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Developing a Cooperative Think Pair Share Learning Model to Foster Ethical Reasoning and Critical Thinking in the Digital Era

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Abstract

The rapid advancement of Artificial Intelligence in education has created a growing need for instructional models that foster students' critical thinking and ethical awareness. However, the use of the Think Pair Share model to promote ethical Artificial Intelligence literacy remains limited. This study aims to formulate a conceptual reconstruction of the Think Pair Share instructional model to foster ethical Artificial Intelligence literacy and students' critical participation through a literature review. The study employed a qualitative approach using content analysis of scholarly journal articles, books, and academic documents related to the Think Pair Share model, Artificial Intelligence literacy, cooperative learning, and ethics education. The data were analyzed through the stages of identification, classification, interpretation, and thematic synthesis to formulate a conceptual framework for reconstructing the instructional model. The findings resulted in a reconstructed Think Pair Share instructional model that integrates ethical Artificial Intelligence literacy into each instructional phase by strengthening critical evaluation of information, ethical reflection in decision-making, argumentative collaboration, and responsible academic communication. This reconstruction extends the function of the Think Pair Share model from a cooperative learning strategy to an instructional framework that supports the development of ethical Artificial Intelligence literacy and students' critical participation in the digital era. The findings provide a conceptual foundation for developing instructional designs that are responsive to the educational challenges of the digital era.

INTRODUCTION

The rapid advancement of digital technology and Artificial Intelligence has transformed various aspects of education, including teaching and learning processes, access to information, and the ways students construct knowledge. Learning is no longer centered on the one-way transmission of knowledge from teachers but instead positions students as active participants who explore, analyze, and construct knowledge through the use of digital technologies (Imran & Almusharraf, 2024). This transformation requires students not only to acquire academic knowledge but also to develop critical thinking, effective communication, collaboration, and the ability to

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use technology responsibly and ethically. At the same time, the widespread accessibility of digital information has introduced new challenges, including the increasing risk of misinformation, the misuse of technology, and the inappropriate use of Artificial Intelligence in academic and everyday contexts.

In the context of twenty-first-century education, critical thinking has become one of the essential competencies that should be systematically fostered through the learning process. This competency involves the ability to analyze information from multiple sources, evaluate the validity of evidence, compare different perspectives, and formulate logical, evidence-based arguments. Critical thinking also enables students to navigate the complexity of digital information, which is often dynamic, contradictory, and unreliable (Hidayat et al., 2025). Therefore, instructional practices should be designed to encourage students to think independently, engage in reflective reasoning, and make informed decisions based on critical evaluation of available information.

In addition to critical thinking, strengthening ethical awareness in the use of digital technology has become increasingly important in the era of Artificial Intelligence. The expanding use of digital technologies presents various challenges, including plagiarism, information manipulation, and excessive reliance on Artificial Intelligence-based systems to complete academic tasks. Consequently, education should foster ethical Artificial Intelligence literacy by promoting an understanding of the appropriate use of technology, respect for intellectual property rights, academic integrity, and responsibility in creating and disseminating digital information (Rizqi, 2026). Accordingly, learning should not only aim to enhance students' academic competence but also cultivate individuals who are capable of using technology critically, responsibly, and in accordance with ethical principles.

Active student participation is a fundamental prerequisite for achieving meaningful learning. Teacher-centered instruction tends to limit students' opportunities to express their ideas, engage in discussion, and develop critical thinking skills and self-confidence (Us'an et al., 2026). In contrast, learning environments that promote interaction, collaboration, and academic dialogue can enhance students' learning motivation while fostering communication skills, creativity, and problem-solving abilities. Therefore, instructional models should be designed not only to improve students' mastery of subject matter but also to develop character, twenty-first-century competencies, and responsibility in the ethical use of technology.

Within this context, the Think Pair Share cooperative learning model represents a relevant instructional approach because it provides students with opportunities to construct knowledge through individual reflection, collaborative discussion, and open sharing of ideas (Us'an et al., 2026). These characteristics enable students to develop critical thinking, communication, and collaboration skills in an integrated manner while strengthening their academic responsibility in presenting and defending arguments. Accordingly, Think Pair Share serves not only as a cooperative learning strategy but also as a potential instructional framework for fostering ethical Artificial Intelligence literacy through learning activities that emphasize reflection, argumentation, and academic interaction.

The strength of Think Pair Share lies in its ability to create a learning environment in which every student has the opportunity to think independently before engaging in collaboration with peers. This process encourages students to critically evaluate information, compare multiple perspectives, construct logical arguments, and communicate their ideas responsibly. These characteristics make Think Pair Share particularly relevant for addressing educational challenges in the era of Artificial Intelligence, especially by promoting critical thinking, collaboration, academic communication, and ethical awareness in the use of digital technologies.

Previous studies have consistently demonstrated the positive impact of the Think Pair Share model on improving the quality of learning. The model has been shown to enhance student engagement, learning motivation, academic achievement, and critical thinking skills (Kamaliah, 2017; Kamil et al., 2021). At the same time, the advancement of Artificial Intelligence has created new opportunities to improve instructional effectiveness, learning efficiency, and information, media, visual, and digital literacy (Addin & Nelisa, 2025; Ramadani & Desriyeni, 2025). Nevertheless, the integration of Artificial Intelligence into education also requires careful attention to ethical issues, particularly those related to academic integrity, responsible technology use, and the ethical application of Artificial Intelligence-based tools in learning (Wilis et al., 2026). Collectively, these studies indicate that both Think Pair Share and Artificial Intelligence have considerable potential to support twenty-first-century learning, although they have generally been investigated as separate areas of inquiry.

Despite these advances, studies integrating the Think Pair Share model with the development of ethical Artificial Intelligence literacy remain limited. Most previous research has examined Think Pair Share primarily as a strategy for improving student engagement, learning motivation, academic achievement, or critical thinking, whereas studies on Artificial Intelligence have largely focused on its effectiveness in enhancing learning and strengthening digital literacy. Consequently, few studies have proposed a conceptual reconstruction of Think Pair Share as an instructional framework that systematically integrates critical thinking, ethical Artificial Intelligence literacy, critical participation, and academic responsibility within a single instructional design. This research gap provides the foundation for the present study.

