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The Utilization of Artificial Intelligence in the Educational Communication Process at Bandung 2 Senior High School

Pemanfaatan Kecerdasan Buatan dalam Proses Komunikasi Pendidikan di SMA Negeri 2 Bandung

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Abstract

The rapid development of artificial intelligence (AI) has significantly influenced educational practices, particularly in shaping communication processes between teachers and students. This study aims to examine the utilization of AI in learning activities and its impact on educational communication at SMA Negeri 2 Bandung. Specifically, it focuses on how AI affects teacher–student interaction, communication patterns, and the pedagogical role of AI in the classroom. This study employed a convergent mixed-methods design, integrating quantitative and qualitative data. Quantitative data were collected through a survey of 187 students, while qualitative data were obtained from in-depth interviews with two teachers and five students. The findings indicate that approximately 89% of students use AI regularly or occasionally, primarily for academic purposes, with ChatGPT as the most frequently used platform. The results reveal that AI enhances students' access to information and learning efficiency; however, it also reshapes communication patterns. Students tend to reduce direct consultation with teachers, shifting toward more independent, AI-assisted learning. At the same time, qualitative findings show that teachers remain essential in guiding interpretation, fostering critical thinking, and maintaining meaningful educational interaction. This study highlights a key paradox: while AI increases functional learning efficiency, it may weaken dialogic communication and critical engagement if not properly guided. Therefore, the integration of AI in education should emphasize teacher supervision, digital literacy, and human-centered communication practices.

Keywords: *Artificial Intelligence; ChatGPT; Digital Literacy; Educational Communication; Learning Process*

Abstrak

Era digital telah memperluas penggunaan kecerdasan buatan (AI) secara signifikan dalam pendidikan, termasuk di SMA Negeri 2 Bandung. Penelitian ini bertujuan untuk mengeksplorasi pemanfaatan AI dalam proses pembelajaran dan dampaknya terhadap

siswa. Pendekatan metode campuran *(mix method)* digunakan, menggabungkan survei kuantitatif terhadap 187 siswa dengan wawancara kualitatif yang melibatkan dua guru dan lima siswa. Hasil survei menunjukkan bahwa mayoritas siswa secara rutin menggunakan AI, terutama untuk mendukung tugas akademik, dengan aplikasi seperti ChatGPT menjadi yang paling sering digunakan. Temuan kualitatif mengungkapkan bahwa meskipun AI memfasilitasi pemahaman materi pembelajaran, terdapat kekhawatiran mengenai ketergantungan yang berlebihan pada AI, yang dapat menghambat perkembangan keterampilan berpikir kritis siswa. Lebih lanjut, meskipun AI berpotensi mempercepat pembelajaran, peran guru tetap krusial dalam memberikan bimbingan dan membina interaksi pendidikan yang bermakna. Penelitian ini menyimpulkan bahwa integrasi AI dalam pendidikan harus didekati dengan perencanaan yang matang, menekankan pentingnya supervisi dan peningkatan literasi digital untuk memastikan pengalaman belajar yang efektif dan berpusat pada manusia.

Kata kunci: ChatGPT; Literasi Digital; Pemanfaatan AI; Pembelajaran Digital; Proses Komunikasi Pendidikan

1. Introduction

The rapid development of artificial intelligence (AI) has significantly transformed educational practices, particularly in how information is accessed and how communication occurs within the learning process. In the digital era, AI is increasingly utilized not only as a source of information but also as an interactive tool that mediates communication between students and teachers. This transformation indicates that educational communication is no longer solely dependent on direct human interaction, but is increasingly shaped by AI-assisted technologies.

Educational communication refers to the process through which teachers and students exchange knowledge, provide feedback, and construct meaning within the learning environment. In this context, the integration of AI has the potential to reshape communication patterns, including how students seek clarification, engage in dialogue, and respond to instructional guidance. While AI offers efficiency and accessibility, it may also influence the depth and quality of teacher–student interaction.

