

The Effectiveness of Cooperative Methods and Interactive Digital Media on Elementary School Learning Interest

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ABSTRACT

In the digital age, the learning process must innovate to maintain students' optimal learning interest. Students tend to be more engaged in learning that involves interactive digital media than in conventional teacher-centered methods. This study aims to analyze the effectiveness of cooperative learning and the use of interactive digital media in enhancing the learning interest of elementary school students. The method used is qualitative with a literature review approach through the analysis of relevant scientific sources from journals, books, and academic publications. Data were analyzed using content analysis by examining and comparing the results of previous studies. The findings indicate that cooperative learning is effective in increasing student participation, collaboration, and learning engagement. Furthermore, interactive digital media such as animations, quizzes, and educational videos have been proven to make learning more engaging and reduce student boredom. The combination of these two approaches consistently enhances students' learning interest at the elementary school level. Thus, it can be concluded that the integration of cooperative learning and interactive digital media is effective in creating active, interactive learning experiences that align with the characteristics of students in the digital age.

Keywords: Cooperative methods, interactive digital media, learning interest, elementary school, literature review.

INTRODUCTION

The educational process is the process of gaining knowledge and value for the benefit of human personal qualities. The successful educational process is determined by the curriculum applied, as well as by the learning process in the classroom. The preparation of adaptive pedagogical standards and inclusive governance policies are the main guidelines in realizing equality and safety in the school environment (Darmawan, 2023a; Masfufah & Darmawan, 2023). The learning process that takes place in the classroom is held by the teacher who is in charge of selecting and utilizing the right learning media (Ramadhan & Darmawan, 2025). The presence of direction and guidance from competent teachers is the main driving force in fostering students' learning independence in the midst of the massive digital era development (Darmawan & Musonawawi, 2026). The continuity of learning in the classroom requires students to be active so that the material is not only accepted but also understood in depth. Thus, factors such as interest in learning are needed to increase student motivation which will later support students to be active in every learning process.

The phase where students begin to build character and habits as well as a good attitude towards their independent learning activities is in the elementary education phase. Efforts to instill moral values and character formation of children from an early age should ideally also be supported by a multidisciplinary educational approach, intensive counseling guidance, strengthening family religiosity, and the creation of a conducive school ecosystem (Hariyani et al., 2021; Rahayu et al., 2025; Rojak et al., 2024). The age of elementary school children is an age that is active and wants to know many things, so learning models that use visualization and interactive will more easily attract students' desire to learn. Children's interest in visual-based content is in line with the tendency of the modern young generation to be very responsive to popular cultural products and digital impressions in their daily lives (Kurniawan & Khayru, 2021). The pattern of children's interaction with the digital world is also greatly influenced by a fundamental understanding of the characteristics of individual behavior in a group or organization (Darmawan, 2013). The task of a teacher is to build an interesting and varied learning environment so that students have the desire to be involved in learning and feel comfortable in the learning process. Teachers play a role in designing and managing learning strategies to realize success in the learning process that depends on the teacher's ability (Alfaaza & Darmawan, 2025). Through strategies that adjust the characteristics and stages of student development, a successful learning process will be achieved through the active involvement of students in the learning process.

Students who can concentrate and cultivate interest in learning materials indicate that the student has an interest in learning in him. This interest in learning is very important because student participation in learning activities will arise with this factor without coercion from outside factors. Learning interest also plays a role in encouraging students' desire to engage in learning activities at school on various learning materials (Darmawan et al., 2026a). The increase in academic involvement is triggered by mastering the digital literacy dimension and the optimal use of learning media by students (Rizal & Darmawan, 2024; Kholid & Darmawan, 2023; Zahid & Darmawan, 2025). Ease of access to technological instruments and equal ownership of digital skills are considered very effective in bridging the gap in opportunities in the field of education and the future world of work (Arifin & Darmawan, 2021). In addition, social media currently also plays a crucial role as the main channel in the distribution and dissemination of various scientific education publications in cyberspace (Darmawan & Fajar, 2024). The necessary interest in learning can arise through several reasons, such as a supportive learning environment, a good experience in the learning process that students have, and the psychological condition of each individual student. If we look at the humanistic perspective by Abraham Maslow and Carl Rogers, it is stated that with the fulfillment of students' basic needs, students' interest in

learning will increase. With the fulfillment of student needs such as a sense of security, appreciation and a feeling of acceptance in the learning environment, students' curiosity and enthusiasm for carrying out the learning process will arise.

