

## THE IMPLEMENTATION OF THE NUMBERED HEADS TOGETHER (NHT) MODEL BASED ON QUESTION CARD MEDIA: IMPROVING IRE LEARNING OUTCOMES

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### ABSTRAK

Penelitian ini mengkaji pengaruh penerapan model pembelajaran kooperatif *Numbered Heads Together (NHT)* yang didukung oleh media *Question Card* terhadap hasil belajar peserta didik pada mata pelajaran Pendidikan Agama Islam (PAI) di SMP Negeri 1 Ambarawa. Penelitian ini menggunakan desain kuasi-eksperimen yang melibatkan dua kelompok, yaitu kelompok eksperimen yang memperoleh pembelajaran melalui model NHT berbantuan media *Question Card* dan kelompok kontrol yang diajar dengan metode ceramah konvensional. Hasil belajar peserta didik diukur melalui tes akhir (*post-test*) yang dirancang untuk menilai pemahaman konseptual dan keterampilan berpikir kritis. Data dianalisis menggunakan statistik deskriptif dan inferensial untuk mengidentifikasi perbedaan hasil belajar antara kedua kelompok. Temuan penelitian menunjukkan bahwa model NHT berbantuan media *Question Card* memberikan pengaruh positif yang signifikan secara statistik terhadap hasil belajar peserta didik, khususnya dalam meningkatkan keterlibatan siswa di kelas dan keterampilan berpikir kritis. Penerapan model ini juga mendorong terciptanya lingkungan pembelajaran yang lebih interaktif dan kolaboratif, sehingga memungkinkan peserta didik untuk berpartisipasi lebih aktif dalam proses pembelajaran serta mengembangkan pemahaman yang lebih mendalam terhadap materi ajar. Penelitian ini memberikan kontribusi praktis dan teoretis terhadap pengembangan pendekatan pembelajaran kooperatif berbantuan media guna meningkatkan kualitas pembelajaran Pendidikan Agama Islam pada jenjang pendidikan menengah.

*Kata Kunci: Hasil Belajar, Numbered Heads Together, Pembelajaran Kooperatif, Question Card.*

### ABSTRACT

This study investigates the effect of implementing the *Numbered Heads Together (NHT)* cooperative learning model supported by *Question Card* media on students' learning outcomes in Islamic Religious Education (PAI) at SMP Negeri 1 Ambarawa. A quasi-experimental design was employed involving two groups: an experimental group receiving instruction through the NHT model assisted by *Question Card* media and a control group taught using the conventional lecture-based method. Students' learning outcomes were assessed through a *post-test* designed to measure conceptual understanding and critical thinking skills. The data were analyzed using both descriptive and inferential statistics to identify differences in learning outcomes between the two groups. The findings indicate that the NHT model assisted by *Question Card* media has a statistically significant positive effect on students' learning outcomes, particularly in promoting classroom engagement and enhancing critical thinking skills. The implementation of this model also fostered a more interactive

and collaborative learning environment, enabling students to participate more actively in the learning process and to develop a deeper understanding of the instructional material. This study offers practical and theoretical contributions to the development of media-assisted cooperative learning approaches for improving the quality of Islamic Religious Education instruction at the secondary school level.

*Keywords: Learning Outcomes, Numbered Heads Together, Cooperative Learning, Question Card.*

## INTRODUCTION

Learning outcomes in Islamic Religious Education (IRE) learning should include deep understanding, critical thinking skills, as well as students' ability to relate the concepts learned to daily life (Bulkani et al., 2022; Safitri et al., 2023; Yandi et al., 2023). The success of learning is not only measured in terms of academics, but also from the aspects of students' character development and attitudes. In ideal learning, students are expected to actively participate in discussions, collaborate with their peers, and be able to reflect on the material taught in the context of real life (Daulay et al., 2023; Siburian et al., 2024). Learning that is based on interaction, collaboration, and the use of relevant media will create an atmosphere that supports the achievement of optimal learning outcomes, in which students not only master the material theoretically, but are also able to apply such knowledge in their daily lives (Palupi et al., 2023; Rahayu et al., 2023; Seftiami et al., 2023).