Previous studies have demonstrated that AI can enhance learning efficiency and provide adaptive and personalized learning experiences (Chen et al., 2020; Zawacki-Richter et al., 2019). In addition, AI-based tools are increasingly used in digital environments, including for analyzing online interactions and supporting content-based learning processes (Solihin et al., 2025). However, recent studies also highlight potential challenges, such as the risk of over-reliance on AI, which may reduce students' critical thinking abilities and active engagement in learning (Ng et al., 2023; Lim et al., 2023).

Despite these contributions, most existing studies primarily focus on the technological and cognitive benefits of AI in education, with limited attention to how AI reshapes educational communication and interaction patterns, particularly in teacher–student relationships. This indicates a research gap in

understanding the communicative implications of AI integration within classroom contexts.

This study addresses this gap by examining the role of AI in mediating communication between students and teachers in secondary education. SMA Negeri 2 Bandung was selected as the research site due to its active adoption of digital technologies and its relevance as a context where AI usage among students is increasingly prominent.

Specifically, this study aims to: (1) examine the frequency and types of AI usage among students in the learning process; (2) analyze how AI usage influences teacher–student communication and interaction patterns; and (3) explore the challenges and expectations of AI integration from both student and teacher perspectives.

By focusing on the intersection between AI utilization and educational communication, this study contributes to a more comprehensive understanding of how AI not only supports learning processes but also reshapes communication dynamics in educational settings.

2. Theoretical Framework

This study is grounded in the intersection of artificial intelligence in education, educational communication, and digital literacy, which together provide a conceptual lens to understand how AI reshapes learning interactions.

Artificial intelligence (AI) in education refers to the use of computational systems capable of simulating human intelligence to support learning processes, including information retrieval, adaptive feedback, and personalized instruction (Chen et al., 2020; Zawacki-Richter et al., 2019). In recent years, AI-based tools such as ChatGPT have not only functioned as sources of information but also as interactive agents that influence how students engage with knowledge and communicate within the learning environment.

From a communication perspective, educational communication emphasizes the interaction between teachers and students in constructing meaning, exchanging feedback, and facilitating understanding. This interaction includes various forms such as explanation, clarification, discussion, and feedback-seeking processes. The integration of AI introduces a shift in this communication pattern, where students may rely more on AI-mediated interaction rather than direct engagement with teachers.

In addition, the concept of digital literacy becomes essential in understanding how students critically engage with AI-generated information. Digital literacy refers to the ability to access, evaluate, and utilize digital information effectively and responsibly. As highlighted in previous studies, the use of AI requires not only technical skills but also critical awareness to assess the accuracy and relevance of information (Ng et al., 2023; Lim et al., 2023). This is particularly important in preventing over-reliance on AI and maintaining students' critical thinking abilities.

Furthermore, recent studies have shown that AI is increasingly used in

analyzing digital content and supporting communication processes in online environments, which reinforces its role not only as a tool but also as a mediator of interaction (Solihin et al., 2025). This indicates that AI has a dual role: facilitating access to knowledge while simultaneously reshaping communication dynamics.

Based on these concepts, this study adopts a conceptual framework that positions AI as a mediating technology influencing educational communication. The framework assumes that: (1) AI utilization affects how students access and process information;(2) AI usage influences communication patterns between students and teachers; and (3) digital literacy moderates how effectively students engage with AI in a critical and meaningful way. Thus, the analysis in this study focuses on understanding how AI not only enhances learning efficiency but also transforms communication interactions within the educational context.

3. Methods

This study employed a mixed- This study employed a convergent mixed-methods design, in which quantitative and qualitative data were collected and analyzed separately, then integrated during the interpretation phase to provide a comprehensive understanding of AI utilization in educational communication.

3.1. Research Site and Participants

The study was conducted at SMA Negeri 2 Bandung, a secondary school with active integration of digital technologies in learning activities. The selection of this site was based on its relevance as a context where students are increasingly exposed to and utilize AI-based tools.

Quantitative data were collected from 187 students, selected using a stratified sampling approach to ensure representation across grade levels (X, XI, and XII). This approach allowed the study to capture variations in AI usage among students at different academic stages.

For the qualitative component, participants were selected using purposive sampling. A total of two teachers and five students were chosen based on their experience with AI usage in learning activities, ensuring that the data reflected diverse perspectives regarding the integration of AI in the classroom.