Cooperative learning can be understood as a learning model with cooperation between small groups of students to achieve shared learning goals. Through this approach, students' interest in learning will increase because effectively student involvement will be encouraged during the learning process. Lev Vygotsky (1978) who proposed the theory of constructivism stated that social interaction between each individual will form a new knowledge. The pattern of social interaction of the community in the current digital era has shifted towards virtual communication, where public involvement in the digital space is also vulnerable to the threat of disinformation and the spread of hoaxes (Darmawan, 2021; Rojak, 2023; Sinambela, 2022). The condition of this dynamic digital public space has also triggered new challenges related to the enforcement of political ethics in the communication patterns of figures on social media, as well as the need for the use of blockchain technology systems as an instrument of decentralized social order for the reconfiguration of democracy (Al Hakim & Irfan, 2023; Darmawan & da Silva, 2025). Therefore, strengthening social competence and mastering technical aspects is fundamental to prepare a generation that is ready to face the dynamics of the work environment mediated by digital technology (Mendonca et al., 2021). The concept of cooperative learning is where students in one group discuss their ideas and work together. Indicators contained in the cooperative learning model that encourage students to be involved in the learning process are individual responsibility, group cooperation, positive interaction, socialization skills, and group evaluation.

In addition to the learning methods that need to be chosen correctly, the selection of learning media must also be appropriate. Because by selecting models and media that match the required student capacity, it will be able to determine the success of learning (Almaghfiroh & Darmawan, 2025). One alternative that can support learning to be more interesting is interactive digital media. The integration of digital innovation is not only applied in the non-formal education sector for inclusive social progress, but is also widely adopted in organizational management for sustainable human resource development (Warin, 2022; Mardikaningsih & Wardoyo, 2024). The advantages of interactive digital media include attractive visualization, easy use, and high interactivity. In addition to increasing material understanding, the wise use of digital media and social networks has been proven to be able to direct students to expand their knowledge about green management, foster environmentally friendly attitudes, and strengthen digital literacy based on religious values in order to maintain good mental health and social behavior (Khayru et al., 2025; Stuart et al., 2025a). By implementing this medium, students will be able to actively interact with the learning material as well as get quick responses, which will allow students to understand the material more deeply. This macro digital transformation ultimately has a major influence on the shift in work design due to automation, the emergence of new social classes in the digital era, strengthening digital leadership for team efficiency, to the need to guarantee legal aspects of student data protection and the validity of artificial intelligence-based electronic contracts (Darmawan, 2022, 2023b; Gani et al., 2025; Irfan et al., 2024; Scott, et al., 2025b; Maulani et al., 2023; Osean et al., 2024).

Based on the previous description, it can be understood that both the application of learning methods and the use of media contribute to optimizing students' learning interests. However, in its implementation, many learning processes have not utilized varied models and interactive media, so that the potential for students' learning interests is less than optimal. Therefore, this study examines the impact of the implementation of cooperative learning with digital media instruments on students' learning interests. It is hoped that research can contribute to understanding and help create interesting learning.

METHOD

This study uses a qualitative approach with the type of literature review to analyze the effectiveness of the use of cooperative learning methods and interactive digital media in optimizing students' learning interests in elementary education. Data sources are obtained from various scientific references, such as national and international journals, proceedings, books, and other academic publications. Online searches of various journal databases and digital libraries are carried out using appropriate keywords, and use Google Scholar to obtain valid, reliable, and up-to-date sources. The data analysis applied is content analysis, which is the systematic review, comparison, and interpretation of information from various literatures. This stage includes the identification of main ideas, variable indicators, and research findings, then continued with the preparation of patterns, equations, and differences in study results to produce conceptual conclusions. The results of the analysis show that the application of cooperative learning methods with interactive digital media is effective in fostering students' interest in learning.