However, the reality in the field shows that the learning process has not fully reflected these expectations. Many students remain passive during the learning process and tend only to listen to the teacher's explanations without actively engaging in discussion or group collaboration. The instruction implemented is still dominated by the lecture method and individual assignments, which provide limited opportunities for students to interact and share their understanding with their peers. In addition, the limited use of engaging learning media makes students less motivated to understand IRE materials. As a result, their learning outcomes have not been optimal, both in terms of conceptual understanding and critical thinking skills. The results of a preliminary study involving an interview with Mr. Sodikin, S.Pd.I., at SMP Negeri 1 Ambarawa revealed several problems, such as differences in learning interest, difficulties in understanding the material, and the mismatch between the learning model and students' learning styles.

In response to these problems, this study proposes the implementation of the Numbered Heads Together (NHT) cooperative learning model based on Question Card media to increase students' learning activeness. The NHT model involves cooperation among students in small groups, in which each group member is assigned a number and is responsible for contributing to the discussion. Each group is given a task or question that must be completed together, and the member number is called randomly to answer in front of the class (Adelya et al., 2023; Jumrah et al., 2023; Lelapary, 2022; Nur'aini, 2023; Saragih et al., 2023). This approach is designed to increase active participation, reduce anxiety, and facilitate collaborative learning. Through this model, students have the opportunity to be directly involved, share knowledge, and improve their understanding through social interaction. Therefore, this method is expected to support learning outcomes by creating a more active and participatory learning atmosphere (Fauziah & Setyaningsih, 2024; Sambawarana, 2022).

Cooperative learning models have been proven effective in improving students' learning activeness and learning outcomes, especially in learning that requires collaboration among students (Hamid, 2022; Nababan et al., 2023). One of the models widely used is Numbered Heads Together (NHT), which has been shown to enhance interaction among students, cooperation, and active involvement in the learning process. A study by Nuraisyah (2023) showed that the implementation of the NHT model can improve students' learning outcomes, particularly in enhancing their communication skills and critical thinking abilities (Nuraisyah & Pratomo, 2023). A similar finding was reported by Sari (2022), who revealed that the NHT model is also effective in increasing students' motivation and learning activeness across various subjects, including mathematics and social science. Another study by Puspitasari (2021) emphasized that the NHT model can improve the quality of learning outcomes by enhancing students' representation and problem-solving skills.

Although many studies have examined the effectiveness of the NHT model, there are still limitations in understanding its specific impact on students' learning outcomes, especially in the context of IRE. Dewi (2023) found that the NHT model has been more widely explored in the context of mathematics and science learning, while its application in IRE learning remains rarely studied. In addition, Daulay (2023) highlighted the need for variation in the

implementation of the NHT model to adjust to the characteristics of students and different school environments. This study aims to fill that gap by examining the impact of implementing the NHT model based on Question Card media in IRE learning. It is expected to provide new insights into how the NHT model can be optimized to improve students' activeness and learning outcomes in IRE at the junior high school level.

This gap in the literature underscores the importance of this study in examining the implementation of the NHT model based on Question Card media in improving IRE learning outcomes among junior high school students. This study aims to test whether the implementation of this model can increase students' learning activeness, improve their understanding of the material, and support the achievement of better learning outcomes. Specifically, this study will also identify how the NHT cooperative learning model based on Question Card media can address the problems faced by students, such as difficulties in understanding the material and differences in learning interest. Thus, the main objective of this study is to provide empirical evidence regarding the effectiveness of a media-based cooperative learning model in improving students' learning activeness and learning outcomes in the subject of IRE.

In addition, this study also provides a theoretical contribution by enriching the study of cooperative learning in the context of Islamic religious education. This study is expected to provide practical implications for IRE teachers in designing learning strategies that are more participatory, interactive, and media-based. This more innovative approach can encourage students to be more active in learning and to explore the material taught more deeply. Thus, the findings of this study may introduce a new approach to IRE learning that is able to overcome the limitations of traditional teaching methods, as well as improve the quality of religious education at the junior high school level. This also has the potential to increase students' involvement in a more dynamic and contextual teaching and learning process.