3.2. Data Collection

Quantitative data were collected through a structured questionnaire designed to measure: (1) the frequency of AI usage, (2) the types of AI applications used, and (3) the purposes of AI utilization in learning activities.

The questionnaire was distributed to students and completed during the data collection period from January to February 2025.

Qualitative data were obtained through in-depth interviews with selected participants. The interviews explored students' and teachers' experiences, perceptions, and challenges related to AI usage, particularly focusing on how AI influences communication and interaction in the learning process.

3.3. Data Analysis

Quantitative data were analyzed using descriptive statistics with SPSS software to identify patterns of AI usage, such as frequency, preferred applications, and purposes of use. The analysis focused on identifying the most dominant trends relevant to the research objectives.

Qualitative data were analyzed using thematic analysis with the assistance of NVivo 12 software. The analysis followed several steps: (1) transcription of interview data, (2) initial coding to identify recurring concepts, (3) development of thematic categories, and (4) interpretation of themes related to educational communication and AI usage. Word frequency analysis and visualization tools (e.g., word clouds and project maps) were used only as supporting tools, while the primary analysis was based on thematic interpretation.

3.4. Data Integration

The integration of quantitative and qualitative data was conducted during the interpretation stage. Quantitative findings provided an overview of general patterns of AI usage, while qualitative findings offered deeper insights into how and why these patterns occur.

For example, survey results indicating high levels of AI usage were further explained through interview data that revealed changes in communication patterns, such as reduced direct interaction with teachers and increased reliance on AI for academic support. This integration enabled the study to capture both the extent and the implications of AI use in educational communication.

3.5. Validity and Reliability

To ensure data validity, the questionnaire was reviewed and tested prior to distribution. In the qualitative phase, credibility was enhanced through careful transcription, consistent coding procedures, and comparison of responses across participants. Triangulation was applied by comparing quantitative and qualitative findings to ensure consistency and strengthen the overall interpretation. Ethical considerations were also maintained, including informed consent, participant anonymity, and confidentiality of data.

4. Results and Discussion

4.1. Quantitative Analysis of AI Usage at SMA Negeri 2 Bandung

In the first phase of the analysis, the findings from a survey involving 187 students at SMA Negeri 2 Bandung are presented. The analysis focuses on three main aspects: the frequency of AI usage, the types of applications used, and the primary purposes of AI utilization in learning activities.

The results show that 89% of students use AI either regularly (41%) or occasionally (48%), indicating that AI has become an integral part of students' learning practices. This high level of adoption suggests that AI is not merely a supplementary tool, but a central component in students' academic activities.

In terms of application preferences, ChatGPT is the most frequently used platform, followed

by other tools such as DeepSeek and Photomath. This finding indicates that students tend to prefer AI applications that provide interactive and real-time responses.

Regarding the purpose of use, approximately 65% of students utilize AI for academic support, including completing assignments, summarizing materials, and understanding difficult concepts. This suggests that AI plays a significant role in facilitating learning efficiency. However, beyond these functional benefits, the findings also indicate a potential shift in learning behavior. The frequent use of AI suggests that students may increasingly rely on AI as a primary source of information, which has implications for how they engage with teachers and learning materials.

Figure 1. Distribution of AI Usage Frequency, Applications, and Learning Purposes among Students at SMA Negeri 2 Bandung

Source: Solihin, et al (2025)

A survey conducted with 187 students at SMA Negeri 2 Bandung reveals that artificial intelligence (AI) is increasingly becoming an integral part of students' daily learning practices. The majority of respondents were female (55%), with a relatively balanced distribution across grades X, XI, and XII. This distribution indicates that the adoption of AI is relatively consistent across demographic groups, suggesting that the use of digital technology is no longer significantly influenced by gender or grade level, in line with the findings of Xie (2022), who noted the widespread adoption of technology among adolescents.

Regarding the frequency of AI usage, most students reported using AI regularly (41%) or occasionally (48%), indicating a high level of engagement with AI-based tools. This pattern reflects a growing reliance on digital platforms in learning processes, as also highlighted by Nguyen and Lee (2015). In terms of application preferences, ChatGPT was identified as the most frequently used platform, followed by DeepSeek, MatematikaPro, and Socrates. This preference suggests that students tend to favor AI tools that provide interactive, responsive, and real-time assistance, consistent with the observations of Johnson and Kumar (2015). In addition, the increasing use of AI-based platforms in digital environments also reflects broader trends in the utilization of AI for content interaction and information processing (Solihin et al., 2025).