In response to this gap, this article proposes a conceptual reconstruction of the Think Pair Share instructional model by integrating ethical Artificial Intelligence literacy into each instructional phase to address the challenges of education in the digital era. This reconstruction is expected to contribute theoretically to the development of a more humanistic, adaptive, and context-responsive cooperative learning model while also providing practical guidance for educators in designing learning experiences that foster not only subject-matter mastery but also critical thinking, collaboration, communication, and students' ethical responsibility in the use of Artificial Intelligence. Accordingly, this study aims to formulate a conceptual reconstruction of the Think Pair Share instructional model to promote ethical Artificial Intelligence literacy and students' critical participation through a literature review.

METHODS

This study employed a qualitative approach using content analysis to formulate a conceptual reconstruction of the Think Pair Share instructional model for fostering ethical Artificial Intelligence literacy and students' critical participation (Engkizar et al., 2025; Ghasemi, 2023; Langputeh et al., 2023; Selvi, 2019). The data consisted of scholarly journal articles, books, conference proceedings, and academic documents relevant to the Think Pair Share model, cooperative learning, critical thinking, ethics education, Artificial Intelligence literacy, and twenty-first-century learning. The literature was identified through a systematic search using keywords such as *Think Pair Share*, *cooperative learning*, *critical thinking*, *digital ethics*, *Artificial Intelligence literacy*, and *twenty-first-century learning* (Efendi et al., 2026; Hernando et al., 2023). The selected sources were screened based on their relevance, recency, and contribution to the conceptual development of ethical and critical learning.

The data were analyzed through four stages: identification, classification, interpretation, and thematic synthesis. The analysis focused on identifying key

concepts, comparing findings from previous studies, and synthesizing the literature to develop a conceptual framework for reconstructing the Think Pair Share instructional model. This reconstructed framework integrates ethical Artificial Intelligence literacy into instructional practices by strengthening critical evaluation of information, ethical decision-making, argumentative collaboration, responsible academic communication, and students' critical participation. To ensure the trustworthiness of the findings, the analysis involved repeated reading, systematic comparison across the selected literature, and continuous verification of conceptual consistency throughout the synthesis process (Engkizar et al., 2026; Yunan, 2017). This approach enabled the development of a systematic, transparent, and theoretically grounded conceptual framework relevant to the educational challenges of the digital era.

RESULT AND DISCUSSION

The Implementation of the Think Phase in Think Pair Share for Critical Learning

The think phase in the Think Pair Share (TPS) instructional model constitutes the initial and fundamental stage in fostering students' critical thinking skills. At this stage, students are given sufficient time to reflect individually on a problem or question posed by the teacher before engaging in discussion with a partner or a larger group. This activity encourages students to think deeply, critically evaluate the information available to them, and formulate preliminary ideas or arguments based on their own understanding. Critical thinking extends beyond the mere recall of information; it requires students to analyze evidence, distinguish between relevant and irrelevant information, and draw logical and well-supported conclusions. This perspective is consistent with the findings of Rahmadina, who reported that the TPS model effectively develops critical thinking indicators, including providing explanations, formulating problem-solving strategies, and drawing conclusions from information generated throughout the think, pair, and share stages (Valianty & Hardini, 2019).

In the context of the digital era, the role of the think phase can be expanded by integrating digital literacy and technology-based information evaluation. Students are encouraged not only to identify solutions to a given problem but also to evaluate the credibility of information sources, compare search engine results with scholarly references, and critically examine the reliability of outputs generated by Artificial Intelligence systems. Such integration is increasingly important because many students rely on digital tools, including search engines, Artificial Intelligence applications, and online content, as their primary sources of information when completing academic tasks. This approach is supported by educational literature demonstrating that collaborative learning models, including Think Pair Share, effectively enhance information literacy when students actively analyze, verify, and evaluate digital information before sharing and discussing it with their peers (Hernando et al., 2023).

Empirical evidence also supports the contribution of the think phase to the development of critical thinking skills. For example, a study conducted in elementary schools found that the Think Pair Share model significantly improved students' critical thinking by encouraging them to formulate and organize their ideas independently before entering the pair stage of discussion. This process provided a solid foundation for more meaningful, reflective, and productive discussions. The study further demonstrated a measurable improvement in students' critical thinking skills following the implementation of Think Pair Share, particularly in terms of their ability to analyze information and synthesize ideas beginning from the think phase (Marsela et al., 2024).

Further evidence from various educational settings indicates that the implementation of Think Pair Share enables students to develop a deeper understanding of learning materials through the think phase. Studies across different educational levels have shown that this initial stage of individual reflection encourages students to critically evaluate information, consider multiple possible solutions, and formulate hypotheses before engaging in discussion or collaboration with their peers. Such practices are consistent with the principles of twenty-first-century education, which emphasize higher-order thinking skills, including analysis, evaluation, and reflective reasoning based on available evidence (Isnaini et al., 2025).

The think phase also contributes to the enhancement of digital literacy when combined with activities that require students to validate digital information sources and critically evaluate the use of Artificial Intelligence technologies (Suhada et al., 2025). When students are asked to obtain information from digital sources and subsequently assess its credibility and accuracy before discussing it during the pair and share stages, they develop not only critical thinking skills but also responsible habits in the use of digital technologies. In this context, the think phase serves as a foundational stage that integrates cognitive skills with digital ethics, ensuring that the outcomes of the Think Pair Share process extend beyond identifying correct answers to developing a more comprehensive, reflective, and meaningful understanding of the learning content.

Accordingly, the think phase should not be viewed merely as the initial step of the Think Pair Share model but rather as a critical instructional stage that prepares students to think critically and act ethically. This phase aligns closely with the objectives of twenty-first-century education by fostering critical thinking, digital literacy, and the ability to evaluate and apply information in increasingly complex learning environments. Moreover, strengthening activities during the think phase enhances the effectiveness of the subsequent pair and share stages, as students enter collaborative discussions with well-developed ideas and evidence-based arguments, thereby making classroom interaction more productive, meaningful, and academically rigorous.