RESULTS AND DISCUSSION

1. The Effectiveness of Cooperative Methods on Students' Learning Interests in Elementary Schools

a. Rahmawati *et al.* (2025)

The quantitative research carried out at SD 3 Pedawang seeks to find the level of effectiveness of the STAD model and its influence on students' interests and learning outcomes in science subjects. The data analysis methods applied were normality, homogeneity, *paired sample t-test*, *independent sample t-test*, and N-Gain calculation. It was found that the STAD model plays a significant role in increasing students' interest and learning outcomes.

b. Indriyani dan Syofyan (2023)

The purpose of conducting this survey quantitative study is to explore insights about the *cooperative make a match model* and its role in increasing students' interest in learning. The entire population was selected as a sample with a saturated sampling technique of 26 VA class students. Data was collected through questionnaires, then analyzed by applying t-tests. Through the results of the analysis, it was found that the *make a match* model affects students' learning interests.

c. Rama dan Hawa (2026)

The data in the study were obtained from questionnaires, observations and interviews in grade II of SDN Gedanganak 03. The purpose of the research is to analyze the *Think Pair and Share* learning model and Media *Spin Neptune* in increasing students' interest in learning. The study applied the pretest-posttest control group design to the selected sample through *purposive sampling*. The data was then analyzed by validity, reliability and t-test, so that we obtained findings stating that the learning model had an impact on increasing learning interest.

d. Sartika *et al.* (2025)

The quantitative study carried out at SDN 141 Palembang seeks to find the impact of the *make-a-match type cooperative learning model* to optimize the interest in multiplication learning of grade II students. The sample in this study was determined to be 27 students, and data was obtained from observation, questionnaire and documentation, which were analyzed through validity, reliability and t-test. The result obtained was the discovery of an increase in students' interest in learning through the application of the *make a match* model.

e. Pratidina *et al.* (2025)

The main purpose of this study is to examine the application of a *STAD-type cooperative learning* model with *puzzle media* in increasing students' interest in learning. The research was subject to grade IV students of SDN 98 Palembang, with a sample of 58 students selected through *purposive sampling*. Data was collected through a learning interest measurement instrument, which was then analyzed through a t-test to obtain results if the students' interest in learning mathematics increased with the application of the STAD learning model.

f. Squirting (2026)

Experimental quantitative research located at SDN 104215 Sudirejo seeks to find the impact of the *Cooperative Integrated Reading and Composition learning model* to foster students' interest in learning Indonesian. The population involved all students of the study subject with a sample of 35 students from *purposive sampling*. Data was collected through pretest, posttest and questionnaire instruments as well as documentation which was then analyzed through validity, reliability and normality tests. Through the results of the analysis, it was found that students' interest in learning increased and was influenced by the application of the learning model.

g. Sandy dan Mala (2025)

The main purpose of the quantitative research carried out at SDN Grudi III Ngawi is to find students' learning interests from the implementation of the *make a match* cooperative model. With the pre-experimental method of one group design, the author collects data by pre-test on the research subject group. The population was dispersed as many as all students of class V and a sample of 24 students was selected through a total sampling technique. The data is then analyzed through validity tests and instrument trials. It can be understood through the findings of the research that the *cooperative model of make a match* that is applied, has a positive impact on students' interests and learning outcomes.

h. Hamsah *et al.* (2020)

With the application of an experimental quantitative method, the goal of this study is to find the impact given after implementing the NHT cooperative model in increasing students' interest in learning. The population of this study involved all students of SD Negeri Maccini II Makassar, and the application of *random sampling* to obtain samples. The data collected through the questionnaire was analyzed and the results were obtained that the NHT model had a positive impact on students' learning interests.

i. Lutfin dan Purwati (2022)

The study was carried out at SD Negeri 27 Bulu Dua, Soppeng District using an experimental quantitative approach, trying to find the impact given after the application of the Bamboo Dancing cooperative model whether it had anything to do with students' learning interests. The population involved all students of the research subject as well as the research sample. The data collected through the questionnaire was analyzed through normality tests and descriptive statistical analysis, and the findings were obtained that the Bamboo Dancing cooperative learning model in Indonesian subjects increased students' interest in learning.

j. Nur'aini *et al.* (2022)

Finding the impact of the application of the *Teams Game Tournament* cooperative learning model on the level of interest and student learning outcomes is the main focus to be achieved in this study. Through an experimental quantitative approach, the study carried out at SD Muhammadiyah 10 Palembang involved grade V students as research subjects and the research population and research sample, which amounted to 47 students and was selected using the *purposive sampling* technique. Data were collected through test instruments, which were then analyzed by tests of validity, reliability and normality of

homogeneity. As a result, it is known that the application of *the Teams Game Tournament* cooperative learning method has a positive impact on students' learning interests.

