International Journal of Humanities, Social Sciences and Business (INJOSS) e-ISSN: 2962-6781
Vol. 3 No. 2 2024, page 283-293

APPLICATION OF THE NUMBERED HEAD TOGETHER LEARNING MODEL TO IMPROVE SCIENCE LEARNING OUTCOMES OF PRIMARY SCHOOL STUDENTS IN PADANGSIDIMPUAN CITY

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Abstract

The learning model is a way that can help teachers achieve the target of student learning completeness. Without implementing a learning model, teachers will experience optimal learning outcomes, impacting student learning outcomes. This research aims to improve students' social studies learning outcomes through the Numbered Head Together (NHT) learning model. This type of classroom action research uses the Kurt Lewin model, which consists of planning, action, observation, and reflection. The main subjects in this research were class IV students at SD Negeri 200220 Padangsidimpuan, totaling 26 students consisting of 14 boys and 12 girls. The data collection instruments used test items and observation sheets. Data analysis techniques use qualitative and quantitative descriptions. The research results show that using the NHT model can improve student learning outcomes. As evidenced by the pre-cycle learning results, ten students completed with an average of 65.96, a completion percentage of 38.5%, in the first cycle of meeting 1, 14 students completed with an average of 69.80, a completion percentage of 53.84%, cycle I meeting 2 obtained 15 students who ended with an average of 70.19, a completion percentage of 57.7%, cycle II meeting 1 accepted 19 students who completed with an average of 76.34, percentage of completeness 73.07% and cycle II meeting 2 obtained 22 students completed with an average of 81.15, a completion percentage of 84.6%.

Keywords: IPS learning outcomes, learning models, NHT

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Introduction

Education is an obligation that must be carried out by every human being. Education is one of the country's priorities because education can improve human status and can improve the quality of human resources and turn the young generation into an intelligent generation that can advance the country. Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and the skills needed by themselves, society, nation and state (Rahmat, 2018). So, to form this attitude, students must undergo education. There are subjects, especially in elementary schools (SD/MI), which are related to this, namely Social Sciences (IPS) subjects.

Social Sciences is a subject at elementary school level that discusses a collection of factual events related to social issues. IPS is said to be a number of social science disciplines that are obtained from people's daily lives (Nasution & Lubis, 2018). The government really hopes for the competencies that students will gain when studying, namely getting maximum learning outcomes. Because, said Setyaningsih & Utami (2021), learning outcomes are a benchmark in determining individual success in the subjects they have studied. However, this hope has not yet been achieved as has been observed.

Observations were carried out at SD Negeri 200220 Padangsidimpuan, especially in class IV. It is known that the lack of student attention to learning is due to the learning process being carried out only based on theory, without a learning model or media in the learning process that can stimulate and foster students' curiosity about what will be learned. Teachers have used various methods in the learning process, including the lecture method. However, students' understanding of the subject matter is still lacking, as evidenced by the fact that when the teacher gives assignments, students do not immediately do the assignment but instead ask friends how to do it, so the room is not conducive. During group assignments, not all students are active in discussing and working on their group assignments, and they lack confidence in presenting the results of their discussions. This happens because teachers still rarely use learning models and media that are appropriate to the subjects to be discussed, the impact is that students are less active and enthusiastic in the learning process, which also causes students' low mastery of the subject matter presented by the teacher.

Based on the problems found at SD Negeri 200220 Padangsidimpuan, the solution to this problem is to apply the Numbered Head Together (NHT) learning model. It is hoped that students' absorption capacity will increase so that it will have an impact on improving learning outcomes. The NHT Learning Model is a variant of group discussion first developed by Spencer Kagan (Astuti, 2017). This method developed by Russ Frank is suitable for ensuring individual responsibility in group discussions. The goal of NHT is to provide opportunities for students to share ideas and consider the most appropriate answers. Apart from increasing student

cooperation (Sri Puji Retno et al., 2021), NHT can also be applied to all subjects (Huda, 2017). The NHT learning model is also relatively easy to apply in the classroom, so that educators and students do not experience difficulties in the implementation steps (Fatimah & Syamsudin, 2021).

The NHT learning model is believed to be able to improve social studies learning outcomes for madrasah ibtidaiyah students and also provide learning experiences working together in groups, helping each other, not discriminating between friends, and providing each other with input and ideas for completing assignments given by the teacher so as to foster a sense of togetherness among others. student. As previously researched by Lestari & Ariesta (2020), there was an increase in social skills and student learning outcomes in class IV social studies at SDN Kembangan Utara 01 West Jakarta. However, the research results of Sinambela et al. (2021) found problems in one of the private schools in the Manokwari area, showing that student learning outcomes were not optimal, and the use of NHT was still not optimal to improve student achievement.

