



Integration of the Numbered Heads Together Model and Audiovisual Media in Social Studies: Strengthening Character Education in Elementary Schools

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Abstract: This article examines the effectiveness of integrating the Numbered Heads Together (NHT) cooperative learning model with audio-visual media in social studies to boost learning outcomes and character development among 60 fifth-grade students at Elementary School Cluster 1, Takalar Regency, South Sulawesi, Indonesia. Using a quantitative experimental design with pre-test/post-test control groups, the experimental group (NHT + audio-visual) outperformed the control (conventional methods), achieving a mean post-test score of 82.4 vs. 66.3 ($p < 0.05$). Observations showed enhanced participation, collaboration, accountability, critical thinking, and social skills. This approach fosters a dynamic environment for cognitive, moral, and social growth, emphasizing teacher training and tech infrastructure.

Keywords: character education; audio-visual media; elementary school education; Numbered Heads Together; social studies learning.

Introduction

Character education in elementary schools is fundamental for developing students' ethical awareness, responsibility, and positive behavior. When integrated with subject learning, particularly social studies, character education has the potential to instill valuable moral and social principles that students can apply in their daily lives. Beyond teaching moral concepts, effective character education emphasizes active learning experiences that cultivate social skills, promote cooperation, and encourage respect for diversity. Successful implementation requires strategies that consistently reinforce these values both inside and outside the classroom, enabling students to internalize ethical principles through practice and interaction.

With advances in technology, traditional teaching methods are increasingly complemented or replaced by innovative, technology-supported learning approaches. One such method is the Numbered Heads Together (NHT) model, which is a cooperative learning strategy that emphasizes student collaboration in problem-solving. By assigning specific roles or numbers to each group member, NHT ensures that all students participate actively and share responsibility for group outcomes. This structured interaction encourages students to engage more deeply with the material, discuss ideas critically, and support one another in understanding complex concepts.

The NHT model is particularly effective in promoting active student engagement because it transforms the classroom into a collaborative environment where learning becomes a shared responsibility. Group discussions facilitated by NHT allow students to exchange knowledge, clarify misunderstandings, and build confidence in presenting their ideas. By fostering cooperation and

peer-to-peer learning, this approach not only enhances academic comprehension but also reinforces essential social and moral skills, such as empathy, communication, and accountability. Consequently, integrating NHT with subject learning provides a holistic approach to education, combining cognitive development with character formation, and offers a promising strategy to improve both academic outcomes and personal growth in elementary school students. This is in line with the opinion of (Ratnawatiningsih & Hastuti, 2022) who stated that NHT is effective in increasing cooperation among students, which in turn can strengthen character education.

In addition, incorporating audio-visual media into the learning process has been demonstrated to enhance students' attention and improve their comprehension of complex or abstract concepts. Tools such as videos, animations, and interactive visual materials allow information to be presented in a more concrete and visually appealing way, making it easier for learners to grasp and retain the content. By engaging multiple senses, audio-visual resources create a dynamic learning environment that encourages active participation and sustained focus. These media also help clarify difficult topics, providing visual and contextual cues that support understanding, particularly in subjects like social studies where abstract ideas, historical events, or geographical concepts can be challenging to visualize. Overall, the integration of audio-visual materials into classroom instruction not only enriches the learning experience but also increases motivation, fosters engagement, and promotes deeper comprehension among students. Research by (Azhar & Zainuddin, 2020) shows that the use of audio-visual media can improve understanding of complex concepts in social studies and motivate students to participate more actively in learning activities.