The Pair Phase as a Strategy for Collaboration and Communication

The pair phase in the Think Pair Share (TPS) instructional model represents a collaborative stage that plays a crucial role in determining the quality of students' learning interactions. During this phase, students are given the opportunity to compare the ideas they have developed individually during the think phase and engage in pair discussions to strengthen, refine, or challenge their initial perspectives. Rather than serving merely as an exchange of opinions, pair discussions constitute a form of social learning that involves interpersonal communication, argumentation, and the negotiation of shared understanding. This is consistent with findings indicating that cooperative learning models such as Think Pair Share enhance students' communication skills by encouraging them to articulate their ideas, listen actively to their partners, and formulate logical responses as part of meaningful academic dialogue (Lubis & Maysarah, 2025).

Pair discussions also enable students to explore perspectives that may differ from their own initial viewpoints. This process encourages students not only to defend their original opinions but also to critically and openly consider alternative arguments. Within the context of ethical learning, this stage provides opportunities for students to develop respect for differing opinions, respond to others in a respectful manner, and strengthen the social competencies required for effective teamwork. Empirical research conducted in primary and secondary education has demonstrated that the Think Pair Share model enhances students' collaborative and social skills, particularly in terms of mutual support, respect for others' perspectives, and professional academic discussion (Ribut, 2021).

Beyond its social dimension, the pair phase also allows students to evaluate the quality of the arguments and information sources they use. During discussion, partners are encouraged to question the basis of each other's claims, examine the credibility of supporting evidence, and critically assess how information is interpreted. This process of evaluating arguments is particularly important in digital learning environments where students encounter information from diverse sources, including online content whose credibility may be uncertain. According to Valeriano et al (2011), discussion-based activities such as those implemented during the pair phase strengthen students' abilities to evaluate information and construct evidence-based arguments, enabling them to distinguish relevant and reliable information from inaccurate or insufficient sources.

From the perspective of digital ethics, pair discussions also encourage students to promote the responsible use of information. For example, when one student relies on digital content without acknowledging its source or uses Artificial Intelligence tools without verifying the accuracy and credibility of their outputs, a partner can critically evaluate such practices based on shared principles of academic integrity. These interactions serve two complementary purposes: first, they strengthen healthy academic collaboration; and second, they cultivate ethical awareness in the responsible exchange and use of digital information. Research on cooperative learning further suggests that the Think Pair Share model enhances students' awareness of ethical principles governing the use of technology in education, including respect for copyright, intellectual property, and the integrity of academic content (Azizah & Mashar, 2021).

Overall, the pair phase extends beyond a collaborative learning strategy and serves as a fundamental stage for developing both scientific competencies and ethical awareness. Pair discussions integrate critical thinking, logical argumentation, effective communication, and respect for diverse perspectives within a structured learning environment. Through guided interaction, students learn to express their ideas clearly, critically evaluate competing arguments, and engage in constructive and respectful academic communication. These characteristics explain why the Think Pair Share model is widely recognized as an effective instructional approach for promoting twenty-first-century learning by simultaneously strengthening cognitive, social, and ethical competencies.

The Share Phase for Strengthening Students' Confidence in Expressing Ideas and Promoting Digital Ethics

The share phase in the Think Pair Share (TPS) instructional model represents a critical stage that provides students with the opportunity to present the outcomes of their individual thinking and collaborative discussions to the entire class. During this phase, students are expected not only to provide answers but also to explain the reasoning behind their responses, describe their thought processes, and justify the information and evidence used to support their arguments (Fahrullisa et al., 2018). Consequently, the share phase serves as an essential component of the learning process by enabling students to communicate their ideas systematically, present logical arguments, and assume academic responsibility for the outcomes of their discussions before both the teacher and their peers. Within the context of critical learning, this phase strengthens students' confidence in expressing their opinions because they have already engaged in individual reflection during the think phase and refined their ideas through collaborative discussion in the pair phase. As a result, students present well-developed and evidence-based arguments rather than offering spontaneous opinions without adequate justification.

The share phase also plays a significant role in enhancing students' communication skills. As students present the outcomes of their discussions to the class, they learn to organize their ideas coherently, select appropriate academic

language, explain concepts clearly, and respond effectively to questions from both teachers and classmates. Such communication competencies are essential in twenty-first-century education, where students are expected not only to understand subject matter but also to communicate their understanding effectively to others. Khairunisa & Basuki (2021) reported that the Think Pair Share cooperative learning model contributes significantly to the development of students' communication skills by providing structured opportunities to think independently, engage in collaborative discussion, and articulate ideas through active learning processes. Therefore, the share phase can be regarded as a structured environment for practicing academic communication, enabling students to express their ideas in a logical, respectful, and evidence-based manner.

Beyond improving communication skills, the share phase also strengthens students' confidence in expressing their opinions publicly. Many students possess valuable ideas but hesitate to speak in front of the class because they fear making mistakes, lack self-confidence, or have limited experience participating in open academic discussions. The Think Pair Share model helps reduce these barriers by allowing students sufficient time to reflect individually and discuss their ideas with a partner before presenting them to the class. Kamil et al (2021) demonstrated that the implementation of the Think Pair Share model positively influences students' learning motivation and academic achievement, thereby encouraging more active participation in classroom learning. In this respect, the share phase functions as an effective means of building students' self-confidence, as they present ideas that have already been refined and strengthened through collaborative discussion rather than relying solely on their initial individual responses.

In the context of ethical learning in the digital era, the share phase serves not merely as a presentation activity but also as a platform for cultivating students' academic responsibility. Students should be encouraged to present accurate information, acknowledge the sources they use, and clearly distinguish between their personal opinions, the outcomes of collaborative discussions, and information obtained from digital resources or Artificial Intelligence systems. This practice is increasingly important because technological advancements enable students to obtain answers rapidly, yet not all information generated by digital tools can be accepted without critical verification. Ramadani & Desriyeni (2025) reported that Artificial Intelligence has the potential to improve students' learning experiences by facilitating access to information and increasing learning efficiency. Nevertheless, the effective use of Artificial Intelligence must be accompanied by the ability to evaluate the credibility of information and to use such technologies responsibly. Therefore, the share phase should encourage students not only to present their conclusions but also to explain how the information was obtained, verified, and applied within an academic context.

