

## Application of the NHT Model to Improve Student Learning Outcomes in Kelas 7 SMP 2 Cokroaminoto Makassar

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### ABSTRACT

*This study aims to improve history learning outcomes through the Numbered Heads Together (NHT) learning model for seventh grade students at Cokroaminoto Rappokalling Junior High School. This classroom action research was conducted in two cycles, with each cycle including planning, implementation, observation, and reflection. Data were collected through essay test, participation observation, interest questionnaire, and interview. Cycle I results showed 50% student participation and an average test score of 65. After improvements in cycle II (more specific questions, help cards, role play), participation increased to 75% and the average score reached 76. The conclusion of the research proves that NHT is effective in improving cognitive learning outcomes, participation, and student motivation. This study recommends the use of NHT with scaffolding and strict time management for interactive history learning..*

**Keyword :** Cooperative Learning, Numbered Heads Together (NHT), History Learning Outcomes.

### 1. Introduction

History learning at SMP Cokroaminoto Rappokalling, especially for grade VII students, faces serious challenges in terms of student engagement and achievement of learning outcomes. Initial observations showed that most students considered history to be a boring subject due to teaching methods that still relied on lectures, memorisation, and minimal interaction. The average daily test score of seventh grade students on the material 'The Development of Hindu-Buddhist Kingdoms in the Archipelago' only reached 55, far below the school's KKM of 70. In addition, student participation in class discussions was very low with only around 20% of students actively asking or answering teacher questions. This phenomenon indicates that the conventional approach used so far is less effective in building students' conceptual understanding or interest in learning. This research departs from the need to find innovative solutions to overcome these problems, one of which is through the application of the Numbered Heads Together (NHT) learning model (OlaREWaju, 2022).

The selection of the NHT model is based on its characteristics that emphasize collaboration, individual responsibility, and active participation aspects that have been less accommodated in history learning at the

school. This model involves dividing students into small groups, assigning numbers to each member, and random calling by the teacher to present answers. This mechanism is expected to trigger collective preparation within the group while reducing the dominance of certain students. For example, when studying the material 'Spice Trade and Colonialism in the Archipelago' (Siringoringo, 2017), students not only memories the year of Portuguese arrival to Maluku, but also discuss to analyse the economic and social impacts of colonialism. Thus, NHT has the potential to change the learning pattern from passive memorisation to a dynamic knowledge construction process (Quazi,2020).

The logical reasons for conducting this research include three main aspects. Firstly, the need to improve cognitive learning outcomes. Evaluation results showed that 65% of students had difficulty understanding the concepts of chronology and cause-and-effect relationships in historical events. For example, when taught about the Diponegoro War, students were unable to connect the Dutch policy of forced cultivation with the emergence of popular resistance (Ramadhan, 2024). Secondly, the importance of building social skills, such as co-operation and communication, which are poorly trained in the lecture method. Students tend to be individualistic and reluctant to share ideas, even though history requires

multidimensional analyses that can be enriched through group discussions. Third, strengthening intrinsic motivation. A survey of 30 seventh-grade students revealed that 75% felt unmotivated to learn history due to the monotony of the method. NHT, with its discussion activities and random number game, is expected to create a more fun and challenging learning atmosphere (Irawan, 2017).

This study was also prompted by the findings of research gaps in the application of the NHT model in the context of history learning. Most of the previous studies such as (Sari 2024) research in Malang Advent School and Saputro, (2023) research in SMP 10 Cimahi. The results show significant improvement in understanding science concepts, but there has been no in-depth exploration of the effectiveness of NHT in history learning which is full of narrative and contextual analyses. In addition, existing research tends to measure cognitive learning outcomes alone, without touching affective aspects such as student confidence or interest (Mabekoje, 2012). In Cokroaminoto Rappokalling Junior High School itself, there has never been an innovative cooperative learning model for history, so this research is a pioneer in testing the adaptation of NHT in this environment.

The novelty of this research lies in the integration of the NHT model with a contextual approach based on local wisdom. For example, in the material 'Local Wisdom of Bugis-Makassar Society', group discussions not only discuss the theory from the textbook, but also involve the analysis of primary sources such as Lontara manuscripts or local folklore (Yusuf, 2024). Students were invited to explore how local historical values (sepsi 'siri' na pacce' in Bugis culture) are relevant to modern life. In addition, this research developed a holistic assessment instrument that covered three aspects: cognitive (analytical essay test), affective (participation observation), and psychomotor (presentation skills). Another innovation was the use of interactive visual media, such as digital timelines and historical maps, to support the discussion process in NHT (Widarti, 2024).

