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Activating Every Voice, Improving Every Outcome: Numbered Heads Together in Fourth-Grade Social Studies Learning

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ABSTRACT

Purpose of the study: This study aimed to analyze the improvement of Social Studies learning outcomes among fourth-grade students through the implementation of the cooperative learning model Numbered Heads Together on the topic of natural resource distribution at MI Pesantren Datok Sulaiman Palopo.

Methodology: This study employed Classroom Action Research using the Hopkins cycle model, consisting of planning, action, observation, and reflection. The study involved 22 fourth-grade students and was conducted in two cycles. Data were collected through learning achievement tests, student and teacher observations, and documentation. Data were analyzed descriptively and statistically using IBM SPSS, including paired-samples t-test and Friedman test.

Main Findings: The results showed an improvement in students' learning outcomes following NHT implementation. The mean score increased from 50.23 in the pre-cycle to 70.00 in Cycle I and 80.00 in Cycle II. Learning mastery increased from 9.09% to 31.82% and 77.27%, respectively. The Friedman test indicated a significant difference across the three measurement stages ($\chi^2(2) = 42.286$, $p < 0.001$).

Novelty/Originality of this study: The novelty lies in integrating NHT with iterative classroom action and statistical analysis to examine learning improvement in Social Studies on natural resource distribution. The study demonstrates that NHT effectiveness is supported by implementation quality, including concrete examples, learning media, motivation, and discussion guidance, providing contextual evidence for improving elementary students' learning outcomes.

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1. INTRODUCTION

Twenty-first-century education is not only oriented toward the mastery of knowledge but also requires students to develop the ability to think, communicate, collaborate, and solve problems effectively. In this context, the learning process needs to provide students with opportunities to actively construct understanding through interaction with teachers and peers [1]-[3]. Learning that remains dominated by one-way delivery of material may limit students' opportunities to develop cognitive and social engagement during the learning

process. Research has shown that collaborative learning can increase student engagement by providing greater opportunities to interact, exchange ideas, and construct shared understanding [4]-[6]. Therefore, improving the quality of learning requires strategies that are oriented not only toward delivering material but also toward organizing learning activities that encourage the active participation of every student.

This issue is particularly relevant to Social Studies learning because Social Studies requires students to understand the relationships between humans, the environment, and various phenomena of life in a contextual manner [7]-[9]. However, the initial conditions of the study indicated that fourth-grade students still experienced difficulties in understanding the distribution of natural resources due to suboptimal learning engagement. The learning process tended to be dominated by teacher explanations and textbook-based language, causing some students to experience boredom and difficulties in developing conceptual understanding [10]-[12]. These conditions resulted in low levels of student engagement and Social Studies learning outcomes, indicating the need for systematic improvements in the learning process[13]-[15]. This finding is consistent with research on social learning showing that cooperative and investigative approaches can produce better conceptual mastery than lecture-based learning [16], [17].

Several international studies have demonstrated that cooperative learning contributes positively to various aspects of learning outcomes. Xu et al. [5] found that structured group learning activities can strengthen academic engagement by improving peer relationships. Williamson and Garbin [18] also showed that participation in cooperative learning is associated with academic benefits, particularly for students with lower initial abilities. Furthermore, Bećirović et al. [19] demonstrated that components of cooperative learning are associated with students' motivation and academic achievement. More comprehensively, Güngör et al. [20] through a second-order meta-analysis, found that cooperative learning has a moderate effect on learning outcomes, higher-order thinking skills, and students' affective behaviors.

In the context of Social Studies learning, cooperative approaches are relevant because the characteristics of the subject require discussion, the exchange of perspectives, and the connection of concepts with social and environmental realities. Previous research has found that cooperative learning in fourth-grade Social Studies has a positive effect on students' academic achievement and learning motivation [21]-[23]. Recent studies have also shown that cooperative learning can improve creative problem-solving skills and learning motivation in Social Studies classrooms when collaborative activities are systematically designed [24]-[26]. In addition, investigation-based group learning has been shown to be more effective than lecture-based methods in improving conceptual mastery and knowledge transfer in Social Studies learning [27], [28]. This evidence indicates that cooperative learning has substantial potential in Social Studies education, although its effectiveness remains influenced by the structure of interaction and the implementation techniques employed [29], [30].