Integrating the Numbered Heads Together (NHT) learning model with audio-visual media has the potential to foster a more dynamic and engaging classroom environment, which in turn supports the development of students' character education. By combining cooperative group activities with visually stimulating materials such as videos and animations, students are encouraged to participate actively, share ideas, and collaborate effectively with their peers. This approach not only enhances comprehension of subject matter but also promotes social skills, responsibility, and respect for others key aspects of character education. The interactive nature of NHT ensures that each student is accountable for contributing to the group's learning, while audio-visual media provides concrete representations of abstract concepts, making lessons more relatable and enjoyable. This integrated strategy strengthens both academic understanding and the cultivation of positive attitudes and behaviors, demonstrating that innovative teaching methods can simultaneously improve learning outcomes and character development in elementary school students. According to (Tanjung & Sibarani, 2020), integrating collaborative learning methods with engaging media will help students not only master the subject matter but also develop positive social skills and character traits, such as cooperation, respect, and responsibility. Therefore, these two approaches are expected to produce more effective learning in the context of social studies teaching in elementary schools.

At Elementary School Gugus 1 in Takalar Regency, there is a pressing need to implement innovative learning strategies to enhance the quality of education and students' character development. Traditionally, social studies lessons have relied heavily on theoretical instruction, which may limit student engagement and understanding. To address this, teaching approaches that actively involve students both cognitively and socially are essential. Integrating the Numbered Heads Together (NHT) cooperative learning model with audio-visual media provides a highly relevant solution. This combination encourages students to participate actively in discussions, collaborate with peers, and engage with the material in a more meaningful way. Audio-visual resources make abstract or complex concepts more accessible, while the NHT model ensures that every student contributes to group problem-solving and idea sharing. Together, these methods foster a dynamic learning environment that not only strengthens comprehension of social studies content but also supports character development, including responsibility, cooperation, and respect for others.

The research problem is how the integration of the Numbered Heads Together model and audio-visual media can improve the quality of social studies learning and support the strengthening of character education at Elementary School Cluster 1 in Takalar Regency. This study aims to analyze the effectiveness of these two approaches in improving student understanding of the subject matter and character. Therefore, the research findings are expected to contribute to the development

of more engaging and effective learning methods in elementary schools. One of the main challenges in teaching social studies is how to create materials that are not only useful but also relevant to students' daily lives. Audio-visual media provides an opportunity to connect learning materials to real-life situations that students can see and hear. This also supports constructivist learning theory, which states that students construct their knowledge through direct experience and social interaction (Nasution, 2018). Therefore, integrating the NHT model with this media is expected to overcome this challenge.

Effective character education requires a holistic approach that encompasses all aspects of student development, including cognitive, affective, and social skills. Research by (Brown, 2018) shows that collaborative learning and the reinforcement of positive values can accelerate student character development. Therefore, this study will examine how the integration of these learning models can facilitate the achievement of these goals, particularly at Elementary School Cluster 1 in Takalar Regency. The Numbered Heads Together (NHT) learning model is a cooperative instructional approach that emphasizes collaboration and social interaction among students. In this model, students are organized into small groups, with each member assigned a number, and work together to complete tasks or solve problems. The teacher then randomly selects a number, and the corresponding student presents the group's results (Cheung & Slavin, 2013). This strategy encourages active participation, accountability, and engagement, as each student is responsible for their group's outcomes. Research indicates that NHT fosters critical thinking, communication skills, and cooperation, contributing not only to academic performance but also to character development, including responsibility, mutual respect, and solidarity (Alimuddin & Fikri, 2020; Amarullah et al., 2024; Fitriani et al., 2025).

Numerous studies have emphasized the effectiveness of the Numbered Heads Together (NHT) model in enhancing students' learning motivation and their grasp of concepts, particularly in subjects that demand critical thinking and in-depth analysis, such as social studies. By organizing students into small groups and assigning specific roles, NHT encourages active participation, accountability, and collaboration, which help learners engage more deeply with the material. This cooperative approach allows students to discuss, question, and explain concepts to one another, fostering a better understanding of complex topics. Research indicates that NHT not only increases students' intrinsic motivation to learn but also improves their analytical and problem-solving abilities. In social studies, where content often involves abstract ideas, historical events, and interconnected social phenomena, NHT provides a structured environment that supports discussion, peer learning, and reflection, ultimately contributing to improved comprehension, higher engagement, and more meaningful learning experiences (Nisa & Surya, 2020; Nurhayati & Prasetyo, 2021). The model allows students to discuss concepts and relate them to real-life situations, creating a more interactive and dynamic classroom environment (Awadin & Hidayah, 2022). Furthermore, NHT diminishes teacher-centered instruction, positioning the teacher as a facilitator while promoting peer-to-peer learning and collaborative problem-solving.