Another supporting factor is the heterogeneous characteristics of the students at Cokroaminoto Rappokalling Junior High School. The school is located in an urban area with students from diverse socio-economic backgrounds. As many as 40% of the students come from small merchant families who are less exposed to learning resources outside of school. The NHT model is expected to create an inclusive environment where students with different abilities complement each other (Ashour, 2020). For example, technology-savvy students can help create digital presentations, while students with strong verbal skills lead discussions. This kind of collaboration is rare in conventional learning which tends to be competitive (Koehler et al., 2011).

Possible challenges in implementing NHT are time management and teacher preparedness. Cooperative

learning requires a longer time allocation for discussion and reflection, while the history class time in this school is only 2x45 minutes per week. In addition, teachers need short training to master effective discussion facilitation techniques. However, this study was designed with structured stages, starting from simulation, phased implementation, to formative evaluation, so that technical constraints could be minimized (Baker & Alkin, 1973).

From a theoretical perspective, this study combines Vygotsky's constructivism principles that emphasise learning through social interaction with Deci and Ryan's motivation theory (Sivan, 1986). NHT creates a 'zone of proximal development' where students help each other understand complex concepts, while fulfilling psychological needs for competence, autonomy and connectedness. In the context of history, this means that students do not just receive information, but also actively build understanding through dialogue and critical reflection (Bay & Macfarlane, 2011).

This research also has practical implications for school curriculum development. If NHT proves effective, the model can be adapted for other subjects that require in-depth analysis, such as sociology or languages. In addition, the research findings can serve as a reference for the local education office in developing cooperative learning-based teacher training. Ethically, this research involves the principles of beneficence and justice. All students have equal opportunity to participate, and the data will be used solely for academic purposes and to improve the quality of learning. Confidentiality of students' identity was also guaranteed through the use of initials when reporting (Pardo, 2014).

The research procedure included three action research cycles with stages of planning, implementation, observation, and reflection. Each cycle focused on refining the facilitation technique, such as adjusting the duration of the discussion or the complexity of the questions. Data collection instruments included participation observation sheets, learning outcome tests, student interest questionnaires, and teacher interviews. Data analysis was conducted qualitatively and quantitatively to ensure the validity of the findings (Studies, 2013).

Thus, this research does not only aim to improve the numbers on students' report cards, but also to instil a love of history as a mirror of human values. Through NHT, students are expected to not only understand past events, but also be able to take lessons to address present challenges such as maintaining unity in diversity, as reflected in the history of the struggle of the Indonesian nation



## 2. Research Methods

Describe the research methods and research techniques used. Describe concisely but stay specific, such as size, volume, replication and processing techniques. For the new method, it has to be explained in detail so that other researchers can reproduce the experiment. While the established method can be explained by selecting references.

This research was conducted using the Classroom Action Research (PTK) method which aims to improve history learning outcomes through the application of the Numbered Heads Together (NHT) learning model. PTK was chosen because of its collaborative, reflective and sustainable approach, allowing researchers (teachers) to make gradual improvements based on direct evaluation in the field. The research was conducted in three cycles, where each cycle consisted of four main stages: planning, action implementation, observation, and reflection. The research subjects were 28 students of class VII of Cokroaminoto Rappokalling Junior High School, with a composition of 15 male students and 13 female students. The selection of this class was based on the results of initial observations that showed low student participation in learning history as well as daily test scores that were below the KKM (70).

In the planning stage, the researcher together with the history teacher developed an NHT-based learning plan. The first step was to analyse the syllabus to determine the basic competencies that were the focus, namely 'Analysing the development of Hindu-Buddhist kingdoms in the archipelago'. This material was chosen because it requires multidimensional understanding, such as geographical, economic and cultural aspects, making it suitable to be developed through group discussions. Next, the researcher designed a lesson plan that integrated the steps of NHT, prepared visual learning media (such as interactive maps, pictures of inscriptions, and short videos), and compiled research instruments. The instruments used included student participation observation sheets, analytical essay tests, learning interest questionnaires, and semi-structured interview guidelines.

The action implementation stage began by dividing students into six heterogeneous groups, each consisting of 4-5 students. The grouping was based on academic ability level (high, medium, low) identified through previous test scores. The teacher started the learning with a short presentation (15 minutes) using a projector to display the visualisation of Borobudur temple and a map of the spice trade route during the Sriwijaya kingdom. After that, the teacher provides case-based discussion questions, such as: "Why is Sriwijaya called the largest maritime kingdom? How did Buddhism influence the government system?". Students are given 20 minutes to discuss in groups. During the discussion, the teacher goes around to monitor the group dynamics and provide

directed assistance, for example by asking a guiding question: 'What is the relationship between Sriwijaya's geographical location and its maritime power?.'