2. The Effectiveness of Interactive Digital Media on Students' Learning Interests in Elementary Schools.

a. Oniwati (2025)

The study with a quantitative approach of this survey aims to examine the impact of reading literacy accompanied by digital learning for the level of students' learning interest in SDN 2 Lebakparahiang. The population of 25 students at a time was selected by saturated sampling technique. Data through questionnaires were analyzed multiple regressions and obtained results that reading literacy and digital learning have a significant impact that increases students' interest in learning.

b. Rahmayanti *et al.* (2024)

A quantitative approach study with a quasi-experimental design carried out at SD Muhammadiyah 1 Menganti Gersik seeks to understand the correlation between the use of Educaplay interactive quizzes to improve students' interest and learning outcomes. A sample of 28 students was selected by *purposive sampling*, contributing to the selection of data from the test and questionnaire. The analysis used validity, reliability, normality, and linearity tests, as well as linear regression complemented by t-tests and f-tests. It was found that Educaplay's interactive quizzes positively affected students' levels of learning interest and learning outcomes.

c. Aulya *et al.* (2024)

The study applied a quasi-experimental quantitative design to test the effectiveness of the use of Powtoon animation digital media in increasing students' interest and learning outcomes. A sample of 20 grade IV students from *the purposive sampling technique*, SDN Jatimulya 01 became the experimental group and SDN Lebakgowah 01 became the control group. Data through observation, documentation, learning interest questionnaires, and pretest-posttests. Analysis with normality, homogeneity, t-test, and gain score tests. Found that the use of Powtoon media has proven to be effective and has a positive influence on improving students' interest and learning outcomes.

d. Kirom (2025)

The research with a quantitative approach using a correlational method analyzes the impact of the implementation of motion graphic-based animation video media for students' SKI learning interests at MI Hubbul Wathon Pandaan. The sample of 26 grade III students was determined through *purposive sampling* techniques and questionnaire instruments that have gone through validity and reliability tests, and are supported by observation activities. Data analysis uses simple linear regression. The use of *motion graphic animation video media* has an influence on students' interest in learning.

e. Dyana (2025)

A quantitative approach with a quasi-experimental design was carried out to assess the effectiveness of interactive learning media for the learning outcomes and interests of Cikakak State Elementary School students. The subjects of 80 students were divided into two groups, namely 40 students in the experimental group using the E-Book and 40 students in the control group using printed books. Data from observations, documentation, tests, and learning interest questionnaires, including the implementation of pre-test and posttest. Analysis through descriptive and inferential statistical techniques. It was found that the use of interactive media has been shown to increase students' motivation and interest in learning.

f. Kasman dan Ilham (2025)

The study examines the impact of the realization of interactive learning media on the mathematics learning interest of elementary school students. The quantitative approach was carried out by dividing the experimental and control groups. Data was obtained from learning interest tests, observations, and interviews, then statistically analyzed. It was found that interactive media positively increased students' interest in learning.

g. Worang *et al.* (2025)

The author examines the impact of implementing Kahoot digital media and learning motivation for learning interests. The quantitative approach involves the entire population as a sample. The questionnaire is used as a tool for data collection and correlation and regression analysis. The results of the study show that the use of Kahoot and the level of learning motivation have a significant influence on students' learning interests, both individually and simultaneously.

h. Khasanah (2022)

This study aims to analyze the impact of the use of learning media on the learning interest of PAI subjects in elementary school. All students as research samples filled out a closed questionnaire supported by documentation. The analysis was carried out using the chi-square test to see the relationship between variables. It was found that learning media plays a role in increasing students' interest in learning, so that it can increase attention, involvement, and motivation in participating in learning.

i. Wati *et al.* (2025)

This study analyzes the implementation of Quizizz interactive learning media for the learning interests of SDN Talabiu students. The quantitative approach was designed with a quasi-experimental pre-test and post-test design involving an experimental group using Quizizz and a conventional control group. The population of 48 students was all used as a sample by filling out a learning interest questionnaire. The data is also supported through documentation and observation analyzed tests of normality, homogeneity, and comparison between groups showing the findings that the use of Quizizz increases students' interest in learning.

j. Wafiqni dan Adelia (2025)

The study looked for the impact of the Educaplay platform on the learning interests of grade IV students. A pre-experimental method with a single-group pretest-posttest design was applied. The research population was 175 students, and from the 22 sample students data was collected through questionnaires. Test the validity of the instrument through expert judgment, and reliability using Alpha Cronbach. assisted by SPSS. It was found that the application of Educaplay increased interest in learning.