The primary motivation for AI use among students was academic support (65%), including completing assignments, summarizing materials, and understanding complex concepts. Students in grades XI and XII were found to be more active users compared to grade X students, likely due to increased academic

demands, as suggested by Williams (2014). While AI is generally perceived as beneficial in enhancing learning efficiency, the findings also reveal emerging concerns regarding over-reliance on AI, which may reduce students' engagement in critical thinking processes, as cautioned by Nguyen and Lee (2015). This concern is also relevant in the broader context of digital technology use, where excessive dependence on automated systems may influence how individuals process and evaluate information (Solihin, 2021).

Gender-based differences were relatively minimal. However, female students tended to use AI more for academic purposes, while male students showed a slightly higher tendency to use AI for entertainment, reflecting patterns identified by Venkatesh et al., (2016) Access to AI was primarily facilitated through personal smartphones and laptops, although disparities in access still indicate the presence of a digital divide. Overall, these findings emphasize the importance of educational institutions in guiding the ethical and critical use of AI, ensuring that it supports cognitive development rather than replacing critical thinking. This aligns with Johnson (2015) and is further supported by studies highlighting the importance of digital adaptation and technological literacy in shaping effective communication practices in the digital era (Solihin et al., 2024).

4.2. Qualitative Analysis of AI Usage at SMA Negeri 2 Bandung

Following the quantitative analysis, the study proceeded to a qualitative phase to explore the deeper meaning and implications of AI usage, particularly in relation to educational communication and learning interaction. This phase focused on understanding how students and teachers experience, interpret, and respond to the integration of AI in the learning process.

The qualitative analysis was conducted through systematic coding of interview transcripts using NVivo 12 software. The analysis followed a thematic approach, beginning with initial coding to identify recurring concepts, followed by the development of broader categories and themes related to AI usage, communication patterns, and learning behavior.

To support the identification of commonly discussed topics, a word frequency analysis was conducted using NVivo 12. However, this analysis was used as a supporting tool, while the primary focus remained on thematic interpretation of the data. The use of word frequency analysis helped highlight dominant terms that frequently appeared in participants' responses, providing an initial overview of key issues discussed by both students and teachers.

To enhance the interpretation of the data, visual tools such as Wordclouds and Project Maps were generated. These visualizations were used to illustrate patterns and relationships among emerging themes identified during the coding process. In particular, Project Maps helped to demonstrate how different categories, such as AI usage, learning efficiency, and communication changes, are interconnected within the educational context.

The Wordcloud visualization, presented in Figure 2, provides a general overview of the most frequently discussed topics in the interviews. While this visualization offers a useful summary, the analysis in this study goes beyond surface-level frequency by focusing on the interpretation of themes, especially regarding students' dependency on AI, changes in communication with teachers, and the implications for critical thinking.

Figure 2. Word Frequency Visualization of Interview Data as Supporting Tool for Thematic Analysis

Source: Solihin, et al (2025)

In the learning process, students such as ND and CH utilize artificial intelligence (AI) technologies like ChatGPT, Gemini, and Photomath to assist with summarizing material and understanding key concepts. They note that AI can significantly accelerate comprehension, as the explanations provided are tailored to a more understandable language style. As FDT stated, "AI helps because the language of the explanation can be adjusted."

However, students also recognize that not all information generated by AI is guaranteed to be accurate. Consequently, they emphasize the importance of verifying AI-generated answers before fully relying on them. This finding aligns with the research of Jaiteh et al. (2024), which highlights that while AI is an effective academic tool, its use must be accompanied by a critical evaluation of the information it provides.

The integration of AI into the learning process has also altered the interaction patterns between students and teachers. Some students, such as SNA, noted that the convenience of obtaining answers from AI has reduced their need to engage with teachers directly. As SNA expressed, "AI reduces communication with teachers because students prefer to find answers themselves."