Audio-visual media integrates visual and auditory elements to enhance student understanding and engagement. Such media enables learners to grasp abstract or complex concepts more easily through visualizations, videos, animations, or interactive graphics (Fitriani, 2023). Studies show that audio-visual materials increase motivation, encourage creativity, and improve critical thinking, particularly in social studies, where learners must analyze historical, geographical, and socio-cultural phenomena (Prabowo, 2022; Susanti, 2020). Audio-visual media offers students a multisensory learning experience that strengthens comprehension and bridges classroom concepts with real-world contexts. Through tools such as documentary videos, interactive simulations, and infographics, learners can visualize and internalize complex ideas more effectively. These resources make abstract topics, including historical events, social interactions, and environmental processes, easier to grasp by providing concrete and dynamic representations. By engaging multiple senses sight, hearing, and sometimes touch students are able to process information more deeply and retain it for longer periods. Additionally, audio-visual materials promote active participation and curiosity, allowing learners to explore scenarios, analyze situations, and apply knowledge to practical contexts. This approach enhances both understanding and engagement in the learning process, making lessons more meaningful and impactful (Asih et al., 2025). This approach supports diverse learning styles, enabling auditory, visual, and kinesthetic learners to access information effectively

while increasing engagement and retention.

Character education in elementary schools develops moral and social values such as honesty, discipline, cooperation, empathy, and respect (Hariani et al., 2025; Wibowo, 2024). Both cooperative learning approaches, such as the Numbered Heads Together (NHT) model, and interactive instructional tools like audio-visual media create opportunities for students to actively engage with and practice essential social and emotional skills. By working together in small groups, participating in structured discussions, and sharing responsibility for group tasks, students learn to collaborate effectively, communicate clearly, and develop empathy toward their peers. These experiences not only enhance academic learning but also contribute to the internalization of values such as cooperation, accountability, and respect for diverse perspectives. When character education is integrated into subject lessons, extracurricular activities, and daily interactions with teachers and classmates, students receive repeated and consistent reinforcement of positive behaviors. This holistic approach ensures that ethical principles and social competencies are not taught in isolation but are embedded within practical, real-life learning contexts. Consequently, students develop both cognitive skills and personal qualities that support lifelong learning and responsible citizenship. The combination of structured cooperative learning and engaging multimedia tools thus offers a practical strategy to strengthen character development alongside academic achievement in elementary education settings (Alam et al., 2025; D. Rahmawati, 2021; Rifai & Sari, 2021).

Combining NHT with audio-visual media enhances both learning outcomes and character development. The media serves as an initial stimulus to facilitate understanding, which is then deepened through collaborative group discussion. This integration promotes active engagement, critical thinking, and social skills, as students analyze content, share perspectives, and solve problems collectively (Alam et al., 2025; Ismail et al., 2020; Wijayanti & Harlis, 2024). The approach also supports diverse learning preferences, making learning more inclusive and enjoyable (Fitriani, 2023). In social studies, this integrated method allows students to connect abstract concepts with real-world contexts, strengthens motivation, and nurtures social values such as tolerance, responsibility, and teamwork (R. Rahmawati & Widodo, 2021; Sari et al., 2025). Overall, the NHT model combined with audio-visual media creates a dynamic, collaborative, and character-based learning environment. This integration not only improves comprehension and motivation but also cultivates students' social, emotional, and moral development, making it an effective strategy for modern elementary education.