The share phase also plays a pivotal role in fostering students' digital ethical awareness. As students present the outcomes of their discussions, teachers can guide them to acknowledge information sources appropriately, avoid plagiarism, and demonstrate honest and responsible use of digital technologies. Such awareness is essential because the increasing use of Artificial Intelligence applications, such as ChatGPT, in academic settings may raise ethical concerns when these technologies are used without sufficient understanding or clear guidelines. Ramadani & Desriyeni (2025) emphasized that the ethical use of ChatGPT in academic environments requires stronger Artificial Intelligence literacy as well as well-defined principles for its responsible implementation. Accordingly, the share phase provides an effective opportunity to cultivate digital ethics by encouraging students to be transparent about the sources of their information and accountable for the ideas they communicate.

In instructional practice, teachers can further strengthen the share phase by establishing clear academic guidelines before students present the outcomes of their discussions. For example, students may be required to identify the references they consulted, explain why particular sources are considered credible, and disclose whether they used digital technologies or Artificial Intelligence tools during the preparation of their responses. Such practices help students recognize that the use of technology is not inherently inappropriate; rather, it should be approached critically, ethically, and responsibly. Consequently, the share phase extends beyond a conventional presentation activity by fostering sound academic practices, including proper citation, respect for intellectual property, and the recognition that outputs generated by Artificial Intelligence should not be claimed as entirely original personal work.

The share phase also facilitates open evaluation of students' ideas. As students present the outcomes of their discussions, classmates are encouraged to provide questions, comments, and constructive feedback on the arguments presented. This interactive process reinforces critical learning by demonstrating that ideas should remain open to examination, revision, and improvement through academic dialogue. In this context, the classroom becomes a collaborative learning community in which students learn to accept criticism, refine their arguments, and provide stronger evidence to support their claims. Such practices are fully aligned with the cooperative principles of the Think Pair Share model, which emphasizes collaboration, communication, and shared responsibility throughout the learning process. Accordingly, the share phase contributes to the development of a participatory, reflective, and intellectually open learning culture that values diverse perspectives.

The relationship between the share phase and digital ethics becomes even more significant when learning activities involve online information sources and Artificial Intelligence technologies. Students can be encouraged to compare information obtained from textbooks, scholarly articles, digital media, and Artificial Intelligence-generated responses before presenting their findings to the class. During presentations, teachers may ask students to justify their choice of sources, evaluate the credibility of the information used, and distinguish between ideas derived from external resources and their own critical analysis. Such practices enable students to understand that digital literacy encompasses not only the ability to access information but also the capacity to evaluate, apply, and communicate information responsibly and ethically. Consequently, the share phase serves as an integrative learning environment that simultaneously promotes communication skills, critical thinking, digital literacy, and academic responsibility.

Overall, the share phase of the Think Pair Share model makes a substantial contribution to strengthening students' confidence in expressing their ideas while fostering digital ethical awareness. This phase equips students with the ability to communicate confidently, present well-reasoned arguments, and take responsibility for the information they use and disseminate. In the context of the digital era, the share phase can be further developed to emphasize academic integrity, information validation, appropriate source attribution, and the responsible use of Artificial Intelligence. Therefore, the share phase should be regarded not merely as the final step of the Think Pair Share model but as an essential instructional stage for cultivating students who are communicative, critical, ethically responsible, and capable of using digital technologies with integrity.

Think Pair Share in the Development of Critical Thinking

The Think Pair Share (TPS) instructional model has been consistently identified in the literature as an effective approach for fostering students' critical thinking skills through a sequence of structured learning activities. The think phase provides students with opportunities to reflect independently on a given problem,

identify relevant information, distinguish between relevant and irrelevant ideas, and formulate preliminary responses. This stage is fundamental because critical thinking begins with an individual's ability to examine and evaluate information independently before comparing it with the perspectives of others. Empirical studies have demonstrated that the implementation of the Think Pair Share model significantly improves students' critical thinking skills in subjects such as mathematics and science, as evidenced by higher critical thinking test scores following the implementation of TPS compared with students' performance prior to instruction (Pangemanan, 2021).

Furthermore, the pair phase provides an essential mechanism through which students can examine and refine their arguments through collaborative discussion with a partner. These pair discussions enable students to broaden their understanding, articulate the reasoning underlying their ideas, and recognize both the strengths and limitations of the arguments they present. Such collaborative dialogue plays a crucial role in developing evaluative thinking, particularly students' ability to consider alternative viewpoints and make more informed and well-reasoned judgments. Research conducted in several primary schools has likewise reported significant improvements in the critical thinking skills of students who learned through the Think Pair Share model compared with those taught using conventional instructional methods. These improvements include enhanced abilities to analyze information, evaluate evidence, and solve problems logically (J. Yani et al., 2024).

The integration of critical thinking through the Think Pair Share model can be further strengthened within digital learning environments and the use of Artificial Intelligence technologies. When students encounter information generated from the internet or Artificial Intelligence applications, they are encouraged not merely to accept the responses at face value but to critically examine them through individual analysis, collaborative discussion during the pair phase, and reflective presentation during the share phase. This process enables students to develop both digital literacy and critical thinking competencies by moving beyond passive acceptance of machine-generated outputs toward validating, interpreting, and evaluating the credibility and quality of information sources used in their discussions and presentations. Such an approach reflects the primary objective of critical learning in the digital era, where the ability to evaluate information critically and make logical, evidence-based decisions has become an essential competency for twenty-first-century learners.

Overall, the findings of this literature review indicate that the Think Pair Share model is effective not only in enhancing students' academic critical thinking skills but also in developing their ability to evaluate information analytically and defend their ideas in public through reasoned argumentation. These competencies are particularly important in contemporary learning environments characterized by the widespread availability of digital information and Artificial Intelligence technologies. With its clearly structured instructional phases, the Think Pair Share model represents a highly relevant pedagogical framework for promoting the comprehensive and sustainable development of critical thinking skills.