This finding indicates that AI particularly reduces forms of consultation and clarification communication, where students would typically approach teachers to ask questions, confirm understanding, or seek explanation of learning materials. In addition, there is also a decline in feedback-seeking behavior, as students increasingly rely on AI-generated responses rather than requesting validation from teachers.

However, teachers, including Mrs. Sri and Mrs. Wiwi, observed a more complex dynamic. While some students became more passive in classroom interaction, others became more proactive by bringing AI-generated insights into discussions. In this sense, AI does not entirely eliminate communication but rather reconfigures classroom dialogue, shifting it from teacher-centered explanation toward more student-initiated interaction.

This dynamic underscores the importance of maintaining open communication in the classroom to

ensure that technology enhances, rather than replaces, the educational relationship between teachers and students.

While AI offers easy access to information, it also raises ethical concerns, particularly regarding excessive dependence, which can hinder the development of critical thinking skills. This aligns with the findings from Fullan (2023) that using AI can present inherent challenges and limitations to using this technology to support learners and learning. Students like SNA admitted that AI's convenience has led to a reduction in their motivation to engage in deeper thinking. As SNA shared, "I feel like AI makes me lazier because the answers are easier to get." Conversely, other students, such as ND, view AI as an opportunity to better understand the technology's underlying principles, suggesting that AI can also serve as a learning tool for critical exploration.

Students expressed differing perspectives regarding the impact of AI on their learning behavior. For instance, one student (SNA) admitted that the convenience of AI has reduced their motivation to think critically, stating that "AI makes it easier to get answers, so sometimes I don't try to think deeply." In contrast, another student (ND) viewed AI as a tool that can support understanding when used appropriately, emphasizing the importance of checking and interpreting AI-generated information.

These contrasting responses indicate that while AI can facilitate learning, it also introduces the risk of reduced cognitive engagement, particularly when students rely on it without critical evaluation. This suggests that AI use may shift students' roles from active knowledge constructors to more passive recipients of information if not properly guided.

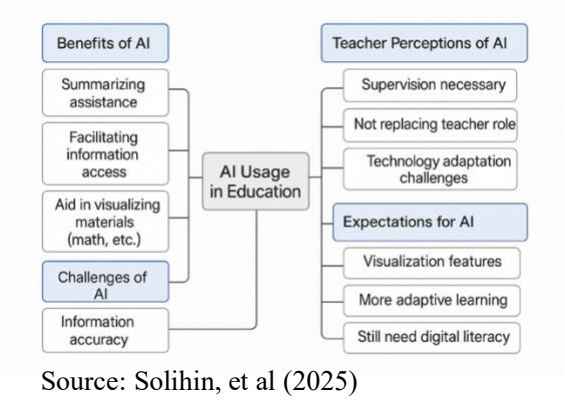
Therefore, these findings highlight the importance of strengthening digital literacy and critical thinking skills to ensure that students remain active participants in their learning process. This is consistent with previous studies that emphasize that the effective use of AI in education requires not only access to technology but also the ability to critically evaluate and interpret digital information (Ng et al., 2023; Lim et al., 2023).

Both students and teachers agreed that, despite the sophistication of AI, the role of teachers remains indispensable. Teachers not only impart knowledge but also understand students' psychological needs, adjust teaching methods, and build emotional relationships that foster effective learning. As ND aptly stated, "Teachers understand students' needs better than AI, which is only based on data." Thus, AI should be seen as a supportive tool in the educational process rather than a replacement for the essential human role of the teacher.

Students recognize that while AI is beneficial in education, there is still potential for further development, especially in visualizing complex subjects. For instance, ND expressed a desire for AI to assist in visualizing topics like mathematics, stating, "I hope AI can help visualize graphical lessons such as mathematics." Additionally, both students and teachers emphasized the

need for strict oversight in the use of AI to ensure that it complements the learning process without diminishing the value of hands-on exploration and human interaction in education. The following is a project map that describes an overview of the entire process and flow that will be carried out in the research, as seen in Figure 3 below.