3. The Effectiveness of Cooperative Methods on Students' Learning Interests in Elementary Schools

<i>Researcher</i>	<i>Location</i>	<i>Study Focus</i>	<i>Study Results</i>
<i>Rahmawati et al. (2025)</i>	SD 3 Pedawang.	STAD for learning interests and learning outcomes	STAD positively influences learning interests and learning outcomes.
<i>Indriyani & Syofyan (2023)</i>	SDN Tanjung Duren Selatan 05	The Make a Match model and its impact on learning interests	There is an impact of the make a match learning model on students' learning interests.

<i>Rama & Eve (2026)</i>	SD Negeri Gedanganak 03	Think, Pair, and Share (TPS) with Spin Neptune media to increase students' interest in learning	The interest in learning is greater in classes that use TPS.
<i>Sartika et al. (2025)</i>	SD Negeri 141 Palembang	Make a Match type learning for students' multiplication learning interests	Make A Match increases students' interest in learning multiplication
<i>Pratidina et al. (2025)</i>	SD Negeri 98 Palembang	STAD has puzzle media to optimize interest in learning mathematics	STAD, with the help of puzzle media, succeeded in increasing interest in learning.
<i>Squirting (2026)</i>	State Elementary School 104215 Sudirejo	Integrated Reading and Composition Model for students' learning interests	The application of Integrated Reading and Composition has a good effect on students' learning interests
<i>Sandy & Mala (2025)</i>	S.S. Grudo III	Make a Match for students' learning interests	Make a match affects students' learning interests and learning outcomes.
<i>Hamsah et al. (2020)</i>	SDN Maccini II Makassar City	The Numbered Heads Together (NHT) model in influencing students' learning interest	The NHT model has a positive impact on students' learning interests.
<i>Lutfin & Purwati (2022)</i>	SD Negeri 27 Bulu Dua, Soppeng Regency	Bamboo Dancing model to increase students' interest in learning Indonesian	Students' interest in learning is influenced by the
<i>Nur'aini et al. (2022)</i>	SD Muhammadiyah 10 Palembang	Teams Games Tournament (TGT) for interests and learning outcomes	The model affects learning interests.

4. The Effectiveness of Interactive Digital Media on Students' Learning Interests in Elementary Schools

<i>Researcher</i>	<i>Location</i>	<i>Study Focus</i>	<i>Study Results</i>
<i>Oniwati (2025)</i>	SDN 2 Lebakparahiang.	Reading literacy and digital learning on students' learning interests	The variables studied had a positive impact on learning interests.
<i>Rahmayanti et al. (2024)</i>	SD Muhammadiyah 1 Menganti Gresik	Educaplay media for the learning interests and learning outcomes of	Educaplay users are more interested in following the learning process.

		elementary school students.	
<i>Aulya et al. (2024)</i>	SDN Lebakgowah 01, and SDN Jatimulya 01.	Powtoon animation digital media for students' interests and learning outcomes	The variables studied had an impact on learning outcomes and interests.
<i>Kirom (2025)</i>	Shawn Watson is a Pandaan.	Motion graphic animation video media has an effect on students' learning interests.	Motion graphic animation video media plays a role in learning interest
<i>Dyana (2025)</i>	Sci-Fi Public Schools	E-books as a medium to increase students' interest and motivation to learn	E-Books have a great effect on students' interest and motivation to learn.
<i>Kasman & Ilham (2025)</i>	SDN 26 Dompu.	The influence of interactive learning media on students' interest in learning mathematics.	Interactive media influences the interest in learning.
<i>Worang et al. (2025)</i>	Catholic Elementary School 03 Brother Don Bosco Manado.	The effectiveness of Kahoot digital media and learning motivation for students' learning interests	Both have a significant effect on increasing students' interest in learning
<i>Khasanah (2022)</i>	SDN Dukuh 02, Sidomukti District, Salatiga City	ICT media for students' learning interests	ICT media significantly increases students' interest in learning
<i>Wati et al. (2025)</i>	SDN Talabiu, Woha District, Bima Regency.	Animated video media to increase the learning interest of elementary school students.	Students' interest increases when learning using animated videos.
<i>Wafiqni & Adelia (2025)</i>	MI Pembangunan Syarif Hidayatullah Jakarta	Educaplay to foster the interest in learning of elementary school students.	Educaplay effectively increases students' overall interest in learning.