Method

This study uses a quantitative approach with an experimental design, which aims to test the effect of the integration of the Numbered Heads Together (NHT) model and audio-visual media on social studies learning in elementary schools (Creswell, 2018). The experimental design used is a pre-test post-test control group design, where there are two groups: the experimental group given treatment with the integration of the NHT model and audio-visual media, and the control group that follows conventional learning without the use of both approaches. This design was chosen to measure differences in student learning outcomes before and after treatment. The population of this study was all fifth-grade students at Elementary School Gugus 1, Takalar Regency, in the 2024/2025 academic year who were taking social studies. The sample was drawn using a cluster randomization technique, where two classes with similar characteristics were randomly selected as the experimental group and the control group. Each group consisted of 30 students, resulting in a total sample size of 60 students. Sample selection was carried out by considering the similarity of students' academic abilities to ensure more valid and unbiased research results (Sugiyono, 2019).

The instruments used in this study were a learning outcome test and an observation sheet. The learning outcome test consisted of two parts: a pre-test administered before the learning began to measure students' prior knowledge, and a post-test administered after the learning was completed to measure students' understanding. The test included multiple-choice, short answer, and descriptive questions to measure students' understanding of the social studies material. The observation sheet was used to assess students' activities and interactions during the learning process, particularly in the context of group work and the use of audio-visual media. The research procedure was carried out in several stages, beginning with preparation. At this stage, the researcher conducted initial

observations to determine classroom conditions and the material to be taught. The researcher also prepared learning materials that integrated the NHT model with audio-visual media, such as instructional videos and animations relevant to the social studies topics being studied. Learning in the experimental group used audio-visual media, while the control group followed lecture and discussion methods without these media (Miles et al., 2014).

During the learning implementation phase, students in the experimental group first watched a video or visual presentation that presented social studies material in an engaging and concrete manner. They then engaged in small group discussions using the NHT model, where each student was assigned a number and collaborated to answer questions posed by the teacher. The control group followed traditional learning, where social studies material was delivered through teacher lectures and discussions without the use of audio-visual media. Learning took place over four 90-minute sessions. Data were collected through pre-tests and post-tests, as well as observation sheets filled out by the researchers to record student activities during the learning process. Data obtained from the pre-test and post-test were analyzed using a t-test to determine whether there were significant differences between student learning outcomes in the experimental and control groups. This t-test was used to determine the significant effect of the integration of the NHT model and audio-visual media on student understanding. Descriptive analysis was conducted to describe student interactions and the effectiveness of audio-visual media use during learning (Creswell & Clark, 2018).

To guarantee both the validity and reliability of the research instrument, a content validity assessment was carried out by consulting with experts in social studies as well as experienced teachers. This process ensured that the test items were appropriate, relevant, and aligned with the learning objectives being measured. For reliability, the instrument underwent a pre-test with a group of students who did not participate in the main study. The results of this trial allowed the researchers to evaluate the consistency and stability of the test scores over time, confirming that the instrument could produce dependable data. In addition to technical rigor, the study also prioritized ethical considerations throughout the research process. Permission was formally obtained from both the school administration and the parents or guardians of participating students, ensuring transparency and accountability. Participants' privacy and confidentiality were strictly maintained, and the information collected was solely used for academic research purposes. By combining careful validation, reliability testing, and adherence to ethical standards, the study ensured that the data gathered were both credible and responsibly managed, supporting the integrity and trustworthiness of the overall research findings (Sugiyono, 2023).