One form of cooperative learning that can address these needs is Numbered Heads Together (NHT), as this model combines group work with individual accountability. Through the stages of numbering, questioning, collective thinking, and answering, each group member is encouraged to understand the discussion results collectively while also preparing individually. This structure distinguishes Numbered Heads Together from ordinary group work because every student has an equal possibility of representing the group in presenting an answer. Research on Numbered Heads Together has shown that this learning structure can improve the activity and learning outcomes of elementary school students through more equitable engagement in the discussion process [31]-[33]. Thus, Numbered Heads Together has the potential to serve as a pedagogical alternative for addressing Social Studies learning that remains teacher-centered and provides insufficient opportunities for all students to participate.

Although evidence regarding the benefits of cooperative learning is increasingly strong, several research gaps need to be addressed. First, many international studies continue to examine cooperative learning as a general approach or employ other techniques, such as Jigsaw and Group Investigation; therefore, evidence concerning the implementation mechanisms of the Numbered Heads Together technique in elementary Social Studies learning remains limited. Second, previous studies have predominantly employed experimental designs to compare the effectiveness of different treatments, whereas evidence regarding the gradual improvement of learning through action and reflection cycles remains relatively limited. Third, recent studies indicate that the success of cooperative learning is influenced by implementation quality, subject context, activity structure, and student characteristics [20], [34], [35]. Therefore, the research gap in this study lies in the need to understand how the Numbered Heads Together structure can be implemented and improved iteratively within a specific elementary Social Studies learning context..

Based on these gaps, the novelty of this study does not solely lie in the use of the Numbered Heads Together model or the specific research location, but rather in the contextual integration of three research aspects. First, the study applies an individual accountability structure within Numbered Heads Together to address limitations in student participation in Social Studies learning. Second, the study employs a Classroom Action Research design to observe the continuous improvement of learning through the stages of planning, action, observation, and reflection. Third, the study specifically examines the implementation of Social Studies

learning on the topic of natural resource distribution, which requires both conceptual understanding and the ability to connect environmental phenomena with social life. Therefore, this study aims to analyze the improvement of fourth-grade students' Social Studies learning outcomes through the systematic implementation of the Numbered Heads Together cooperative learning model in classroom action research cycles.

2. RESEARCH METHOD

2.1. Research Type

his study employed Classroom Action Research using the Hopkins cycle model, which consists of four stages: planning, action, observation, and reflection. The research was conducted in two cycles. Each cycle consisted of four meetings, including three learning sessions and one evaluation session. The study was conducted with fourth-grade students at MI Pesantren Datok Sulaiman, Palopo City, during the 2025/2026 academic year, with the intervention involving the implementation of the Numbered Heads Together cooperative learning model on the topic of the distribution of natural resources.

Classroom Action Research was selected because the study aimed to improve the learning process and enhance students' learning outcomes gradually through actions that were evaluated in each cycle. The results of the reflection in Cycle I were used as the basis for improving the actions implemented in Cycle II.

2.2. Research Population and Sample

The population of this study consisted of all fourth-grade students at MI Pesantren Datok Sulaiman, Palopo City, during the 2025/2026 academic year. In this Classroom Action Research, the fourth-grade class was selected as the target of the intervention because the study focused on improving the Social Studies learning process and outcomes in that class. The research subjects consisted of 22 fourth-grade students, including 8 male students and 14 female students. Because all fourth-grade students within the accessible population were involved as research subjects, the sampling technique can methodologically be categorized as saturated sampling (census). The use of the term saturated sampling formalizes the methodological description of the research practice reported in the thesis, which identified all 22 students as research subjects.

Table 1. Distribution of Research Subjects by Gender

Group	Quantity	Percentage	Description
Male	8	36.36%	Grade 4 students
Female	14	63.64%	Grade 4 students
Total	22	100%	All research subjects

2.3. Data Collection Techniques

The data collection techniques were adapted to the characteristics of the Classroom Action Research and the data available in the study. Data were collected through learning outcome tests, observations, and documentation.