A number of previous studies indicate that cooperative learning can increase students' interest in learning. This approach seems to invite students to actively communicate, interact, and build group cooperation during the learning process. Findings from Rahmawati *et al.* (2025) strengthens a similar argument by explaining the results of STAD compared to conventional methods. Similar findings were also put forward by Indriyani and Syofyan (2023) and Sartika *et al.* (2025), which found that *the Make a Match* model increases students' interest in learning. In addition, the research of Rama and Hawa (2026) proves that *the Think, Pair, and Share* (TPS) model is effective in significantly growing students' interest in learning,

especially in experimental groups. These findings show that a cooperative approach consistently encourages the formation of a sense of responsibility between students in learning activities.

In addition, the use of interactive digital media, such as online-based quizzes, educational applications, and animated videos has been proven to be able to vary the way of learning to be more interesting, while adjusting different student characteristics. Supported by the findings of Dyana (2025) which shows the fact that interactive media is very effectively implemented in the classroom. In line with that, Kasman and Ilham (2025) also found a significant increase in interest in learning through the use of interactive media. Worang *et al. research* (2025) also revealed that media such as Kahoot plays a role in increasing students' interest in learning. Meanwhile, Khasanah (2022) emphasized that learning media plays a positive role in increasing student attention, engagement, and motivation to learn. From the various results of these studies, it is understood that the combination of cooperative learning methods with interactive digital media is able to increase student involvement, participation, and interest in learning. A variety of approaches like this is needed so that the learning process is not monotonous and can accommodate the diverse needs of students (Darmawan et al., 2026b).

Every student has a driving factor to undergo the learning process, the factor in question can come from within or outside. One of the factors that is categorized as an external factor is the determination of cooperative learning strategies with digital media. In practice in the field, the accuracy of the selection of learning methods and the variations in their application play a big role in optimizing the absorption of material by students (Mardikaningsih, 2014). In addition, mastery of qualified digital literacy is also recognized as the main pillar in boosting the quality of modern education in the era of information disclosure (Kurniawan et al., 2021; Ghozali et al., 2024). In line with that, the theory stated by Vygotsky (1978), emphasizes that learning occurs in a social interaction and cooperation between individuals. Various previous studies have also shown that the combination of cooperative methods in tandem with interactive digital media plays a role in generating motivation, involvement and specialization of students in learning materials. The application of this kind of blended learning system has proven to be effective in triggering students' critical thinking skills in dealing with technological complexity (Darmawan et al., 2024). In addition, the integration of digital technology should ideally be balanced with the cultivation of strong moral education so that students' digital creative expression continues to run in harmony and responsibly (Darmawan & Sagita, 2026).

The findings of the study show that the application of interactive learning method innovations is able to increase the level of students' interest in learning, by combining cooperative learning strategies and the use of interactive digital media. Cooperative learning helps students engage in the learning process through cooperation and group discussions, while interactive digital media creates a strengthening of learning understanding that is interesting and relevant to the learning context. This combination is in line with efforts to foster sustainable behavior change in society through education and public awareness improvement from an early age (Gautama & Mardikaningsih, 2022). This general awareness also includes ensuring legal protection of children's rights in the field of education, as well as growing citizens' legal awareness in community life (Hariani et al., 2021; Rojak, 2021). The integration of these two approaches has been proven to be able to liven up the learning atmosphere and increase students' interest in learning at the elementary school level. The implications of this study emphasize the importance of the role of teachers in integrating cooperative learning with interactive digital media as facilitators who design collaborative activities according to student characteristics. This preparatory step is crucial to improve the

skills and readiness of the younger generation in facing the challenges of the future era of artificial intelligence and big data processing (big data) (Essa et al., 2024; Zahid et al., 2025). On the other hand, schools need to support through the provision of digital facilities and teacher training so that learning technology can be used optimally. The provision of sustainable digital infrastructure at various agency scales is an absolute prerequisite, whose implementation must be based on ethical principles, managerial accountability, and anticipation of the risk of algorithmic bias in technology implementation (Gani & Darmawan, 2022; Mardikaningsih & Oluwatoyin, 2023; Khayru, 2025). In the end, the foundation of this adaptive and technology-based education is projected to be able to produce a young generation that has academic resilience and mature readiness to face the dynamics of the globalization era

CONCLUSION

Cooperative learning supported by interactive digital media has proven to be effective in increasing students' interest in learning. The cooperative method increases the enthusiasm, cooperation, and involvement of students to discuss and participate in learning activities, while interactive digital media reduces boredom by providing reinforcement of interesting learning understanding through animation, visuals, and audio. By combining the two, the learning atmosphere becomes active and interactive and in accordance with student development. Teachers are required to be creative in combining cooperative techniques and interactive digital media to increase students' interest in learning.

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