On the basis of the research gap, it is necessary to prove the NHT learning model which is expected to be able to improve the learning outcomes of elementary school students. So the aim of this research is to improve students' social studies learning outcomes through the Numbered Head Together (NHT) learning model.

Research Method

The research was conducted at SD Negeri 200220 Padangsidimpuan City, North Sumatra Province. The research subjects were 26 fourth grade students, consisting of 14 boys and 12 girls. This research uses PTK (Classroom Action Research). According to Firdaus et al. (2022) classroom action research is a research method that aims to overcome problems that arise in the learning process in the classroom. Of course, this research was carried out with systematic procedures by teachers to make improvements in their learning process so that learning objectives can be achieved effectively and efficiently. The steps in this research refer to Kurt Lewin's model, namely: planning, action, observation and reflection. This research focuses on social studies subjects regarding types of work.

Data collection uses tests and observation sheets. The questions in the form of 20 multiple choice questions contain material about social sciences which includes material on types of work and observation sheets that have been provided by researchers before making observations using the NHT learning model. The observation sheet that the researcher will distribute to the observer is in the form of an observation sheet for students and teachers.

Analysis of data from research assessments of student worksheets. What will be analyzed is the student's success in improving their ability to answer multiple choice questions. To find out the level of student success after the teaching process was

carried out using the NHT learning model, a test evaluation was carried out. By meeting the minimum learning completeness score that has been set, namely 75.

The analysis that can be carried out to calculate the level of student success and the average student score is by using the following formula:

1. Analysis of cognitive learning outcome test data

   Analysis of cognitive learning outcome test data related to student learning mastery classically uses the following formula:

   a. Individual Completeness

      Individual learning mastery is calculated using descriptive analysis, namely:

$$S = \frac{R}{N} \times 100$$

      Keterangan:

      S = Score (sought/expected value)

      R = The number of questions answered correctly

      N = The number of questions

   b. Class average

      To analyze the level of success or percentage of learning completeness or the level of students' cognitive abilities after teaching and learning activities are carried out in each cycle, namely by providing an evaluation in the form of a test at the end of each meeting. This analysis is calculated using simple statistics, namely by calculating the scores obtained by students and then dividing them by the number of students in that class to obtain an average score using the formula, namely:

$$\bar{x} = \frac{\sum X}{\sum N}$$

      Information:

      $\bar{x}$: average value

      $\sum X$: the sum of all student grades

      $\sum N$: the number of students

   c. Percentage of Learning Completeness

      To determine the percentage of completeness, it can be calculated using a formula:

$$\mathrm{P} = \frac{the\ number\ of\ students\ who\ are\ successful\ in\ learning}{the\ total\ number\ of\ students} \times 100\%$$

2. Data analysis of teacher activity observation sheets

   Teacher activities in the learning process based on the steps of the NHT learning model consist of 4 indicators, with measurements of 1 to 4 each (4 is very good, 3 is good, 2 is quite good, 1 is not good). This means that the maximum score obtained is 16 (4 x 4) and the minimum score is 4 (4 x 1). To calculate the percentage obtained by the teacher during the learning process, namely the score

obtained from observation is divided by the maximum score multiplied by 100%. From the data above it can be processed using a formula:

$$P = \frac{F}{N} \times 100\%$$

Information:
F : The frequency the percentage is being searched for
N : Number of Frequencies or the number of individuals
P : Percentage Number
100% : Fixed Numbers

3. Data analysis of student activity observation sheets

The data analyzed on student activity is the student activity score during learning consisting of 4 indicators, with measurements of 1 to 4 each (4 is very good, 3 is good, 2 is quite good, 1 is not good), and if the activity is carried out by a total of 18 people , then the maximum score is (4 x 4 x 26 = 416), while the minimum score is (1 x 4 x 26 = 104). To calculate the percentage obtained by students during the learning process, namely the score obtained from the observer divided by the minimum score multiplied by 100%.

After the data is collected through observation, the data is processed using a percentage formula, which is as follows:

$$P = \frac{F}{N} \times 100\%$$

Information:
F : The frequency the percentage is being searched for
N : Number of Frequencies or the number of individuals
P : Percentage Number
100% : Fixed Numbers

In determining assessment criteria regarding teacher activities and student learning activities on various work themes, 4 assessment criteria are grouped. The percentage criteria are as follows:

Tabel 1. Kriteria Penilaian

Rentang Skor	Kategori
86 (%) – 100 (%)	Very good
71 (%) – 85 (%)	Good
56 (%) – 70 (%)	Pretty good
41 (%) – 55 (%)	Not good

From the results of the presentation obtained, it can be seen how big the students' abilities are at the learning implementation stage by looking at the assessment aspect.