Table 2. Data Collection Techniques, Timing, and Objectives

Techniques	Data Collected	Timing	Objectives
Testing	Social Studies learning outcomes	Pre-cycle, Cycle I, Cycle II	To measure changes in learning outcomes
Observation	Student and teacher activities	Every meeting in each cycle	To assess the learning process and student engagement
Documentation	Lesson plans, student rosters, records/grades, and supporting documents	Before and during the research	To complement and strengthen research data

Tests are used to obtain initial ability data and learning outcomes after the action. Observations are carried out by observers to record student activities and aspects of the teacher's learning process. Documentation is used to complement research data, such as student data, learning tools, and evaluation results documents.

2.4. Research Instruments

The research instruments consisted of a learning achievement test, student activity observation sheets, teacher activity observation sheets, and documentation. The test instrument was developed based on competencies and indicators regarding the distribution of natural resources within the Social Studies (social education studies) curriculum. In the thesis, the evaluation instrument utilized essay questions covering the definition of natural resources, renewable and non-renewable natural resources, the distribution of natural resources, and their benefits.

Table 3. of Specifications for the Learning Outcome Test Instrument

No.	Indicators	Subject Matter	Form	Question Number
1	Explain the definition of natural resources	Concept of natural resources	Description	1
2	Distinguish between renewable and non-renewable natural resources	Types of natural resources	Description	2
3	List examples of natural resources	Examples of natural resources	Description	3
4	Identify the distribution of natural resources in Indonesia	Distribution of natural resources	Description	4
5	Explain the benefits and uses of natural resources	Benefits of natural resources	Description	5

Table 4. Student Activity Observation

No.	Aspects Observed	Operational Indicators
1	Attendance	Students attend and participate in the lesson
2	Group participation	Students are active within their respective groups
3	Understanding of the material	Students demonstrate an understanding of the material regarding the distribution of natural resources
4	Responsibility	Students take responsibility for group tasks
5	Behavior during the lesson	Students refrain from engaging in activities that disrupt the lesson
6	Ability to solve problems	Students are able to answer questions correctly

Table 5. Observation of Teacher Activities

Stage	Aspect	Indicators
Introduction	Opening and readiness	Greetings/prayer, attendance check, apperception, motivation, learning objectives
Introduction	Model orientation	Explaining the "Numbered Heads Together" cooperative learning model
Core activities	Organization	Organizing students into groups
Core activities	Material delivery	Distributing materials to the groups
Core activities	Participation	Encouraging student engagement and responsibility
Core activities	Group evaluation	Identifying the highest-scoring group and classifying the results
Conclusion	Reinforcement	Summarizing the material, assigning tasks, and outlining the next topic

2.5. Data Analysis Technique

Data analysis for the article can be conducted using SPSS while maintaining the characteristics of Classroom Action Research. The primary data consisting of the learning outcome scores of 22 students across the pre-cycle, Cycle I, and Cycle II are analyzed descriptively to observe changes in learning outcomes. Inferential analysis may be employed as a supplementary measure rather than a substitute for the Classroom Action Research analysis.

Table 6. Observation of Teacher Activities

Analysis	Objectives	SPSS Menu	Output
Descriptive	To determine the mean, SD, minimum, and maximum	Analyze > Descriptive Statistics > Descriptives/Explore	Mean, SD, Min, Max
Normality	To examine the data distribution/difference scores	Analyze > Descriptive Statistics > Explore > Plots	Shapiro-Wilk
Paired test	To test for changes in scores between measurements	Analyze > Compare Means > Paired-Samples T Test	t, df, Sig. (2-tailed)
Non-parametric alternative	If the normality assumption is not met	Analyze > Nonparametric Tests > Related Samples > Wilcoxon	Z dan Sig.
Reliability	To measure the internal consistency of the instrument	Analyze > Scale > Reliability Analysis	Cronbach's Alpha

When comparing the pre-cycle with Cycle I, and Cycle I with Cycle II, the appropriate test is the paired-samples t-test provided the parametric assumptions are met since the scores originate from the same students. Normality should be assessed based on the paired difference scores rather than by using Levene's test. If the assumption of normality is not met, the Wilcoxon signed-rank test should be used. Descriptive statistics must also report the mastery percentage based on the Minimum Mastery Criterion (KKM) of 75, as applied in the study. Changes in mean scores can be presented in tables and graphs to illustrate the trend of improvement from the pre-cycle to Cycle I and Cycle II.

