the n-gain test is used to test the average increase between the pretest and posttest scores in the control class and the experimental class.

3. RESEARCH RESULTS AND DISCUSSION

There is a difference in the average posttest score of students in the experimental class and the control class between learning using. Direct Instruction and learning models that use a structured numbered head model. Evidenced by the average posttest results for the experimental class of 77.8 and for the control class of 65.9. Data from student learning outcomes were tested for data analysis prerequisites to determine the formula used to test the hypothesis. The prerequisite analysis test was the normality test and the homogeneity test. The significance value of the normality test results in the experimental class is 0.059 and the control is 0.169. Both classes have a value of $Sig > \alpha = 0.05$, so it can be concluded that H_0 is accepted and H_a is rejected, namely the posttest data analysis for the experimental class and the control class with a normal distribution. While the acquisition of the significance value of the homogeneity test results is 0.048 where the results are $> \alpha = 0$,

The calculation of the normality test is assisted using the SPSS22 Kolmogorov Smirnov test and assisted homogeneity using Microsoft Excel with the Bartlett test criteria which shows that social studies learning outcomes from posttest results in the experimental class and control class

are normally distributed and have homogeneous variances. After the normality test and homogeneity test were carried out, then to find out the average difference between the control class and the experimental class, the hypothesis was tested. Hypothesis testing in this study shows that the structured numbered head learning model is more effective than the direct instruction model for the social studies learning outcomes of fifth grade students at SDN Gugus Kartini, Banjarnegara Regency, which is shown by the results of the Independent Sample T-Test, namely the t_{count} value is 5.8883, and the t_{table} value is 2,0003, so that $t_{count} = 5.8883 > t_{table} = 2,0003$ then H_0 is rejected and H_a is accepted based on the testing criteria according to Priyatno (2017: 201), that is, if $t_{count} > t_{table}$ then H_0 is rejected. The results of the hypothesis test can be seen in the following table:

Table 1. Independent Sample T-Test Test Results

	<i>eksprimen</i>	<i>kontrol</i>
Mean	77,8	65,8594
Variance	59,7989	67,9877
Observations	30	32
Pooled Variance	64,0297	
Hypothesized Mean Difference	0	
Df	60	
t Stat	5,8883	<i>t hitung</i>
P(T<=t) one-tail	0,009434	
t Critical one-tail	1,6706	
P(T<=t) two-tail	0,01886	
t Critical two-tail	2,0003	<i>t tabel</i>

This achievement was strengthened by research conducted by Selvi Meliawati, Muhajir, and Khusnul Fajriah (2018: 90-95) with the title "The Effect of Structured Numbered Heads Learning Model on Learning Outcomes of Class III Students in Natural Science Subjects SDN Palebon 01 Semarang". The results showed that $t_{count} > t_{table}$ was $4.233 > 2.005$, then H_a was accepted and H_0 was rejected, which means that the structured numbered head model was effective in improving learning outcomes.

Research conducted by Muhyani, Dida Dahlia (2015) with the title "The Effect of a Structured Numbered Head Type Cooperative Learning Model on the independence and hard work of students" in this finding was obtained based on the acquisition of student independence scores where the $t_{count} > t_{table}$ ($2.951 > 2.14$), indicating that H_a was accepted. Likewise with the acquisition of the value of hard work where the value of $t_{count} > t_{table}$ ($2.951 > 2.14$), which indicates if H_a is accepted.