After the discussion is complete, the teacher uses a random number generator app to select the number of students who will present their answers. The student with the selected number must explain the results of the discussion in front of the class without the help of notes, while other group members may add or correct the answers. For example, when number 3 is selected, the student must answer the question, and his or her group mates can raise their hands to provide corrections or additional information. This mechanism is designed to increase individual responsibility while reducing dependence on more dominant students.

Observations were conducted by the teacher and an observer (peer) using an observation sheet that focused on three indicators: (1) frequency of student participation in discussion, (2) depth of answer analysis, and (3) collaboration dynamics between group members. Quantitative data were obtained from the results of the essay tests at the end of each cycle, while qualitative data were collected through field notes, video recordings of discussion activities, and student interest questionnaires. Examples of success indicators set are an increase in active student participation of at least 75% and the achievement of an average test score of at least 75 (according to KKM).

The reflection stage was conducted after each cycle by analysing observation data, test results, and student responses. Reflection on cycle I revealed that although student participation increased to 50%, some groups still had difficulty managing discussion time. For example, two groups were too focused on finding information on the internet without filtering its relevance, while one other group tended to be passive due to a lack of initial understanding. Based on these findings, the researcher improved the strategy by adding time limits for each stage of the discussion and providing 'help cards' containing key points of the material as a guide for students.

### Research Design

The study was designed in three interactive cycles, where each cycle aimed to improve on the weaknesses of the previous cycle. The first cycle focused on introducing the NHT model and familiarising students with structured discussion activities. The material used was 'Sriwijaya Kingdom', with a time allocation of 2x45 minutes. The results of cycle I showed an increase in student participation to 50%, but the average test score only reached 65. Reflection showed that the discussion questions given were too general, making it difficult for students to develop structured arguments.

## Data Collection Instruments

- 1) Learning Outcomes Test: Analytical essay questions that measure students' ability to explain the chronology of events, analyse cause-and-effect relationships, and evaluate the impact of history (Ningsih, 2022). Sample question: 'Explain how the caste system in Hinduism affected the social structure of the Majapahit kingdom!'
  - 2) Observation Sheet: Used to record student activities during the discussion, with indicators such as frequency of asking questions, quality of contribution of ideas, and co-operation in the group.
  - 3) Interest Questionnaire: Consists of 10 Likert scale statements (1-4) to measure students' motivation and attitude towards learning history. Example statement: 'I feel more motivated to learn history when discussing with a group of friends'.
4. Interviews: Conducted with six students (two from each ability level) to explore their responses to the NHT learning model. Sample questions: 'What was the biggest challenge you faced during the group discussion?'

## Data Analysis

Quantitative data were analysed descriptively by calculating the percentage increase in participation and average test scores. Qualitative data from observations and interviews were analysed through three stages: data reduction (selecting important information), data presentation (compiling in narrative form), and conclusion drawing. Data triangulation was conducted by comparing test results, observations, and interviews to ensure the validity of the findings (Blaikie, 2003).

## Research Success Indicators

The research is declared successful if it fulfils the following three criteria:

- 1) At least 75% of students actively participated in group discussions.
- 2) The average test score reaches 75 or more (according to the school's KKM).
- 3) There is an increase in learning interest score by 20% based on the questionnaire results.

## Implementation and Obstacles

The implementation of this PTK faced several obstacles, such as limited lesson time and students' adaptation to the new learning model. However, collaboration between researchers and teachers helped overcome these challenges through adjustments in time allocation and the use of supporting technology. For example, the duration of the discussion was shortened by dividing the

stages into small parts, while the use of digital applications such as Quizizz improved the efficiency of assessment. The final results showed that the NHT model not only improved students' cognitive understanding, but also built collaboration skills and self-confidence - essential competencies to face the challenges of 21st century learning (Khasinah, 2013).

## 3. Results and Discussions

This class action research was conducted at SMP Cokroaminoto Rappokalling involving 28 grade VII students. The purpose of the research was to improve history learning outcomes through the application of the Numbered Heads Together (NHT) learning model. The research was conducted in two cycles, where each cycle included the planning, action implementation, observation, and reflection stages. The focus of the learning material was "The Development of the Hindu-Buddhist Kingdom in the Archipelago", with success indicators in the form of increasing student participation of at least 75% and achieving an average test score of at least 75 (according to KKM). The following is a complete description of the research results from the two cycles that have been carried out.