2.6. Research Procedure

The research procedure follows the Classroom Action Research design based on the Hopkins model. The initial stage begins with problem identification and observation of the initial conditions. Subsequently, a precycle test is conducted to assess baseline ability. Following this, the research is carried out in two cycles, each comprising planning, action, observation, and reflection.

Table 7. Research Procedure

Stage	Key Activities	Expected Outcomes
Problem identification	Observing instruction and identifying low student learning outcomes in Natural Science	Identification of issues and need for intervention
Pre-cycle test	Administering a pre-test	Baseline data on student capabilities
Cycle I – Planning	Preparing the lesson plan (RPP), instructional media, student groups, and observation/evaluation instruments	Action plan ready for implementation
Cycle I – Action	Conducting Natural Science lessons using the "Numbered Heads Together" model	Implementation of instructional intervention
Cycle I – Observation	Observers recording student and teacher activities as well as evaluation results	Data on the learning process and outcomes
Cycle I – Reflection	Analyzing the weaknesses and successes of Cycle I	Cycle II improvement plan
Cycle II – Planning	Refining strategies, concrete examples, discussion guidance, and instructional media	Corrective action plan
Cycle II – Action	Conducting the revised "Numbered Heads Together" lesson	More effective instruction
Cycle II – Observation	Observing student/teacher activities and evaluation results	Post-intervention data
Cycle II – Reflection	Assessing the achievement of success indicators	Final research decision
SPSS analysis	Processing descriptive data and conducting paired tests if necessary	Statistical analysis results
Conclusion	Drawing conclusions based on changes in the learning process and outcomes	Research conclusions

3. RESULTS AND DISCUSSION

This study aims to analyze the improvement in Social Studies learning outcomes through the implementation of the Numbered Heads Together (NHT) cooperative learning model among fourth-grade students at Madrasah Ibtidaiyah Pesantren Datok Sulaiman Palopo. The study was conducted as classroom action research comprising a pre-cycle stage, Cycle I, and Cycle II. The research subjects consisted of 22 students. The learning outcome data analyzed were the students' individual scores recorded for the pre-cycle, Cycle I, and Cycle II stages as presented in the research data. The data indicate a trend of improving learning outcomes following the implementation of the Numbered Heads Together model. Student scores ranged from 30 to 80 in the pre-cycle, increased to a range of 55 to 90 in Cycle I, and further increased to a range of 60 to 100 in Cycle II.

Table 8. Student Learning Outcome Data for Pre-cycle, Cycle I, and Cycle II

No.	Pre-cycle	Cycle I	Cycle II
1	50	70	80
2	60	70	80
3	50	60	60
4	40	55	90
5	50	75	80
6	50	60	70

No.	Pre-cycle	Cycle I	Cycle II
7	50	80	80
8	50	80	90
9	40	70	80
10	50	60	80
11	50	70	80
12	60	80	80
13	60	80	80
14	40	70	80
15	50	60	70
16	40	70	75
17	30	60	70
18	40	70	75
19	40	60	70
20	80	90	100
21	50	70	90
22	75	80	100

Based on the reprocessing of those 22 individual values, descriptive statistics were obtained as presented in Table 9.

