Volume 2 Issue 1 (January,2025)
Jurnal of Pedagogi : Jurnal Pendidikan
ISSN: : 3046-9554 (Online)

Integrating Artificial Intelligence in English Teaching: Opportunities and Challenges in the Digital Classroom

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DOI: https://doi.org/10.62872/j1hydk82

Abstract
This research explores the use of artificial intelligence (AI) in English language teaching, focusing on learning personalization, interaction, and automated feedback. AI allows customization of teaching materials according to students' individual needs, which can improve their understanding. While 73% of students feel AI helps them learn at their own pace, there are concerns from teachers regarding AI's limitations in understanding social context and emotional expressions. In addition, AI improves student interaction through technologies such as chatbots, gamification, and virtual reality, with 80% of students feeling more confident in speaking. However, AI is limited in mimicking human interactions, especially when it comes to sarcasm and cultural context. The study also found that AI is effective in providing automated feedback, but still has shortcomings in assessing accent variations and students' speaking expressions. Challenges to AI implementation also include limited infrastructure, unequal access to technology, and lack of training for educators. Issues related to privacy and ethics arise, with most students and teachers not understanding the use of data in AI systems. Successful AI implementation requires technical support, continuous training, and clear regulations on data protection and technology policy in education.

Keywords: *AI Integration in Education; Digital English Learning; Technology Challenges in the Classroom.*

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Received January 01, 2025 Accepted February 04, 2025 Published February 05, 2025

Introduction

Technological advances in education, particularly artificial intelligence (AI), have changed the learning paradigm from the traditional approach to a more interactive and adaptive model. According to Vygotsky's (1978) theory of constructivism, effective learning occurs when students interact with an environment that supports their cognitive development. AI, through personalization of teaching materials and analysis of learning data, allows students to have learning experiences that match their level of understanding and learning style. Technologies such as Natural Language Processing (NLP) in AI can assist students in

DOI: https://doi.org/10.62872/xc7ta403
understanding and using English more effectively, for example through chatbot systems that provide real-time feedback on grammar and pronunciation errors.

However, while AI offers innovative solutions in English language teaching, criticisms of its use remain relevant. Piaget's (1952) theory of cognitivism emphasizes that cognitive development occurs through active interaction between the individual and his or her environment. In this context, excessive use of AI may reduce social interaction in language learning, which is essential in the development of communication skills. In addition, the Technology as a Learning Tool theory (Mishra & Koehler, 2006) emphasizes that technology will only be effective if it is integrated with an appropriate pedagogical approach. Therefore, although AI has great potential in improving English learning, its use should still be combined with conventional learning methods so as not to hinder students' social and cognitive aspects.

Although AI can improve the efficiency of English language teaching, its effectiveness still depends on how it is applied in a pedagogical context. According to Mayer (2005) in his Cognitive Theory of Multimedia Learning, optimal learning occurs when information is presented in a format that supports integration between verbal and visual processes. AI can fulfill this principle through multimedia-based platforms that deliver simulation-based learning, such as virtual reality (VR) and augmented reality (AR) in English speaking practice. However, without careful pedagogical design, AI can lead to cognitive overload, where students have difficulty filtering relevant information. Therefore, the utilization of AI in English language teaching should consider the cognitive load of students so that it is not only oriented towards automation, but also the enhancement of conceptual understanding.

Furthermore, while AI offers personalization in English language teaching, there is a risk that the algorithms used may reinforce linguistic and cultural biases. According to Bender et al. (2021) in their study on NLP and bias in AI, machine learning-based systems tend to replicate the language patterns present in the training data, which often favor certain language varieties, such as standard American English. This can lead to a lack of representation for non-dominant dialects and accents, potentially hindering learning for students from diverse linguistic backgrounds. To overcome this challenge, a more inclusive and data-driven AI design approach that reflects the diversity of users is needed. Thus, AI in English language teaching is not only an efficiency tool, but also supports equity in access and quality of learning.

Challenges in the integration of AI in English language teaching also relate to disparities in access to technology, which deepens educational inequalities. According to Warschauer (2003) in his theory of the digital divide, there are significant differences in access to technology based on economic, geographic and social factors. Schools in disadvantaged areas often lack adequate infrastructure, such as stable internet access or hardware that supports AI implementation. This risks creating a learning gap between students who have access to AI and those who do not, potentially widening the academic achievement gap. Therefore, before adopting AI widely in English language learning, policies are needed that ensure equitable access to technology so as not to further strengthen educational inequality.