### Siklus I

In the first cycle, researchers and history teachers designed NHT-based learning with the material "Sriwijaya Kingdom". The planning stage began with a curriculum analysis to determine the appropriate basic competencies, namely "Analyzing the supporting factors of Sriwijaya maritime". The Learning Implementation Plan (RPP) was prepared with NHT steps, including group division, random number assignment, structured discussion, and answer presentation. The learning media used included an interactive map of the spice trade route, a picture of the Talang Tuo inscription, and a short documentary video about the Srivijaya archaeological site.

The implementation of the action began by dividing students into six heterogeneous groups, each consisting of 4-5 students. Grouping was done based on the level of academic ability (high, medium, low) identified through previous test scores. Each group member was given a number from 1 to 5. The teacher began the lesson with a short 15-minute presentation, explaining the geographical location of Srivijaya and its role as a center for the spice trade. After that, the teacher gave discussion questions: "Why was Srivijaya able to become the largest maritime kingdom? How did Buddhism influence the government system?". Students were given 20 minutes to discuss in groups.

During the discussion, it was observed that some groups began to actively exchange opinions, while other groups tended to be passive. For example, Group 3 consisting of students with diverse abilities (S-05, S-12, S-20, S-25) looks dynamic: S-05 (high ability) leads the discussion,



S-12 (medium ability) looks for references from textbooks, while S-20 and S-25 (low ability) listen more. On the other hand, Group 5 (S-08, S-15, S-18, S-22) has difficulty because no student takes the initiative to lead the discussion. The teacher then provides scaffolding by asking a guiding question: "What is the relationship between Sriwijaya's location in the Malacca Strait and its maritime power?" After the discussion, the teacher uses a random number generator application to select the number of students who will present. For example, when number 3 is selected, S-20 from Group 3 comes to the front of the class. He explains that Sriwijaya became strong because it controlled shipping lanes and collected taxes on foreign ships. However, his answers are still limited to information from textbooks without in-depth analysis. Another group member, S-05, added that the existence of the Talang Tuo inscription showed Srivijaya's role in protecting Buddhist traders. This presentation received appreciation from the teacher, although there were some factual errors, such as equating the Talang Tuo inscription with the Kedukan Bukit inscription.

The results of student participation observations showed that 14 out of 28 students (50%) actively asked questions, answered, or contributed ideas during the discussion. The rest tended to be silent or just followed the orders of their group mates. The average score of the essay test given at the end of the cycle reached 65, with the highest score distribution of 80 (S-05) and the lowest 50 (S-22). Analysis of the test answers showed that students were able to state basic facts (for example: the location of Srivijaya, the name of the king), but were less able to analyze cause and effect or connect events with socio-economic contexts. For example, only 8 students were able to explain the relationship between the collapse of Srivijaya and the rise of the Majapahit kingdom. Refleksi siklus I mengidentifikasi beberapa kelemahan:

- 1) Discussion questions are too general, making it difficult for students to construct structured arguments.
- 2) The 20-minute discussion time was not enough for the low-ability groups.
- 3) Some students still depended on their groupmates' answers.
- 4) The documentary video learning media was too short (5 minutes), so it did not provide a complete picture of Sriwijaya.

Based on these findings, researchers and teachers made improvements for cycle II:

- a) Simplify the discussion questions to be more specific and contextual.
- b) Increase the discussion duration to 25 minutes.
- c) Providing "help cards" containing key points of material to guide the discussion.

- d) Using a longer documentary video (10 minutes) with detailed narration.

## Siklus II

Cycle II focused on the material "Majapahit Kingdom" with the basic competency of "Analyzing supporting factors for the glory of Majapahit". Planning was carried out by refining the lesson plan based on reflections on cycle I. Discussion questions were designed to be more structured, for example: "Compare the Majapahit government system (for example the Palapa oath) with the current modern government system. What are the similarities and differences?". The learning media used included a digital timeline of the development of Majapahit, a picture of Penataran Temple, and a 10-minute documentary video about daily life during the glory of Majapahit.

The implementation of the action began with the same group division as cycle I, but with the addition of "help cards" containing points such as "Palapa Oath", "The Role of Gajah Mada", and "Trade Network". The teacher also introduced a "role play" activity where each group member was given the role of a patih, trader, or farmer to see different perspectives. For example, Group 2 (S-03, S-10, S-17, S-24) divided the roles: S-03 as Gajah Mada, S-10 as a spice trader, S-17 as a farmer, and S-24 as a chronicler.