Table 9. Descriptive Statistics of Learning Outcomes

Measurement Stage	N	Mean	Std. Deviation	Minimum	Maximum
Pre-cycle	22	50,23	11,60	30	80
Cycle I	22	70,00	9,13	55	90
Cycle II	22	80,00	9,64	60	100

The analysis results indicate that the average learning outcome increased from 50.23 in the pre-cycle to 70.00 in Cycle I, reaching 80.00 in Cycle II. Thus, the average increase from the pre-cycle to Cycle I was 19.77 points, while the increase from Cycle I to Cycle II was 10.00 points. Overall, the average increase from the pre-cycle to Cycle II amounted to 29.77 points. These findings demonstrate that the implementation of the Numbered Heads Together method was accompanied by a gradual improvement in student learning achievement. Regarding mastery based on the Minimum Mastery Criterion of 75, two students (9.09%) met or exceeded the Minimum Mastery Criterion in the pre-cycle; this figure rose to seven students (31.82%) in Cycle I and 17 students (77.27%) in Cycle II. The KKM applied in this study was 75.

Table 10. Learning Outcome Mastery Based on the Minimum Mastery Criterion (KKM) of 75

Stage	Proficient (≥75)	Not Yet Proficient (<75)	Proficiency Percentage
Pre-cycle	2	20	9,09%
Cycle I	7	15	31,82%
Siklus II	17	5	77,27%

Table 10 shows that the improvement in learning outcomes occurred not only in the average scores but also in the number of students achieving the Minimum Mastery Criterion. The most significant increase occurred between the pre-cycle and Cycle I, with further improvement observed in Cycle II. These results align with the study's reflection process, which indicated that during Cycle I, students were not yet accustomed to cooperative learning, the teacher faced difficulties managing the "Numbered Heads Together" scenario, and discussion guidance required strengthening.

To reinforce the descriptive findings, the data were analyzed using statistical methods available in SPSS. Since measurements were taken from the same group of students at three different time points, the analysis focused on pairwise comparisons. An examination of the distributions revealed that some pairs of changes did not meet the assumption of normality. Therefore, in addition to the paired-samples t-test results, the non-parametric Friedman test was employed as a more appropriate overall test for three repeated measurements.

Table 11. Results of Pairwise Comparison Tests

Comparison	Mean Difference	t	Df	Sig. (2-tailed)
Pre-cycle – Cycle I	19,77	10,713	21	<0,001
Cycle I – Cycle II	10,00	5,745	21	<0,001
Pre-cycle – Cycle II	29,77	14,404	21	<0,001

The test results indicate highly significant differences between the pre-cycle and Cycle I, Cycle I and Cycle II, and the pre-cycle and Cycle II. The significance values for all comparisons were below 0.001. Thus, there was a statistically significant change in learning outcomes following the improvement and implementation of the instructional process through cycles of action.

Table 12. Friedman Test for Three Measurement Stages

Statistics	value
N	22
Chi-Square	42,286
df	2
Asymp. Sig.	<0,001

The Friedman test yielded a Chi-Square value of 42.286, with df = 2 and a significance level of <0.001. These results indicate a significant difference in student learning outcomes across the pre-cycle, Cycle I, and Cycle II stages. Thus, the improvement in learning outcomes observed descriptively is also supported by the statistical analysis.

The study's key findings indicate that implementing the Numbered Heads Together (NHT) cooperative learning model is associated with improved natural science learning outcomes among fourth-grade students. Based on data from 22 individuals, the average learning outcome rose from 50.23 in the pre-cycle stage to 70.00 in Cycle I and 80.00 in Cycle II. This represents an increase of 19.77 points from the pre-cycle to Cycle I and 10 points from Cycle I to Cycle II. In addition to the rise in the average score, the proportion of students meeting the Minimum Mastery Criterion of 75 also increased from 9.09% in the pre-cycle to 31.82% in Cycle I and 77.27% in Cycle II. This pattern of improvement demonstrates that shifting the instructional strategy to Numbered Heads Together not only raised the class average but also increased the number of students meeting learning standards. These results align with previous research indicating that NHT can enhance student learning outcomes by employing an approach that combines group activities with individual accountability.

The findings of this study align with those of Saptono [36] who discovered that the implementation of Numbered Heads Together influences the learning outcomes of elementary school students. This research reinforces the argument that the Numbered Heads Together structure can serve as an effective instructional strategy for enhancing students' academic achievement. Thus, the improvement in learning outcomes observed in this study does not merely reflect a chance occurrence during the classroom intervention; rather, it is consistent with more recent empirical evidence regarding the effectiveness of Numbered Heads Together at the elementary school level.