The results of research conducted by I Kadek Puji Artha, I Md Putra, and IB Surya Manuaba (2016) entitled "The Effect of a Scientific Approach Based on the NHT Model on Social Studies Learning Outcomes in the Theme of the History of Indonesian Civilization for Class V Students of the Kompyang Sujana Group in 2015/2016". The results obtained in the form of an

increase in learning outcomes, namely where $t_{count} > t_{table}$ ($4.54 > 2.00$), which means that the NHT model is effective and has an effect on increasing learning outcomes. Then, the difference in the increase in social studies learning outcomes can be calculated using the n-gain test. The control class obtained a posttest score of 65.9, and the experimental class obtained an average posttest score of 77.5. The n-gain value of the class the experiment was higher than the n-gain value in the control class. The n-gain value for the control class, namely 0.1977, is included in the low criteria, and the n-gain value for the experimental class is 0.4611 which is included in the moderate criteria. Based on the results of the pretest and posttest, these calculations show that students in the experimental class with the application of the Structured Numbered Head model have a higher learning outcome than students in the control class who use the Direct Instruction model. Data from the overall increase in the pretest and posttest scores of the fifth grade students of SDN Gugus Kartini, Banjarnegara Regency in social studies learning are presented in the following diagram:

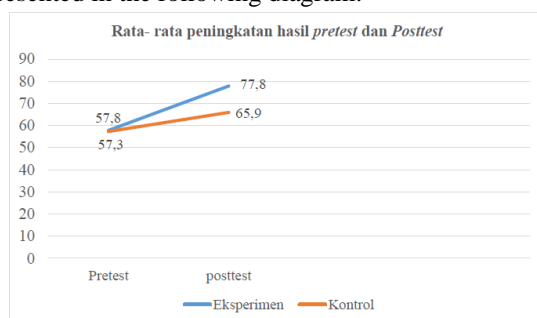


Figure 4.1 Diagram of the Increase in the Average Value of the Pretest and Posttest Students of Class V SDN Gugus Kartini, Banjarnegara Regency in Social Studies Learning.

The results of this study are in line with research conducted by Kaerudin and Abdul Rozak (2019) with the title "The Use of a Cooperative Model Type Head with Structured Numbers in Learning to Read Children's Stories in Elementary School Students 2014/2015". The findings in this study showed that the average value of student learning outcomes increased after the implementation of a structured numbered head model in learning.

Research by Dassucik (2017: 104) entitled "Application of a Structured Number Head Model to Increase Activities and Learning Outcomes of Class IX A Students of SMP Negeri 5 Panji Situbondo". In this study, the results showed that the learning model

Structured numbered heads are effective in increasing student activity and learning outcomes.

Research by Rina Hapsari (2014) entitled "The Effectiveness of Using Structured Numbered Head Techniques in Learning German Reading Skills for Class XI Students of SMA N 1 Tempel

Sleman". In this study, the results of data analysis calculated using the T-test obtained $t_{count} 2.892 > t_{table}$ with a significant level of 0.05, it can be concluded that the structured numbered head model is more effective in learning German reading skills than using the conventional model.

Another research was conducted by Suci Rahmayani (2016) with the title "The Effect of the Application of a Structured Numbered Structured Head Technique Cooperative Learning Model on the Understanding of Mathematical Concepts of Class VIII Students of SMP Negeri 18 Padang". The results obtained in this study indicate that the t_{count} is 3.68

$> t_{table} 1.671$ which means that H_a is accepted. It can be concluded that in this study the structured numbered head model was effective in increasing students' understanding in mathematics.

Based on these results, it can be concluded that the learning outcomes in the experimental class are better than in the control class which indicates that the learning process using a structured numbered head model is effective in improving student learning outcomes.

4. CONCLUSION

The results obtained in this study at SDN Gugus Kartini Banjarnegara obtained an average final score of 77.8 with completeness results of 90% in the experimental class, while the final average of the control class was 65.9 with learning completeness only 40.62. %. Based on the results of these acquisitions, it can be concluded that learning in the experimental class by applying a structured numbered head model results in higher learning outcomes good compared to the control class that applies the direct instruction learning model. The results of calculations using the independent sample test obtained t_{count} of 5.88883 and t_{table} of 2,0003. Because $t_{count} = 5.88883 > t_{table} = 2,0003$, then H_0 is rejected and H_a is accepted, which means that the structured numbered head model is more effective than the direct instruction learning model for social studies learning outcomes of the fifth grade students of the Banjarnegara Kartini Cluster on Events during the Dutch Colonial Period.

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