The discussion was more dynamic compared to cycle I. Group 4 (S-07, S-14, S-19, S-27), which was previously passive, became active after using the assistance card. S-19 (low ability) expressed his opinion: "If I were a farmer, I would be happy because Majapahit had a good irrigation system". S-14 (medium ability) added: "But if there is a war, farmers become victims". The teacher took advantage of this momentum by inviting students to connect the role of farmers with the political stability of the kingdom.

After the discussion, the teacher used the random number generator application again to select students to present. When number 2 was selected, S-10 from Group 2 stepped forward to explain that the Palapa oath system was similar to the vision of a modern president, but different because it focused more on power. S-17 added that the Majapahit trade network was similar to the current sea toll road. This presentation showed an increase in the ability to analyze cause and effect, although there were still conceptual errors, such as equating "nusantara" in the Palapa oath with the concept of a modern unitary state.

The results of student participation observations showed a significant increase: 21 out of 28 students (75%) were actively involved in the discussion. Previously passive students, such as S-22 and S-25, began to dare to express simple opinions. The average score for the essay test increased to 76, with the highest score distribution being

85 (S-05) and the lowest being 60 (S-22). Analysis of the test answers showed that 18 students were able to connect Gajah Mada's policies with the expansion of the Majapahit region, while 10 students were able to compare the past and modern government systems.

Interviews with six students after cycle II revealed positive responses to the NHT model. S-05 stated: "I understand better because I can discuss with my friends. If I don't understand, I can ask directly". S-22, who was previously passive, admitted: "At first I was afraid of making mistakes, but after getting the role as a farmer, I became brave enough to speak up". However, some students such as S-18 still find it difficult: "Sometimes during discussions the direction is unclear, they like to talk about other things."

Siklus II reflection identified successes and challenges:

- 1) Successes:
  - a) Increased student participation reached the target of 75%.
  - b) Average test scores exceeded the KKM (76).
  - c) Students began to get used to collaboration and individual responsibility.
- 2) Challenges:
  - a) Some groups still deviated from the discussion topic.
  - b) Students with low abilities had difficulty following the discussion tempo.
  - c) Peer assessment was not optimal because students tended to give high marks to close friends.

#### Follow-up and Recommendations

Based on the results of the two cycles, this study concluded that the NHT model was effective in improving the history learning outcomes of grade VII students at SMP Cokroaminoto Rappokalling. Improvements were not only seen in the cognitive aspect (test scores), but also affective (motivation) and psychomotor (discussion skills). However, this success requires the support of several factors:

1. Discussion questions must be specific and contextual to guide students in constructing structured arguments.
2. Scaffolding in the form of help cards and role play is needed to facilitate students with low abilities.
3. Strict time management to keep the discussion focused and all groups can complete the task.
4. Integration of simple technology such as random number generator applications and interactive quizzes to increase student engagement.

This study also recommends teacher training in discussion facilitation techniques, especially to manage group dynamics and provide constructive feedback.

School institutions are advised to provide access to digital learning resources, such as quality documentary videos and historical manuscript databases, to enrich discussion materials.

#### Practical Implications

The findings of this study have broad implications for history learning practices in secondary schools. First, the NHT model can be adapted for other materials that require critical analysis, such as the history of colonialism or national movements. Second, this collaborative approach is in line with the demands of the independent curriculum which emphasizes project-based learning and strengthening the profile of Pancasila students. Third, the increase in student participation proves that history learning does not have to be monotonous, but can be packaged as a challenging and fun exploration activity.

#### Research Limitations

This study has several limitations:

1. The scope is limited to two cycles with Hindu-Buddhist kingdom material. Further research is needed to test the effectiveness of NHT on contemporary history material.
2. The research subjects are homogeneous (one class in one school), so generalization of findings needs to be done carefully.
3. Dependence on the role of teachers as facilitators. If teachers are poorly trained, the dynamics of the discussion may not be optimal.

#### 4. Conclusion

This class action research proves that the Numbered Heads Together (NHT) model is able to improve the history learning outcomes of grade VII students of SMP Cokroaminoto Rappokalling. Through two intervention cycles, there was a significant increase in student participation (from 50% to 75%) and average test scores (from 65 to 76). This success cannot be separated from continuous improvements in question design, time management, and learning media support. These findings confirm that cooperative learning is not just a teaching strategy, but also a means to build students' social skills, self-confidence, and love of history as a reflection of human values.

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