Results and Discussion

Based on research results starting from pre-cycle data, students obtained an average class score of 65.96 and a completion percentage of 38.5% with a total of 10 students who completed. Then, after taking action in the form of implementing the NHT learning model in cycle I, the average class score at meeting 1 increased to 69.80

and the percentage of completion was 53.84% with the number of students completing as many as 14 people. Then at meeting 2, student learning outcomes also increased, namely the class average score was 70.19 with a completion percentage of 57.7% and the number of students who completed was 15 people.

In cycle II, meetings 1 and 2, the researcher also provided action in the form of the NHT learning model. After reflection and improvement, student learning outcomes also increased, namely at meeting 1 the average class score was 76.34 with a completion percentage of 73.07% and the number of students who completed was 19 people. Then at meeting 2 the average class score reached 81.15 with a completion percentage of 84.6% and the number of students who completed it reached 22 people.

Based on the research results, it also proves that the NHT learning model improves student learning outcomes, seen from the results of the analysis of the scores obtained by students who have reached the KKM score.

Table 1. Recapitulation of Social Sciences Learning Results

Descriptive Statistics							
	N	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
Pre-cycle_Student_Value	26	20	85	1715	65.96	16.249	264.038
Student_Cycle_Grades1	26	30	90	1825	70.19	17.116	292.962
Student_Cycle_Grades2	26	30	100	2110	81.15	16.811	282.615
Valid N (listwise)	26						

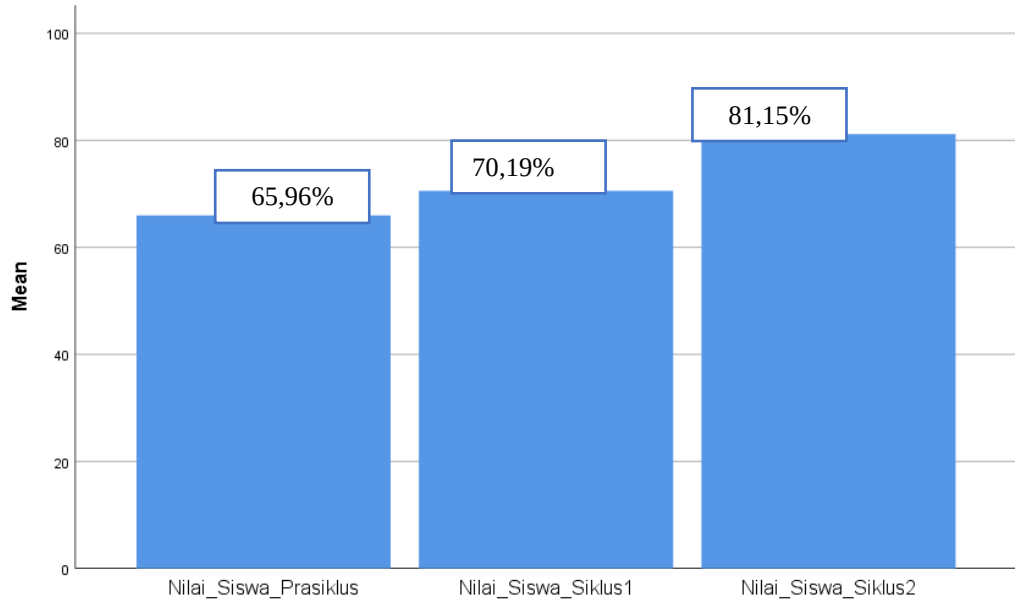

Figure 1. Average Value of Social Studies Learning Outcomes

The NHT learning model can improve student learning outcomes in class IV of SD Negeri 200220 Padangsidimpuan. This is proven by the results of the tests carried out, where at each meeting the students' scores continue to increase. In this research, the increase in student learning outcomes occurred due to the implementation of the NHT learning model which was carried out with actions given by the teacher so that it could attract students' enthusiasm and curiosity in learning. When the learning process takes place, teachers often strengthen students by providing motivation to learn. Teachers are also more sensitive in analyzing students' abilities and guiding students during discussions, where teachers provide direct guidance and assistance to students during discussions. Teachers also provide instructions, warnings, encouragement, and monitor the progress of students' work.