The Contribution of Think Pair Share to Ethical Learning

The development and implementation of the Think Pair Share (TPS) instructional model makes a significant contribution to ethical learning because each phase of the model embodies essential values such as responsibility, honesty, respect for others' perspectives, and openness in expressing ideas. Ethical learning extends beyond understanding the distinction between right and wrong; it also encompasses students' habits in handling information, interacting with peers, and taking academic responsibility for their ideas and learning outcomes. During the think phase, students are encouraged to reflect independently, reducing the tendency to copy peers' responses or rely entirely on technological assistance. In the pair phase, students learn to appreciate their partners' viewpoints through collaborative discussion, while

the share phase encourages them to present their ideas honestly, transparently, and responsibly. This instructional process is consistent with the findings of Khairunisa & Basuki (2021), who reported that the Think Pair Share model provides meaningful opportunities for students to develop communication skills through structured processes of individual thinking, paired discussion, and classroom presentation.

The ethical contribution of Think Pair Share is particularly evident during the pair phase, where students engage not only in exchanging answers but also in developing respectful academic communication. Pair discussions require students to listen actively, respond thoughtfully, challenge ideas constructively, and reach mutual understanding through balanced dialogue. Within this context, ethical learning is reflected in students' willingness to respect differing opinions, refrain from imposing their own views, avoid claiming others' ideas as their own, and provide constructive criticism using appropriate academic language. These practices are especially important in the digital era, where students can obtain answers rapidly but may have limited experience engaging in meaningful academic dialogue or justifying the sources of their information. Through the pair phase, students are encouraged to compare information they have gathered independently with their partners' perspectives, thereby facilitating clarification and verification before presenting their conclusions during the share phase. Isnaini et al (2025); Yani (2022) further demonstrated that students participating in Think Pair Share exhibited stronger communication skills than those taught using comparison instructional models within the context of their study.

The contribution of Think Pair Share to ethical learning becomes even more significant in the context of digital technology and Artificial Intelligence. Today, students can obtain answers almost instantly through online resources and Artificial Intelligence applications. However, this convenience may create academic challenges if students lack the ability to verify, evaluate, and appropriately acknowledge the sources of the information they use. Ramadani & Desriyeni (2025) reported that the use of Artificial Intelligence positively influences the effectiveness and efficiency of students' learning, particularly by improving access to information, supporting the completion of academic tasks, and enabling more personalized learning experiences. Nevertheless, these benefits should be guided by ethical principles to ensure that students use Artificial Intelligence as a learning support tool rather than as an unquestioned source of answers. Accordingly, students should be encouraged to critically evaluate, verify, and take responsibility for information generated through Artificial Intelligence technologies (Sani & Abdulmumini, 2025; Tlili et al., 2023).

Digital ethics within the Think Pair Share model can be further strengthened by encouraging students to acknowledge information sources, explain how information was obtained, and distinguish between their own ideas, the outcomes of collaborative discussions, and content generated with technological assistance. During the share phase, students should be encouraged to explain not only *what* conclusions they reached but also *how* those conclusions were developed and *where* the supporting information originated. Such practices are increasingly important because the academic use of generative Artificial Intelligence tools, such as ChatGPT, requires transparency, accountability, and critical awareness. Al-Mughairi & Bhaskar (2025) found that university students viewed ChatGPT as a valuable academic support tool that nevertheless requires human oversight and responsible use. Their study also emphasized the importance of academic responsibility, critical verification of Artificial Intelligence-generated information, and the need to strengthen Artificial Intelligence literacy through clear institutional guidelines.

Overall, the Think Pair Share model can be positioned as an instructional framework that promotes not only students' cognitive development but also their academic character and ethical responsibility. Through this model, students learn to

think independently, evaluate ideas collaboratively, communicate their opinions respectfully, and assume responsibility for the information they use and disseminate. In ethical learning contexts, teachers can further strengthen Think Pair Share by implementing simple academic guidelines, such as requiring every answer to be supported by evidence, ensuring that digital information is verified before use, and encouraging students to disclose how Artificial Intelligence tools contributed to their work. These practices position Think Pair Share as a highly relevant instructional model for fostering academic integrity in the digital era by encouraging students to become not only active learners but also honest, critical, and responsible users of information and digital technologies.

Implications for Teachers and Instructional Practice

The findings of this literature review indicate that the Think Pair Share (TPS) instructional model has significant practical implications for teachers in designing twenty-first-century learning environments that emphasize active participation, critical thinking, collaboration, communication, and digital ethics. In this context, teachers are no longer expected to function solely as transmitters of knowledge but rather as facilitators who guide students to think critically, engage in meaningful dialogue, evaluate information, and communicate their ideas responsibly. The Think Pair Share model is particularly suitable for this purpose because its structure is simple, flexible, and adaptable across a wide range of subject areas. The think phase provides opportunities for independent reflection, the pair phase facilitates collaborative discussion and verification of ideas, and the share phase promotes academic communication while fostering students' responsibility for the arguments they present. These findings are supported by Wulandari (2021), who demonstrated that the Think Pair Share model contributes to the improvement of students' communication skills through structured cooperative learning activities.

Within digital learning environments, teachers can further enhance the effectiveness of Think Pair Share by integrating Artificial Intelligence literacy into each instructional phase. During the think phase, teachers may present inquiry-based questions that require students to analyze information critically before verifying digital sources or comparing responses obtained from multiple references. During the pair phase, students can collaborate to evaluate whether the information they have gathered is credible, relevant, and academically justifiable. Finally, in the share phase, students present the results of their analyses while acknowledging their information sources and explaining whether Artificial Intelligence tools were used during the learning process. Such integration is particularly important because Yang et al (2022); Yaumi (2024) found that Artificial Intelligence can enhance the effectiveness and efficiency of learning; however, its implementation should strengthen rather than replace students' critical thinking processes.

Teachers should also establish clear guidelines regarding the use of Artificial Intelligence within Think Pair Share-based learning activities. These guidelines may include defining appropriate boundaries for the use of Artificial Intelligence, requiring students to verify Artificial Intelligence-generated outputs, prohibiting the direct copying of responses without critical understanding, and emphasizing the importance of acknowledging all information sources (Alouzi et al., 2026; Baroud et al., 2025; Engkizar, Jaafar, Hamzah, Syafril, Febriani, et al., 2026). Such guidance is essential because students need to recognize that Artificial Intelligence is a learning support tool rather than a substitute for independent thinking. Zhang (2022) emphasized that although university students generally demonstrate positive perceptions of the ethical use of ChatGPT, there remains a strong need to strengthen Artificial Intelligence literacy and establish clear institutional guidelines for its responsible use in academic settings. Accordingly, teachers play a strategic role in fostering critical awareness, responsibility, transparency, and academic integrity in

students' use of Artificial Intelligence technologies (Dwivedi et al., 2021; Efendi et al., 2026; Engkizar et al., 2026; Yao, 2022).