## **METHODS**

This study employed a quasi-experimental design with a quantitative approach, aiming to analyze the effect of the Numbered Heads Together (NHT) cooperative learning

model based on Question Card media on students' learning outcomes in IRE at SMP Negeri 1 Ambarawa. The research design used was a post-test only control group design, in which two groups of students were randomly selected, namely an experimental group that received the NHT model based on Question Card media and a control group that received conventional lecture-based instruction. The measurement of learning outcomes was conducted through a post-learning test designed to evaluate students' conceptual understanding and critical thinking skills.

The population in this study consisted of all eighth-grade students of SMP Negeri 1 Ambarawa, with the sample selected using the cluster random sampling technique. The sample consisted of two classes, namely the experimental class and the control class. This technique was chosen to ensure the diversity of student characteristics in both groups. The research instruments consisted of a learning outcomes test measuring the cognitive domain and multiple-choice items to measure students' outcomes and engagement in learning. These instruments had been tested for validity and reliability to ensure their accuracy and consistency in measuring the variables under study.

The data obtained were analyzed using descriptive statistics to describe the characteristics of the data and inferential statistics to test the hypothesis, particularly by using an independent samples t-test to determine the difference in learning outcomes between the experimental and control groups. Data processing was carried out using statistical software such as SPSS. This study also paid attention to research ethics, including permission from the school, parental consent, and assurance of the confidentiality of students' data.

## **RESULT AND DISCUSSION**

### **Normality Test.**

The normality test was conducted to determine whether the data in this study followed a normal distribution. The data were considered to be normally distributed if the significance value was greater than 0.05. Based on the test that had been conducted, the results of the normality test in this study are presented as follows.

	kelompok	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
data	1.00	.181	28	.019	.937	28	.092
	2.00	.147	29	.110	.931	29	.060

a. Lilliefors Significance Correction

Based on the results of the normality test using the Shapiro-Wilk method, both data groups had significance values greater than 0.05, namely 0.092 for the first group and 0.060 for the second group. This indicates that the research data met the assumption of normality, so parametric statistical analysis could be used.

### Homogeneity Test

The homogeneity test aims to examine the equality of variances among data groups. The equality of variances is one of the assumptions that must be met before conducting tests using parametric statistics, such as the t-test and ANOVA. The testing criterion is that if the significance value is greater than 0.05, the data are considered homogeneous, whereas if the significance value is less than 0.05, the data are considered not homogeneous.

		Levene Statistic	df1	df2	Sig.
data	Based on Mean	.389	1	55	.536
	Based on Median	.439	1	55	.510
	Based on Median and with adjusted df	.439	1	52.585	.511
	Based on trimmed mean	.407	1	55	.526

The results of the homogeneity test showed a significance value of 0.536 ( $> 0.05$ ), so it can be concluded that the variances between the experimental group and the control group were homogeneous. Thus, the assumption of homogeneity was fulfilled, and the analysis could be continued using parametric statistical tests.

### Independent Samples T-Test

The independent samples t-test was used to determine the difference in mean scores between two independent groups. The decision was based on the significance value (Sig. 2-

tailed); a value of less than 0.05 indicates a significant difference, whereas a value of greater than 0.05 indicates no significant difference.

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
data	Equal variances assumed	.389	.536	3.072	55	.003	1.46059	.47546	.50776	2.41342
	Equal variances not assumed			3.076	54.920	.003	1.46059	.47483	.50898	2.41220

Based on the results of the independent samples t-test, the significance value (2-tailed) was 0.003 ( $< 0.05$ ). This indicates that there was a significant difference between the experimental group and the control group. Thus, the learning model implemented had a significant effect on the variable under study, meaning that the research hypothesis stating that there was a difference between the two groups was accepted.

This study proved that the implementation of the Numbered Heads Together (NHT) cooperative learning model based on Question Card media can improve students' learning outcomes in IRE at SMP Negeri 1 Ambarawa. This finding is in line with many studies showing that cooperative learning can encourage students' active engagement, which in turn improves their understanding of the material and critical thinking skills (Alwi et al., 2023; Khusna et al., 2024; Maulana & Dhoruri, 2024; Musdalifa, 2023). The results of the statistical test showed a significant difference between the experimental group and the control group, with the experimental group using the NHT model based on Question Card showing better improvement in learning outcomes. This confirms that the cooperative learning model, which emphasizes student interaction, not only increases activeness but also has a positive effect on students' academic outcomes, especially in understanding applicative materials such as IRE.