Figure 3. Thematic Project Map Illustrating the Relationships between AI Usage, Learning Behavior, and Educational Communication



Source: Solihin, et al (2025)

4.3. The Integration of AI in Education: Opportunities and Challenges

The integration of artificial intelligence (AI) in education has significantly transformed teaching and learning, driven by the rapid advancements in information and communication technology (ICT). As highlighted by Chen, Xie, and Hwang (2020), AI enables educators to tailor teaching methods, fostering a more responsive and individualized learning environment. AI-based adaptive learning platforms assess students' abilities in real-time and offer personalized learning recommendations (Zawacki-Richter et al., 2019), moving traditional pedagogical communication toward a more interactive and dynamic approach.

Beyond enhancing learning, AI also alleviates the administrative burden on teachers by automating tasks such as grading, scheduling, and student monitoring. This automation allows educators to devote more time to coaching and meaningful student interactions (Ng, Ho, & Mak, 2023). For example, SMA Negeri, despite limited documentation on AI implementation, demonstrates a proactive approach to AI adoption by participating in events like the G-Schools Indonesia Summit 2025 (Detik Times, 2025). This engagement underscores the school's commitment to strengthening digital literacy and enhancing students' communication skills in the era of AI integration.

However, alongside these advancements, challenges persist. Data privacy and cybersecurity remain significant concerns, given the reliance of AI systems on vast amounts of personal data (Toxigon, 2025). Furthermore, excessive dependence on AI tools risks undermining critical thinking and creativity, skills that are fundamental in the information age (Lim, Tay, & Sim, 2023). Thus, it is crucial to integrate AI thoughtfully to ensure it supports, rather than replaces, essential educational and communication practices.

From a communication standpoint, the integration of AI reshapes the role of teachers from being mere conveyors of knowledge to facilitators of discussion, critical inquiry, and ethical reflection

(Crowe, 2017). While AI can deliver content efficiently, it cannot replace the empathetic, culturally informed communication that is central to human interaction. Sustainable AI integration, therefore, requires ongoing professional development for educators (Ng et al., 2023) and a strong ethical commitment to preserving the human-centered essence of education, as exemplified by initiatives at Bandung 2 Senior High School.

4.4. Integration of Quantitative and Qualitative Results

The use of artificial intelligence (AI) in education at SMA Negeri 2 Bandung City has shown significant developments, as reflected in the results of surveys and interviews. From a quantitative perspective, the majority of students (around 80%) admitted to using AI in their learning activities, especially to help complete academic assignments (see Table 1). This is in line with the findings of several previous studies showing that the use of technology in education, including AI, is increasingly common among students (Prensky, 2018).

However, when considering the results of qualitative interviews, although many students felt helped, they also expressed concerns about the potential for dependence on this technology. In an interview, one student expressed that "AI does help, but I feel like sometimes I just copy without really understanding the material." In interviews with teachers, it was found that although AI makes it easier to access information and speed up the learning process, many teachers feel that this technology has not completely replaced their role in providing in-depth understanding. This is in contrast to the findings of the quantitative survey which showed that most students felt that AI had been quite helpful in facilitating understanding of lessons. This situation reflects the importance of the role of teachers in guiding students not only to rely on technology to complete assignments, but also to encourage them to think critically.

Furthermore, interviews with students showed that AI was used more often for routine and practical tasks, such as searching for information or creating an outline for a paper. According to one student, "AI is very helpful in planning a presentation or looking for references." This finding leads to the conclusion that AI is used more often as an efficient tool rather than as a substitute for active learning. This result is in line with previous research showing that technologies such as AI are often used to support a more independent learning process, but do not completely replace human interaction in the classroom (Zhao & Zheng, 2015).

In addition, the survey results showing that most students feel that AI improves their learning efficiency are linked to the views of teachers who state that AI provides many benefits in terms of time efficiency. Teachers at SMA Negeri 2 admitted that the use of AI has accelerated the process of gathering information and made materials more accessible. However, although this time efficiency is highly appreciated, both teachers and students realize that AI cannot completely replace the

discussion and reflection process that occurs in classroom interactions.

One important finding that connects the quantitative and qualitative results is the concern about the impact of AI on critical thinking skills. Based on the interview results, many students expressed that although AI helped them get answers quickly, they felt less motivated to analyze or evaluate information in depth. These findings provide evidence that although AI can facilitate learning, major challenges remain in ensuring that students remain engaged in critical thinking processes.