These findings are further supported by the meta-analysis conducted by Gracia et al. [37] which demonstrates that the "Numbered Heads Together" cooperative learning model has a significant impact on the learning outcomes of elementary school students. The meta-analysis revealed a high effect size, suggesting that "Numbered Heads Together" holds strong potential for enhancing learning outcomes by leveraging the characteristics of cooperative learning. In the context of this study, these characteristics are evident in the changes in students' learning behaviors as they become accustomed to working in groups, expressing their opinions, and taking responsibility for group tasks.

The research findings align with those of Rezeki [38] who employed classroom action research conducted over two cycles. That study demonstrated an increase in average learning outcomes from 74.44 in the first cycle to 82.96 in the second cycle following the implementation of the Numbered Heads Together method. This similar pattern indicates that improvements in learning outcomes using Numbered Heads Together can be achieved through a gradual process of instructional refinement. In the present study, the first cycle did not yield optimal results, as students were still adapting to cooperative learning; consequently, reflections from the first cycle were used to improve the implementation of instruction in the second cycle.

The findings of this study are also consistent with the research by Sari et al. [39] egarding the Numbered Heads Together (NHT) method among fourth-grade elementary school students. That study identified a difference in learning outcomes between the group receiving NHT instruction and the comparison group, and demonstrated a positive student response to the implementation of the model. This alignment is significant because the current study also focuses on fourth-grade students and indicates that NHT can be utilized to foster a more active learning process and enhance students' academic achievement.

More recent evidence was also presented by Ngada et al. [40] regarding elementary school science and social studies (IPAS) instruction. Their study reported an increase in learning outcomes from a pre-test average of 57.3 to 84.7 following the implementation of the Numbered Heads Together (NHT) method, yielding statistically significant results. Although the subject matter and grade levels differed, these results support the findings of the current study, indicating that Numbered Heads Together can be an effective approach for enhancing learning outcomes in lessons requiring conceptual understanding and active student engagement.

The improvement in learning outcomes observed in this study can be attributed to the key characteristics of the "Numbered Heads Together" method, which assigns responsibility to every group member. Students do not merely work as a group; they also face the possibility of being called upon to represent the group in presenting answers. This dynamic encourages students to pay attention to the material, engage in discussions, and prepare themselves for the teacher's questions. The process proved more effective during the second cycle after the teacher implemented improvements specifically, the use of more concrete examples and instructional media, the provision of motivation, and enhanced guidance during discussions. The source thesis explicitly states that, in the second cycle, instructional media illustrating the distribution of natural resources were used to help students grasp the material.

These changes in the learning process are crucial for explaining why the improvement observed in Cycle II was greater than that in Cycle I. In Cycle I, students still viewed cooperative learning as a novelty, which limited their willingness to answer questions and express their opinions; additionally, the teacher needed to further improve their mastery of the "Numbered Heads Together" procedure. By Cycle II, however, students had become accustomed to cooperative learning, group collaboration had become more cohesive, students were more confident in voicing their views, and the teacher’s classroom management had improved.

The novelty of this research lies in the integration of the Numbered Heads Together method, reflective improvement of instructional practices, and statistical analysis of changes in student learning outcomes regarding the distribution of natural resources in elementary school social studies. The study not only demonstrates that student scores improved following the implementation of *Numbered Heads Together* but also illustrates the progression of changes from the initial state through Cycle I and Cycle II. Statistical analysis reinforces these findings by revealing significant differences across the three measurement stages. Thus, the research contributes by presenting empirical evidence based on individual data that links changes in the instructional process to changes in learning outcomes.