Results and Discussion

This study investigates the impact of integrating the Numbered Heads Together (NHT) learning model with audio-visual media on social studies learning at Elementary School Cluster 1 in Takalar Regency (Iswarini et al., 2025). Data collected from pre-tests, post-tests, and classroom observations indicate that the combined use of these approaches significantly enhances students' learning outcomes. Before treatment, the experimental group recorded an average pre-test score of 55.2, while the control group recorded an average of 54.8. These nearly identical scores suggest that both groups began the study with similar levels of understanding of the social studies material. At this stage, students in both groups had not yet achieved sufficient mastery of the topics, highlighting the necessity for a more effective instructional strategy to improve comprehension and engagement (Kibtiyah & Iba, 2022).

The application of the NHT model encourages cooperative learning by requiring students to collaborate in small groups, assign roles, and participate actively in group discussions. When combined with audio-visual media, complex concepts are presented in a more concrete and engaging way, allowing students to visualize and better understand the material (Usmaedi et al., 2022). This dual approach fosters not only cognitive development but also social and communication skills, as students interact, share ideas, and collectively solve problems. Following the intervention, the experimental group demonstrated a notable increase in post-test scores compared to the control group, indicating that the integration of NHT and audio-visual media effectively improved academic performance (Tambun, 2022). Observational data further support

these results, showing higher levels of student participation, motivation, and engagement in learning activities. In conclusion, the study provides clear evidence that combining cooperative learning models like NHT with interactive audio-visual media can significantly enhance learning outcomes in social studies. This approach not only strengthens understanding of the material but also develops students' collaborative skills, responsibility, and overall engagement in the learning process, offering a valuable strategy for elementary education (Kusnaeni et al., 2023).

Following the implementation of the treatment, the post-test results demonstrated a notable improvement in student scores. The experimental group, which participated in learning activities that integrated the Numbered Heads Together (NHT) model with audio-visual media, exhibited a substantial increase in their average post-test score, reaching 82.4. This represents a significant rise from their initial pre-test average of 55.2. In contrast, the control group, which received conventional instruction, showed only a moderate improvement, with their scores increasing from an average of 54.8 to 66.3. These findings suggest that the combination of the NHT model and audio-visual aids is a more effective instructional strategy for enhancing student comprehension (Lestari, 2018).

To evaluate whether the differences observed between the experimental and control groups were statistically significant, a t-test analysis was performed. The results revealed a notable difference in post-test scores, with the experimental group outperforming the control group and achieving a p-value below 0.05. This statistical evidence indicates that the observed improvements in the experimental group were not the result of chance, but rather a direct consequence of the implemented instructional strategies. The combination of the Numbered Heads Together (NHT) cooperative learning model with audio-visual media appears to have effectively promoted greater student engagement, interaction, and collaborative problem-solving. By participating actively in structured group activities and being exposed to dynamic, multimedia-based content, students were able to comprehend the material more deeply. These enhanced learning experiences contributed to the measurable gains in academic performance observed in the post-test results. Overall, the statistical findings support the conclusion that integrating cooperative learning techniques with audio-visual resources provides a meaningful and effective approach to improving both understanding and engagement in social studies education. The evidence underscores the potential for these methods to enhance classroom learning outcomes in elementary school contexts (Andriawan, 2022).

The study highlights the positive impact of employing interactive and multimedia-supported cooperative learning strategies in social studies instruction. By actively involving students in group discussions and supporting their learning with visual and auditory materials, educators can enhance both participation and comprehension (Wulandari et al., 2022). These results underscore the potential benefits of innovative teaching approaches over traditional methods, particularly in fostering higher-order thinking skills and deeper conceptual understanding. Consequently, the research provides strong evidence that incorporating structured cooperative models like NHT, alongside audio-visual resources, can significantly improve learning outcomes and offers a practical framework for educators seeking to optimize instructional effectiveness (Kurnia et al., 2019).

In addition to analyzing test scores, classroom observations conducted during the learning process revealed that students in the experimental group demonstrated higher levels of activity and engagement. The Numbered Heads Together (NHT) model assigns each student a specific number, making them accountable for contributing answers during group discussions. This structure fosters a collaborative and interactive learning environment, encouraging students to share knowledge, discuss ideas, and support one another in understanding the material. The incorporation of audio-visual media, including videos and animations, further enhances the learning experience by making complex social studies concepts more accessible and easier to comprehend (Afandi, 2015).