Another important implication of developing the Think Pair Share model is the need for teachers to design learning questions that extend beyond factual recall by encouraging reasoning, analysis, comparison, and reflection. Questions that require only factual answers are likely to prompt students to seek immediate responses from the internet or Artificial Intelligence applications, whereas analytical questions encourage them to use technology as a supporting resource that must still be critically evaluated. For example, teachers may ask students to compare information from multiple sources, evaluate the strengths and limitations of Artificial Intelligence-generated responses, or justify why particular information is considered credible and appropriate for academic use. Through such practices, Think Pair Share evolves beyond a simple discussion technique into a comprehensive instructional framework that guides students to evaluate information critically, construct evidence-based arguments, and make informed academic decisions.

Furthermore, teachers can use the Think Pair Share model as a means of assessing the learning process rather than focusing exclusively on final learning outcomes. Assessment may include students' ability to formulate ideas during the think phase, the quality of collaboration and mutual respect demonstrated during the pair phase, and their ability to communicate ideas clearly while acknowledging information sources during the share phase. This form of assessment aligns closely with the goals of twenty-first-century education, which emphasize not only cognitive achievement but also critical thinking, communication, collaboration, and academic character. By evaluating students' performance throughout the entire Think Pair Share process, teachers can gain deeper insights into whether students genuinely understand the learning content, collaborate effectively, and demonstrate ethical responsibility in the use of digital information.

Overall, the implementation of the Think Pair Share model offers valuable implications for teachers and instructional practice by promoting learning environments that are more active, humanistic, and responsive to the demands of the digital era. Teachers can adopt Think Pair Share as a strategy for creating classrooms characterized by dialogue, openness, collaboration, and shared responsibility. Through this model, students learn not only to complete academic tasks but also to think before speaking, discuss ideas before drawing conclusions, and communicate their arguments in accordance with the principles of academic integrity. By integrating digital literacy and Artificial Intelligence literacy into every stage of the learning process, Think Pair Share provides a balanced instructional framework that enables teachers to harness technological innovation while preserving the human values that remain fundamental to meaningful education.

CONCLUSION

This study demonstrates that the literature consistently supports the potential of the Think Pair Share (TPS) cooperative learning model to foster students' critical thinking, collaboration, communication, and ethical learning in the digital era. The think phase promotes independent thinking and critical evaluation of information, the pair phase strengthens argumentation skills and respect for diverse perspectives, while the share phase develops students' confidence in expressing ideas, academic responsibility, and ethical awareness in the use of digital information and Artificial Intelligence. Through its structured instructional sequence, the Think Pair Share model extends beyond improving students' mastery of subject content by fostering digital literacy, academic integrity, and the twenty-first-century competencies required in contemporary education.

Based on these findings, teachers are encouraged to implement the Think Pair Share model consistently by integrating digital literacy and ethical Artificial

Intelligence literacy throughout each stage of the instructional process while continuously monitoring and assessing students' critical thinking, collaboration, and ethical behavior. Future research should undertake empirical investigations to examine the impact of the Think Pair Share model on students' critical thinking and digital ethical competence in authentic classroom settings, thereby providing stronger empirical evidence regarding the effectiveness of the proposed conceptual framework. With appropriate implementation, the Think Pair Share model has the potential to serve as a humanistic and adaptive instructional approach that equips students with the competencies needed to address the challenges of twenty-first-century education.

REFERENCES

Addin, H. S., & Nelisa, M. (2025). Pemanfaatan Gemini Artificial Intelligence (AI) sebagai Sarana Pendukung Literasi Informasi bagi Mahasiswa Departemen Ilmu Informasi dan Perpustakaan. *Jurnal Pustaka AI (Pusat Akses Kajian Teknologi Artificial Intelligence)*, *5*(1), 101–105. https://doi.org/10.55382/jurnalpustakaai.v5i1.956

Al-Mughairi, H., & Bhaskar, P. (2025). Exploring the factors affecting the adoption AI techniques in higher education: insights from teachers' perspectives on ChatGPT. *Journal of Research in Innovative Teaching and Learning*, *18*(2), 232–247. https://doi.org/10.1108/JRIT-09-2023-0129

Alouzi, K., Atia, A., Omran, S., Alrumayh, S., Albshkar, H., Alatrish, E., Masuwd, M., & Alfallah, B. (2026). AI and Cultural Sensitivity: Student Perceptions of How AI Handles Religion, Identity, and Tradition in Texts. *Muaddib: Journal of Islamic Teaching and Learning*, *2*(1), 1–21.

Azizah, A. A. M., & Mashar, A. (2021). Analisis Pembelajaran Kooperatif Tipe Think Pair Share Pada Mata Pelajaran Matematika Kelas III Sekolah Dasar. *JENIUS (Journal of Education Policy and Elementary Education Issues)*, *1*(2), 54–64. https://doi.org/10.22515/jenius.v1i2.3329

Baroud, N., Ardila, Y., Akmal, F., & Sabrina, R. (2025). Opportunities and Challenges for Islamic Education Teachers in Using Artificial Intelligence in Learning. *Muaddib: Journal of Islamic Teaching and Learning*, *1*(2), 1–11. https://doi.org/https://muaddib.intischolar.id/index.php/muaddib/article/view/6

Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Duan, Y., Dwivedi, R., Edwards, J., Eirug, A., Galanos, V., Ilavarasan, P. V., Janssen, M., Jones, P., Kar, A. K., Kizgin, H., Kronemann, B., Lal, B., Lucini, B., … Williams, M. D. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, *57*, 101994. https://doi.org/10.1016/j.ijinfomgt.2019.08.002

Efendi, E., Jaafar, A., & Engkizar, E. (2026). Muslim Women's Leadership in Conflict Management in Higher Education. *Tadris: Jurnal Keguruan Dan Ilmu Tarbiyah*, *11*(2), 826–838. https://doi.org/https://doi.org/10.24042/tadris.v11i2.30474

Engkizar, E., Jaafar, A., Alias, M., Guspita, B., & Albizar, R. (2025). Utilisation of Artificial Intelligence in Qur'anic Learning: Innovation or Threat? *Journal of Quranic Teaching and Learning*, *1*(2), 1–17. https://joqer.intischolar.id/index.php/joqer/index

Engkizar, E., Jaafar, A., Hamzah, M. I., Syafril, S., Febriani, A., Oktavia, G., & Satrial, A. (2026). Quran Teachers' Skills as Pedagogical Foundations: Conceptual and Practical Insights into Nine Competencies. *Muaddib: Journal of Islamic Teaching and Learning*, *2*(1), 22–38.