The role of teachers in providing learning motivation to students is in line with research conducted by Bunga et al. (2022), which states that the role of teachers is very

large in improving student learning outcomes. The research results reveal that the teacher's role as a motivator is extrinsic, but providing learning motivation can increase students' intrinsic motivation. The role of teachers as motivators can be seen in the professionalism of teachers at SDI St. Yosef Maumere who has implemented motivation for students to encourage good learning achievement. The effect of providing motivation is extrinsic, but it can foster students' intrinsic motivation and will encourage students to achieve good achievements and learning results.

Likewise, the role of teachers in providing direct guidance and assistance to students is in line with research conducted by Meilasari (2022) which states that the condition of students at SDN Kareo Banjaran has not achieved the expected achievements. This is caused by learning that is still classical in nature. Teachers are still less than optimal in applying leadership styles in learning, resulting in a lack of guidance and direction to students during the learning process. Leadership is an important component that teachers must have where teachers must be able to direct, guide and influence students to think and follow learning as expected in order to achieve good learning outcomes. The results of this research reveal that there is still interaction between teacher leadership in managing the class and student learning outcomes in class V of SD Negeri Kareo Banjaran.

Then the teacher gives instructions, warnings, encouragement, and monitors the progress of students' work. One of the teacher's roles is as a facilitator. This means that teachers have a role to provide services during the learning process. Teachers must be able to understand, design and organize various types of media so that they are able to transfer knowledge to students through media. In this way, teachers must also be able to communicate and interact with students so that teachers are able to provide instructions and monitor student learning progress. The results of this research reveal that the teacher's role as a learner can increase student motivation and learning achievement.

The NHT learning model also helps students be more active in discussing and exchanging ideas and finding answers. This is proven in this research by an increase in student activity which shows that students are increasingly active in the learning process with the NHT learning model, where in cycle I and cycle II the value of student activity continues to increase. Likewise, student learning outcomes continue to improve.

Other evidence is in the research results of Widyawati et al. (2023) shows that the application of the NHT model significantly improves student learning outcomes with the average percentage of student learning outcomes reaching 90% in the third cycle. The research results were also proven by Prayekti & Manggalastawa (2021), that the NHT model had a positive effect on the learning outcomes of class V students in Karanganyar District, Demak Regency on the material of identifying story elements. It can be seen that the significance value (Sig.) of 0.000 is smaller than <0.05 probability.

Rijal et al. (2021) stated that to foster critical thinking, students with low academic abilities should be taught using NHT as proven in research by Mitarisa et al. (2023), the results showed an increase in the critical thinking skills of Bringin Elementary School IV students reaching 0.60 in the medium category. Apart from improving critical thinking, students can also improve their attitude of responsibility as school members as confirmed in the research results of Pramestika et al. (2019), it appears that the NHT learning model can improve attitudes of responsibility and learning achievement on theme 9 The Richness of My Country in Class IV of SDN Susukan, Wanayasa District, Banjarnegara.

The results of other research have also tested the NHT learning model over the past few years and to date it is true that everything shows a positive influence. The research results of Maulidina et al. (2023) showed that there was an influence of the numbered heads together cooperative learning model on students' cooperation and understanding in the fifth grade science subject at UPTD SDN Pernajuh by obtaining an average of 84.34 at the pretest and 95.00 at the posttest. The research results of Apriani et al. (2023) also shows that there is an influence of the NHT learning model on mathematics learning outcomes. This can be seen from the calculated t value obtained, namely t calculated > t table (2.347 > 1.690) and the sig value. 2 tailed < 0.05, namely 0.025 < 0.05. The research results of Rosyanti et al. (2019) proves the influence of the NHT model on citizenship education learning activities in class III students at SDN 01 Noyan. Furthermore, the research results of Sumaryadi et al. (2023) proves that there is an influence of the NHT learning model on the learning achievement of class VIII students at SMPN 1 Mataram for the 2022/2023 academic year. The research results of Zahra & Hartini (2023) also show that NHT has an effect on student interaction in class IV elementary school.

Conclusion

Based on the results of research that has been carried out regarding the application of the NHT learning model to improve students' social studies learning outcomes in the material on types of work in class IV-B of SD Negeri 200220 Padangsidimpuan. The research results proved that the application of the NHT learning model in the social studies subject Types of Work at SD Negeri 200220 Padangsidimpuan can improve student learning outcomes with the average student score reaching 81.15 or 84.6%. Teacher activity during the learning process with the application of the NHT learning model was 62% (Quite Good), and in cycle II it increased by 75% (Good). Student activities carried out during learning activities using the NHT learning model were 62% (fairly good), and in cycle II there was an increase of 81% (good).

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