Observation data indicated that the use of audio-visual aids positively influenced student interest and motivation. Many students appeared more attentive and enthusiastic when engaging with instructional videos covering topics such as Indonesian history and regional geography. These media not only capture students' attention but also provide concrete visual representations of abstract or complex concepts, such as historical events, geographical formations, maps, and diagrams. By offering vivid and dynamic illustrations of the content, audio-visual resources facilitate a deeper understanding of the subject matter and help students retain information more

effectively (Yuanta, 2020).

The findings from classroom observations align with prior research highlighting the benefits of integrating audio-visual tools into teaching practices. Studies suggest that the combination of cooperative learning models like NHT and multimedia resources can improve student participation, comprehension, and overall academic achievement (Hotmaida et al., 2021). In particular, audio-visual media complement cooperative strategies by providing visual and auditory reinforcement, which is especially useful for learners with diverse learning styles. Consequently, the experimental group's increased involvement and enthusiasm during lessons support the conclusion that blending structured cooperative learning with engaging multimedia significantly enhances both student motivation and understanding. This approach demonstrates a practical method for promoting active learning and improving outcomes in social studies education (Hutapea & Gani, 2022).

The activities of the experimental group demonstrated a noticeably higher level of engagement compared to the control group. Students participating in the experimental condition were not only more active in posing and responding to questions during group discussions but also consistently assisted one another in understanding the material. The structured discussions facilitated by the Numbered Heads Together (NHT) model ensured that every student had the opportunity to participate, minimizing the risk of anyone feeling excluded or overlooked. This approach enhanced collaboration and communication skills among students, which are essential components of character development and social competence (Nelli & Hartati, 2018).

Despite these positive outcomes, the study encountered several challenges that warrant attention. One prominent issue was the limited availability of technological devices in certain classrooms. Not all students had equal access to audio-visual learning tools such as instructional videos, animations, or visual presentations, which occasionally constrained the effectiveness of the lessons. Nevertheless, in classrooms where technology was available, the impact on student engagement and interest was clearly evident, demonstrating the motivating power of multimedia-supported learning activities (Putri et al., 2025).

In addition, while the findings suggest that integrating the NHT model with audio-visual media is highly effective for improving student comprehension, the study highlights the importance of teacher preparedness. Some teachers required additional training to confidently and efficiently employ technology in their instruction. This indicates that ongoing professional development is essential for educators to fully leverage the benefits of multimedia and cooperative learning strategies, ensuring lessons remain engaging and pedagogically sound (Rahman & Khaltsun, 2022). Taken together, the results indicate that combining the NHT model with audio-visual media can substantially enhance both student learning outcomes and engagement in social studies lessons. These methods are particularly appropriate in elementary school settings, where cooperative activities and visual aids can reinforce understanding and sustain attention. The collaborative nature of NHT encourages active participation, while audio-visual resources provide clear and dynamic representations of complex content, making learning more accessible and enjoyable for young learners (Rahayu et al., 2025).

The study suggests that broader implementation of this integrated approach could provide substantial benefits for student learning, not only academically but also in terms of social and character development. By promoting active collaboration, critical thinking, and mutual support, students develop essential life skills alongside academic knowledge. Therefore, it is recommended that schools expand the use of the NHT model combined with audio-visual media, while also investing in teacher training and technological infrastructure to maximize the effectiveness of these strategies. Overall, the research underscores the potential of cooperative, multimedia-enhanced learning to improve student outcomes and foster a positive, inclusive classroom environment that nurtures both knowledge and personal growth (Huninhatu et al., 2021).