The significant improvement in learning outcomes in the experimental group can be explained by the learning structure of the NHT model, which encourages discussion and collaboration among students. In NHT learning, students are given the opportunity to be actively involved in small groups, share ideas, and help one another in understanding the material (Ayu et al., 2024; Handayani et al., 2022; Nihayah, 2022; Tamara, 2025). This process enriches their learning experience by providing space for them to develop critical thinking and communication skills (Nourhasanah & Aslam, 2022). Discussion and collaborative activities within the group accelerate understanding of the material and reduce the anxiety that students often experience when facing examinations or tests. In addition, the random calling of numbers to answer questions in front of the class ensures that each student contributes to the learning process and takes responsibility for their own understanding, which encourages them to be more focused and actively participate (Cahyani et al., 2025; Kurnia & Rahman, 2026; Widiyanti, 2024).

In addition, the use of Question Card media has proven effective in enriching the learning process (Cahyono et al., 2025; Seftiani et al., 2023). This media provides relevant and in-depth questions, motivating students to interact more actively with the learning material (Jatmiko et al., 2023; Rahayu et al., 2023; Wahyuni et al., 2022). The question cards, which contain key questions related to IRE material, provide stimulation for students to think critically and analyze religious concepts more deeply (Kholipah et al., 2022; Nauli Situngkir et al., 2023). Unlike the lecture method, which relies only on one-way communication, the use of Question Card media creates a learning atmosphere that is more dynamic, interactive, and enjoyable (Nisa et al., 2025; Qomaria et al., 2025). Students are not only given information, but they are also given the opportunity to actively contribute and discuss their understanding with their peers, which helps them internalize the material more effectively. Thus, the implementation of this media shows the importance of variation in teaching methods to improve students' overall engagement.

However, although the NHT model based on Question Card has proven effective, challenges in its implementation still remain, especially those related to differences in students' learning styles. Some students who prefer visual or kinesthetic approaches may feel less

involved in activities that are more based on verbal discussion. This indicates that although this model is effective for most students, the diversity of learning styles needs to be taken into account in order to maximize the effectiveness of learning. Therefore, it is recommended that teachers be more flexible in adapting this method by combining it with other techniques that also accommodate the diversity of students' learning styles. For example, by adding visual or kinesthetic elements to the media used, teachers can help students who have difficulty adapting to discussion-based methods..

Overall, this study confirms that the implementation of the Numbered Heads Together model based on Question Card is highly effective in improving students' activeness and IRE learning outcomes at the junior high school level. These results provide practical implications that learning based on interaction and collaboration among students, and supported by the use of relevant media, can improve the quality of religious education. This study also contributes to the development of cooperative learning theory, particularly in the context of Islamic religious education. Therefore, further research needs to explore the implementation of this model in other subjects and examine its long-term impact. Thus, this study opens up opportunities for further development regarding how cooperative learning models can be applied more broadly and effectively across various levels of education and school contexts.

## **Conclusion**

This study successfully demonstrated that the implementation of the Numbered Heads Together (NHT) cooperative learning model based on Question Card media can significantly improve students' learning outcomes in IRE at SMP Negeri 1 Ambarawa. The results of the statistical tests and data analysis showed that this model was able to increase students' activeness, understanding of the material, and critical thinking skills. These findings contribute to cooperative learning theory, particularly in the context of Islamic religious education, which has so far been more dominantly taught using an expository approach. Practically, this study suggests the use of the NHT model based on Question Card media as an alternative strategy that can enhance student interaction and participation, as well as improve the quality of learning outcomes in IRE instruction.

However, this study also has limitations related to the diversity of students' learning styles, which requires adjustment of the model to individual needs. Some students with visual or kinesthetic learning styles may experience difficulties with methods based on verbal discussion. Therefore, it is important for teachers to take this diversity into account in implementing this model. Further research is recommended to explore the application of this model in other subjects and to examine its long-term effects. Thus, the findings of this study open up room for further development in the implementation of cooperative learning that is more flexible and relevant to the needs of contemporary education.

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