Engkizar, E., Jaafar, A., Hamzah, M. I., Syafril, S., Oktavia, G., Febriani, A., & Albizar, A. (2026). Tartil Method as an Effective Strategy for Transforming Students' Positive Attitudes in Learning the Qur'an. *Journal of Quranic Teaching and Learning*, *2*(1), 50–63.

Fahrullisa, R., Putra, F. G., & Supriadi, N. (2018). Pengaruh Model Pembelajaran Kooperatif Tipe Think Pair Share (TPS) berbantuan Pendekatan Investigasi terhadap Kemampuan Komunikasi Matematis. *NUMERICAL: Jurnal Matematika Dan Pendidikan Matematika*, *4*(2), 145. https://doi.org/10.25217/numerical.v2i2.213

Ghasemi, P. (2023). A Qualitative Study on the Impact of Continuous Assessments on Students' Academic Self-Confidence. *Journal of Study and Innovation in Education and Development*, *3*(3), 1–8. https://doi.org/10.61838/jsied.3.3.1

Hernando, M. J., Reponte-Sereño, R. R., Cuevas, G. C., & Pacaldo, J. (2023). Think-Pair-Share: A Strategy for Effective Student-Engaged Literature Classes. *International Journal of English Language Studies*, *5*(4), 32–44. https://doi.org/10.32996/ijels.2023.5.4.4

Hidayat, T., Sari, I., & Noviani, D. (2025). Pengaruh Literasi Digital Terhadap Kemampuan Berpikir Kritis Peserta Didik di Era Society 5.0. *Jurnal Multidisiplin West Science*, *4*(08), 1404–1415. https://doi.org/10.58812/jmws.v4i08.2589

Imran, M., & Almusharraf, N. (2024). Google Gemini as a next generation AI educational tool: a review of emerging educational technology. *Smart Learning Environments*, *11*(1), 22. https://doi.org/10.1186/s40561-024-00310-z

Isnaini, Z., Fardani, M. A., & Pratiwi, I. A. (2025). Implementation of Think Pair Share Model Assisted by E-Cergam Media to Improve Critical Thinking Ability of Elementary School Students. *Edukasi*, *19*(2), 49–58. https://doi.org/10.15294/edukasi.v19i2.31649

Kamaliah, K. (2017). Penerapan Model Pembelajaran Think Pair Share Untuk Meningkatkan Aktivitas Belajar Siswa Di Kelas V SD Negeri No. 056614 Sidorejo Semester Genap T.A 2015/2016. *Jurnal Guru Kita PGSD*, *1*(2), 128. https://doi.org/10.24114/jgk.v1i2.6319

Kamil, V. R., Arief, D., Miaz, Y., & Rifma, R. (2021). Pengaruh Penggunaan Model Pembelajaran Kooperatif Tipe Think Pair Share terhadap Motivasi dan Hasil Belajar Belajar Siswa Kelas VI. *Jurnal Basicedu*, *5*(6), 6025–6033. https://doi.org/10.31004/basicedu.v5i6.1744

Khairunisa, R. W., & Basuki. (2021). Perbandingan Kemampuan Komunikasi Matematis Siswa antara Model Pembelajaran Kooperatif Tipe TPS dan CIRC. *Plusminus: Jurnal Pendidikan Matematika*, *1*(1), 113–124. https://doi.org/10.31980/plusminus.v1i1.881

Langputeh, S., Andika, S., Ulfah, O., & Agusti, F. A. (2023). A Content Analysis: Values of Islamic Marriage in the Movie of Ayat-Ayat Cinta. *International Journal of Multidisciplinary Research of Higher Education*, *6*(3), 106–114. https://doi.org/10.24036/ijmurhica.v6i3.142

Lubis, A. P., & Maysarah, S. (2025). Pengaruh Model Pembelajaran Kooperatif Tipe Think Pair Share terhadap Kemampuan Komunikasi dan Pemecahan Masalah Matematis. *Jurnal Pendidikan Matematika Dan Sains*, *13*(Special_issue), 92–101. https://doi.org/10.21831/jpms.v13iSpecial_issue.88788

Marsela, M., Azaini, S. N., Yuliyati, S., Firmansyah, R., & Hasibuan, A. R. G. (2024). Peningkatan Kualitas Pembelajaran Berpikir Kritis melalui Model Think Pair Share (TPS) dalam Perspektif Pendidikan Islam di Sekolah Dasar. *Al-Mau'izhoh*, *6*(1), 789–805. https://doi.org/10.31949/am.v6i1.8690

Pangemanan, N. S. (2021). Penerapan Think Pair Share (TPS) untuk Meningkatkan Kemampuan Berpikir Kritis, Motivasi, dan Hasil Belajar Matematika SMP. *Jurnal Pendidikan Matematika Dan Sains*, *7*(2), 68–73.

https://doi.org/10.21831/jpms.v7i2.26822

Ramadani, E., & Desriyeni, D. (2025). Dampak Artificial Intelligence (AI) terhadap Proses Pembelajaran Mahasiswa Program Studi Perpustakaan dan Ilmu Informasi Universitas Negeri Padang. *Jurnal Pustaka AI (Pusat Akses Kajian Teknologi Artificial Intelligence)*, *5*(1), 89–93. https://doi.org/10.55382/jurnalpustakaai.v5i1.950

Ribut, O. (2021). Pengaruh Model Pembelajaran Kooperatif Think Pair Share (TPS) Pada Prestasi matematika Siswa Sekolah Menengah Pertama. *JURNAL JENDELA PENDIDIKAN*, *1*(1), 1–6. https://doi.org/10.57008/jjp.v1i1.1