The findings of this study align with previous research indicating that the Numbered Heads Together (NHT) model effectively enhances students' active participation in the learning process. By assigning specific responsibilities to each student during group discussions, the model ensures that all learners are involved, which promotes deeper comprehension of the subject matter. According to Wibowo, learning approaches that emphasize group discussions, such as NHT, can increase both student motivation and engagement, as learners feel accountable for contributing accurate and meaningful responses within their groups (Silva et al., 2021). In the current study,

students were not passive recipients of information; instead, they actively engaged in analyzing, discussing, and interpreting the content presented. This interactive process encourages collaborative problem-solving and critical thinking, as students must articulate their ideas clearly and respond to their peers' perspectives. Moreover, the structure of NHT fosters a supportive environment in which students can share knowledge, ask questions, and build confidence in their understanding of the material. Overall, these results reinforce the value of cooperative learning models that combine structured participation with accountability, demonstrating that such approaches can effectively improve both comprehension and engagement in classroom learning (Wibowo, 2021).

The notable improvement in learning outcomes observed in the experimental group can also be attributed to the effective use of audio-visual media. Previous research has highlighted that audio-visual tools enhance the learning experience by presenting information in a more visual, contextual, and interactive manner. According to Fitriani, the incorporation of audio-visual resources can facilitate student comprehension, particularly when dealing with complex concepts in subjects like social studies that often require visualization to aid understanding. In the present study, audio-visual media proved especially useful in clarifying materials such as maps, historical timelines, diagrams, and documentary videos, giving students a more concrete and comprehensive understanding of the topics under discussion (Kamid et al., 2022).

Moreover, combining audio-visual media with the Numbered Heads Together (NHT) cooperative learning model contributed to higher levels of student motivation and engagement. Research conducted by Prasetyo indicated that students tend to be more motivated and attentive when participating in interactive learning experiences, particularly those supported by multimedia tools. In the current study, the use of videos and animations not only made social studies lessons more interesting but also enhanced information retention, as students engaged multiple sensory channels simultaneously visual, auditory, and kinesthetic. This multisensory approach allowed learners to process and internalize knowledge more effectively, reinforcing their understanding of key concepts (Listiana, 2024).

The incorporation of audio-visual media within cooperative learning models such as Numbered Heads Together (NHT) offers notable advantages in enhancing students' understanding and enthusiasm for learning. By presenting complex concepts through dynamic visual and auditory representations, students are able to grasp abstract or challenging content more effectively. This approach not only facilitates comprehension but also encourages active engagement, as learners participate collaboratively in discussions, problem-solving, and shared activities. Integrating multimedia elements with structured cooperative methods creates a richer and more stimulating learning environment, where students are motivated to explore, question, and interact with both the material and their peers. Consequently, learners not only develop a deeper understanding of social studies topics but also strengthen essential skills such as teamwork, communication, and critical thinking. Furthermore, using multiple sensory channels visual, auditory, and kinesthetic supports diverse learning styles and promotes retention of knowledge. Overall, this combination of cooperative learning and audio-visual media highlights the practical benefits of employing interactive and technology-enhanced instructional strategies in education, demonstrating that such approaches can improve both academic performance and students' enthusiasm for learning, while simultaneously fostering collaborative and social competencies crucial for holistic development (Nurhayati & Prasetyo, 2021).

Despite the significant improvements observed in this study, several challenges arose during the implementation of the learning program. One notable challenge concerns the reliance on technology, which may not be readily accessible in all schools, particularly in regions with limited availability of electronic devices and internet connectivity. The effective use of audio-visual media in the classroom requires adequate infrastructure to ensure that students can fully benefit from these resources. Without proper access, the potential impact of multimedia-based learning may be diminished. Furthermore, teacher readiness and professional development play a crucial role in optimizing the use of audio-visual tools. Educators need appropriate training to integrate these resources effectively into their teaching, enabling them to create engaging and meaningful learning experiences that enhance student comprehension and participation (Candelia et al., 2022).