Quantitative results also showed that the majority of students considered the use of AI in learning did not interfere with their social interactions in class. However, interviews with several students showed a discrepancy in this regard. Several students expressed that although they used AI to complete assignments, interaction with classmates was still important for them to discuss ideas and collaborate. One student added, "AI helps me get information faster, but discussing with friends is more helpful in understanding concepts.

This finding highlights the integration of quantitative and qualitative results: while the quantitative data show high functional acceptance of AI in improving learning efficiency, the qualitative findings emphasize the continued importance of human interaction. Students still rely on teachers and peer discussion for deeper understanding, indicating that AI supports functional learning but does not replace the need for human mediation and pedagogical guidance.

The limitations of AI in conveying emotional nuances or social contexts in learning are also interesting findings. In an interview, a teacher expressed that AI, although very useful for data collection or text analysis, is unable to assess emotional nuances that are often important in the learning process, especially in discussion-based learning. This leads to the view that technologies such as AI, although very efficient, still need to be integrated with a more humane pedagogical approach that is sensitive to students' emotional needs (Dede, 2016). Although artificial intelligence has demonstrated significant advancements in computational processing and language generation, interview findings indicate that it remains limited in capturing the emotional and contextual dimensions of communication. For instance, one teacher (Mrs. Sri) noted that “AI can help explain material, but it does not understand students’ feelings or learning difficulties.” Similarly, another participant emphasized that AI responses often lack sensitivity to the classroom context and individual student needs.

These responses suggest that while AI is effective in delivering information, it cannot fully replicate the emotional nuance, social context, and depth of understanding that characterize human communication. AI systems interpret inputs and produce outputs based on algorithmic patterns and user-provided prompts, without

possessing genuine emotional awareness or contextual intuition.

As a result, the role of teachers remains essential in mediating learning, particularly in addressing students' emotional engagement, providing contextual explanations, and fostering meaningful interaction within the classroom.

Consequently, AI cannot fully capture or respond to the complexities of human affect, interpersonal relationships, or culturally embedded meanings, underscoring the continued importance of human judgment in domains requiring emotional and social sensitivity. While the survey results showed that students preferred using AI for individual tasks, interview findings suggest a more nuanced pattern of use, which can be distinguished into routine use, occasional use, and meaningful educational reliance. Most students appear to use AI at the level of routine and occasional use, primarily for completing assignments or obtaining quick answers rather than integrating it into deeper collaborative learning processes. This is reflected in students' expressed desire for more meaningful integration of AI into group-based activities. As one student noted, "I would like to see more assignments that combine AI and group discussions."

While students increasingly use AI as a tool to support their studies, this interaction remains largely text-based and prompt-driven, limiting its capacity to support the affective, motivational, and interpersonal dimensions of learning. Human educators, therefore, remain essential in mediating emotional engagement, fostering social interaction, and providing contextual and culturally grounded interpretation-elements that AI systems cannot fully replicate.

From a teacher perspective, interviews revealed that many have begun to adapt AI into their teaching practices; however, some also expressed the need for further training to optimize its use. As one teacher stated, "AI can be a very useful tool, but we also need to understand more about how to integrate it into effective teaching." These findings indicate that while AI is widely adopted at a functional level, its meaningful integration into collaborative and pedagogically guided learning still requires stronger teacher support and instructional design.

5. Conclusion

This study shows that AI is widely used by students at SMA Negeri 2 Bandung, with around 89% using it regularly or occasionally, mainly for academic tasks. While quantitative findings indicate strong functional acceptance of AI in improving learning efficiency, qualitative results reveal important challenges, including reduced teacher–student interaction (especially in consultation, clarification, and feedback-seeking) and concerns about declining critical engagement due to over-reliance on AI. The findings also confirm that, despite its benefits, AI cannot replace the role of teachers in guiding interpretation, fostering critical thinking, and maintaining meaningful classroom communication. Therefore, effective AI integration requires not only student adoption but also

strengthened teacher capacity and digital literacy. The novelty of this study lies in showing how high AI usage coexists with shifts in communication patterns, highlighting the tension between efficiency and human-centered learning.

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