Rizqi, M. R. (2026). Analisis Pengaruh Penggunaan Artificial Intelligence (AI) terhadap Pemikiran Kritis Mahasiswa Program Studi Sistem Informasi Universitas Mahakarya Asia. *Jurnal Inovasi Komputer (INOKOM)*, *2*(2), 1–10. https://doi.org/10.71200/inokom.v2i2.201

Sani, A., & Abdulmumini, M. D. (2025). The Role of Artificial Intelligence (AI) and Digital Technology in Authenticating and Preserving Hadith Literature. *Middle East Journal of Islamic Studies and Culture*, *5*(02), 122–129. https://doi.org/10.36348/mejisc.2025.v05i02.002

Selvi, A. F. (2019). Qualitative content analysis. In *The Routledge handbook of research methods in applied linguistics* (pp. 440–452). Elsevier. https://doi.org/10.1016/B978-0-12-818630-5.11031-0

Suhada, J., Ibnurhus, G. A., & Muhamad, F. (2025). Meningkatkan Kesadaran Kritis terhadap Konten Digital dan Tantangan Etika dalam Pemanfaatan AI pada SMK PKP 1 Jakarta. *Kesejahteraan Bersama : Jurnal Pengabdian Dan Keberlanjutan Masyarakat*, *2*(4), 155–168. https://doi.org/10.62383/bersama.v2i4.2438

Tlili, A., Shehata, B., Adarkwah, M. A., Bozkurt, A., Hickey, D. T., Huang, R., & Agyemang, B. (2023). What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education. *Smart Learning Environments*, *10*(1), 15. https://doi.org/10.1186/s40561-023-00237-x

Us'an, U., Sofyan, A., & Mastur, M. (2026). Pembelajaran Guru Sebagai Determinan Self-Motivation Learning Peserta Didik: Kajian Teoretis Berbasis Literatur. *Jurnal Penelitian Nusantara*, *2*(1), 156–161. https://doi.org/https://doi.org/10.59435/menulis.v2i1.934

Valeriano, C. de M., Tupinambá, M., Simonetti, A., Heilbron, M., de Almeida, J. C. H., & do Eirado, L. G. (2011). U-Pb LA-MC-ICPMS geochronology of Cambro-Ordovician post-collisional granites of the Ribeira belt, southeast Brazil: Terminal Brasiliano magmatism in central Gondwana supercontinent. *Journal of South American Earth Sciences*, *32*(4), 416–428. https://doi.org/10.1016/j.jsames.2011.03.003

Valianty, M., & Hardini, A. T. A. (2019). Penerapan Model Think Pair Share Untuk Meningkatkan Kemampuan Berpikir Kritis Dan Hasil Belajar Matematika Siswa Di Sekolah Dasar. *Jurnal Basicedu*, *3*(4), 1073–1081. https://doi.org/10.31004/basicedu.v3i4.261

Wilis, A., Iqbal, R., & Rahmatika Kesuma, A. (2026). Persepsi Mahasiswa Terhadap Etika Penggunaan ChatGPT Di UIN Raden Intan Lampung. *Jurnal Pustaka AI (Pusat Akses Kajian Teknologi Artificial Intelligence)*, *6*(1), 68–79. https://doi.org/10.55382/jurnalpustakaai.v6i1.1773

Wulandari, R. (2021). Characteristics and Learning Models of the 21st Century. *Social, Humanities, and Educational Studies (SHEs): Conference Series*, *4*(3), 8. https://doi.org/10.20961/shes.v4i3.49958

Yang, Z., Xia, S., & Feng, S. (2022). Construction of a Physical and Medical Care Integrated Model for the Elderly in the Community Based on Artificial Intelligence and Machine Learning. *Journal of Healthcare Engineering*, *2022*. https://doi.org/10.1155/2022/3678577

Yani, J., Maharani, I., Dalimunthe, N. F., Pulungan, F. K., & Fakhri, N. (2024). Peningkatan Kemampuan Berfikir Kritis dan Pemecahan Masalah Matematis Siswa antara Siswa yang Diberi Pelajaran Kooperatif Tipe TPS Square dan TPS Share. *FARABI: Jurnal Matematika Dan Pendidikan Matematika*, *7*(2), 265–270. https://doi.org/10.47662/farabi.v7i2.773

Yani, M. F. (2022). Penerapan Model Pembelajaran Kooperatif Think Pair Share Untuk Meningkatkan Hasil Belajar Geografi. *Jurnal Bina Ilmu Cendekia*, *3*(2), 31–40. https://doi.org/10.46838/jbic.v3i2.233

Yao, Y. (2022). A Review of the Comprehensive Application of Big Data, Artificial Intelligence, and Internet of Things Technologies in Smart Cities. *Journal of Computational Methods in Engineering Applications*, 1–10. https://doi.org/10.62836/jcmea.v2i1.0004

Yaumi, M. (2024). Ethical-Spiritual Dimensions of 21st-Century Education: Taming Artificial Intelligence with Human Intelligence. *Al-Musannif*, *7*(1), 1–14. https://doi.org/10.56324/al-musannif.v7i1.82

Yunan, A. (2017). Analisis Faktor-Faktor yang memengaruhi Minat Beli Konsumen Rokok dalam Perspektif Ekonomi Islam (Studi Masyarakat Muslim Kecamatan Waylima Kabupaten Pesawaran). In *Jurnal Sains dan Seni ITS* (Vol. 6, Issue 1, pp. 51–66). http://repositorio.unan.edu.ni/2986/1/5624.pdf%0Ahttp://fiskal.kemenkeu.go.id/ejournal%0Ahttp://dx.doi.org/10.1016/j.cirp.2016.06.001%0Ahttp://dx.doi.org/10.1016/j.powtec.2016.12.055%0Ahttps://doi.org/10.1016/j.ijfatigue.2019.02.006%0Ahttps://doi.org/10.1

Zhang, S. (2022). The Cognitive Transformation of Japanese Language Education by Artificial Intelligence Technology in the Wireless Network Environment. *Computational Intelligence and Neuroscience*, *2022*(10), 1–10. https://doi.org/10.1155/2022/7886369