Another novel aspect of this study lies in the finding that the effectiveness of the Numbered Heads Together model depends not merely on procedural application, but also on the quality of its implementation. Cycle I revealed that the model's application was suboptimal when students were unfamiliar with cooperative learning and the teacher had not fully mastered the instructional procedures. Conversely, following improvements such as the use of concrete examples, instructional media, motivational strategies, and guided discussions learning outcomes improved in Cycle II. Thus, this research demonstrates that the success of Numbered Heads Together stems from the interaction between the model's structure and the quality of its classroom implementation.

Theoretically, the research findings reinforce the use of cooperative learning as an approach capable of enhancing student engagement and learning outcomes in primary education. Numbered Heads Together provides a learning structure that facilitates student interaction, individual accountability, and group cooperation.

In practical terms, this study implies for elementary school social studies teachers that "Numbered Heads Together" can serve as an alternative instructional approach, particularly when lessons have previously been dominated by conventional methods. Teachers need to ensure that every student has the opportunity to participate and comprehend the material, rather than relying solely on students with higher academic ability.

For schools, the research findings can serve as a basis for encouraging the use of more varied cooperative learning models. The implementation of the "Numbered Heads Together" method also requires support from learning media and resources that align with the characteristics of the subject matter. In this study, the use of examples illustrating the distribution of natural resources was one of the improvements introduced in the second cycle that facilitated student understanding.

Berdasarkan hasil penelitian, guru disarankan menggunakan Numbered Heads Together secara It is planned with attention to grouping, assigning numbers to students, posing questions, providing opportunities for discussion, and randomly calling on students to share their answers. Teachers are also encouraged to use instructional aids or concrete examples relevant to the students' daily lives to make social studies concepts easier to understand.

Future research could expand upon this study by using a larger sample size, involving multiple schools, and incorporating a control group to compare the impact of the Numbered Heads Together method with other instructional models. Additionally, future studies could combine Numbered Heads Together with digital media or a problem-based learning approach to determine whether learning outcomes can be further enhanced through the integration of instructional models and media.

This study has several limitations. First, the sample size was limited to 22 students; therefore, generalizing the findings to a broader population requires caution. Second, the study employed a classroom action research design involving measurements on the same group of students, meaning there was no control group for comparison. Third, the data were derived from three measurement stages within a single class, implying that changes in learning outcomes could have been influenced by the students' growing familiarity with the subject matter and learning activities. Fourth, there were inconsistencies between the individual scores and the total sums recorded in the research source. The individual score tables listed 22 scores that, upon

recalculation, totaled 1,105 for the pre-cycle and 1,760 for Cycle II, whereas the documents cited totals of 1,115 and 1,750. Consequently, the statistical analysis in this article utilizes the individual scores listed in the tables as the primary data, ensuring that the SPSS results can be traced back and replicated.

Overall, the research results indicate an improvement in Social Studies learning outcomes following the implementation of the "Numbered Heads Together" cooperative learning model. The average learning outcome score rose from 50.23 in the pre-cycle stage to 70.00 in Cycle I and 80.00 in Cycle II, while the Friedman test revealed a significant difference across the three measurement stages ($\chi^2 = 42.286$; $p < 0.001$). These findings demonstrate that implementing "Numbered Heads Together" complemented by improved instructional strategies, the use of concrete examples and learning media, as well as the provision of motivation and discussion guidance can foster improvements in student learning outcomes.

4. CONCLUSION

Based on the research findings, the implementation of the Numbered Heads Together (NHT) cooperative learning model improved Social Studies learning outcomes regarding the distribution of natural resources among fourth-grade students at MI Pesantren Datok Sulaiman Palopo. This improvement was evidenced by a rise in the average score from 50.23 in the pre-cycle to 70.00 in Cycle I and 80.00 in Cycle II, as well as an increase in the learning mastery rate from 9.09% to 31.82% and 77.27%; the Friedman test results also indicated a significant difference across the three learning stages (χ^2 (2) = 42.286; $p < 0.001$). Thus, Numbered Heads Together serves as an alternative learning model to enhance Social Studies learning outcomes by fostering student engagement through discussion and group work. Future research is recommended to involve a larger number of students and schools, utilize a control group or a more robust experimental design, and integrate NHT with digital learning media while measuring other aspects such as student participation, motivation, communication, and collaborative skills.

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