In addition to academic benefits, the integration of the Numbered Heads Together (NHT) cooperative learning model with audio-visual media contributes positively to character

development. The NHT model, which emphasizes group collaboration, encourages students to practice cooperation, responsibility, and effective communication. Each student's active participation in group discussions fosters accountability and mutual support, reinforcing social and interpersonal skills (Oktaviani et al., 2023). Complementing this, audio-visual media can introduce students to social, historical, and cultural concepts, thereby promoting values such as diversity, tolerance, and social awareness key components of character education. Observational data from the study indicated that students in the experimental group were more active in expressing their ideas, engaging in discussions, and collaborating effectively with peers. They also demonstrated greater openness to the opinions and perspectives of their classmates, reflecting the development of empathy and collaborative problem-solving skills (Nelli & Hartati, 2018).

The results of this study indicate that integrating the Numbered Heads Together (NHT) cooperative learning model with audio-visual media significantly benefits both student achievement and engagement in social studies. Students in the experimental group not only attained higher academic scores but also showed notable improvements in motivation, teamwork, and critical thinking skills. The combination of these strategies creates an interactive and participatory learning environment, encouraging students to actively contribute to discussions and problem-solving activities (Hidayati et al., 2022). Furthermore, the use of audio-visual resources stimulates multiple senses, making complex concepts more accessible and easier to comprehend. This multisensory engagement helps students internalize knowledge more effectively and supports retention of key information. Overall, the integration of NHT and multimedia not only enhances cognitive understanding but also strengthens social and collaborative competencies, resulting in a more enriching and effective learning experience in the elementary social studies classroom (Kulsum et al., 2023).

The study further suggests that the integration of these methods can be particularly effective in elementary school settings, where young learners benefit greatly from structured collaborative activities and engaging, visually supported content. To ensure the full potential of this approach is realized, schools must invest in adequate technological infrastructure and provide ongoing teacher training. By doing so, the benefits of combining cooperative learning strategies with audio-visual resources can be maximized, leading to improved academic achievement, enhanced social and communication skills, and strengthened character development among students. Ultimately, expanding the use of the NHT model in conjunction with multimedia tools offers a promising pathway for enhancing the quality of education, particularly in social studies, by creating an interactive, inclusive, and stimulating learning environment that nurtures both knowledge and personal growth (Wati & Suarni, 2020).

Conclusion

Based on the findings of this study, it can be inferred that the Numbered Heads Together (NHT) learning strategy, when combined with audio-visual media, proves to be an effective approach for enhancing student learning outcomes at Elementary School Cluster 1 in Takalar Regency. The experimental group that experienced this combined method demonstrated a noticeable improvement in academic performance, achieving a higher average post-test score compared to the control group, which followed conventional teaching methods. The application of the NHT model encourages students to actively engage in collaborative group activities, fostering meaningful interaction and discussion among peers. This collaborative framework enhances student involvement and promotes a sense of shared responsibility in learning tasks. Simultaneously, the integration of audio-visual media serves to clarify and illustrate learning content, allowing students to grasp complex concepts more easily and making the learning process more stimulating and enjoyable. The synergy between NHT and audio-visual media thus creates a more dynamic and motivating learning environment, leading to heightened participation and sustained interest in the subject matter. Moreover, this combined approach not only improves cognitive outcomes but also fosters character development. Through group collaboration and active participation, students are able to develop essential skills such as effective communication, teamwork, and accountability, which are vital components of character education. These aspects demonstrate that learning strategies integrating cooperative methods and multimedia resources can provide holistic benefits, addressing both academic

achievement and personal growth. In light of these results, it is recommended that the NHT learning model complemented by audio-visual media be implemented more broadly in elementary school settings. Such application has the potential to enhance the overall quality of learning, support student engagement, and foster the development of key social and collaborative competencies. Consequently, adopting this method can serve as a valuable strategy for educators aiming to create a more interactive, effective, and character-oriented learning experience.

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