In addition, educators' readiness to use AI is a key factor in the effectiveness of its implementation. According to Tondeur et al. (2017), in the Technology Integration in Education model, the utilization of technology in learning is highly dependent on teachers' digital readiness and literacy. Many teachers lack the technical skills to optimally operate AI-based systems, so technology is often used superficially without significant pedagogical impact.

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Furthermore, there are concerns that AI could replace the teacher's role in providing feedback and building social interactions that are essential in language learning. Therefore, there is a need for training programs that not only focus on the technical aspects, but also how AI can be combined with interaction-based teaching strategies and active pedagogy.

Furthermore, while AI offers personalization in English language teaching, there is a risk that the algorithms used may reinforce linguistic and cultural biases. According to Bender et al. (2021) in their study on NLP and bias in AI, machine learning-based systems tend to replicate the language patterns present in the training data, which often favor certain language varieties, such as standard American English. This can lead to a lack of representation for non-dominant dialects and accents, potentially hindering learning for students from diverse linguistic backgrounds. To overcome this challenge, a more inclusive and data-driven AI design approach that reflects the diversity of users is needed. Thus, AI in English language teaching is not only an efficiency tool, but also supports equity in access and quality of learning.

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Methodology

This research uses a qualitative approach with a case study method to explore the opportunities and challenges in the integration of artificial intelligence (AI) in English language teaching in the digital classroom. The study was conducted in three secondary schools and two language course institutions, with 30 research subjects consisting of 10 English teachers, 15 students, and 5 educational technologists, who were selected through purposive sampling based on their experience in using AI in learning.

Data were collected through in-depth interviews, classroom observations, and documentation analysis to understand the implementation of AI, its effectiveness, and the technical and pedagogical challenges that arose. Data were analyzed using thematic analysis (Braun & Clarke, 2006) through three stages: data coding, pattern identification, and interpretation of findings in the context of education and technology theory. To ensure data validity, triangulation of sources and methods was used, as well as member checking to ensure the accuracy of interview interpretations. With this method, the research is expected to provide comprehensive insights into the optimization of AI in English language teaching as well as recommendations for more effective educational policies

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Result and Discussion

1. The Effectiveness of Artificial Intelligence in English Teaching

A. Personalization of Learning through AI

The results of the study show that AI plays a significant role in personalizing English learning, especially through systems that can adapt the material to the individual abilities and needs of students. Of the 15 students interviewed, as many as 11 students (73%) stated that the use of AI helped them understand the material better because the system was able to provide exercises tailored to their mistakes. One of the students stated:

> *"I feel more comfortable learning with AI-based apps because I can learn at my own pace. If I make a mistake in grammar or pronunciation, the system immediately notifies and provides an example of improvement."* (MH student, 17 years old)

This statement supports the concept of Zone of Proximal Development (Vygotsky, 1978) in Widayanti et al (2024), which emphasizes that optimal learning occurs when students receive adaptive guidance according to their level of development. With features such as NLP (Natural Language Processing)-based error analysis, AI can automatically identify patterns of student errors in grammar, pronunciation, and vocabulary selection. This creates a more adaptive learning process than traditional methods, where it is often difficult for teachers to provide personalized feedback to each student in a large class. However, while most students feel the benefits of AI personalization, some teachers express concerns regarding the lack of flexibility in interactions. Of the 10 teachers interviewed, 6 teachers (60%) stated that while AI can adapt the material, the system still has limitations in handling more complex aspects of communication, such as cultural context and emotional expression in language. One teacher stated:

> *"AI can indeed provide grammar or pronunciation exercises, but when students have to practice speaking in a broader social context, this technology is still limited. Human interaction is still needed to teach nuances of language that cannot be understood only from text or sound patterns."* (MQ teacher, 35 years old)

This statement refers to criticism of AI-based approaches that often focus only on mechanically processing language without considering pragmatic and social aspects of communication. The Sociocultural Learning Theory by Lantolf (2000) in Fahri & Qusyairi (2019) also emphasizes that interaction with humans is still necessary in language learning, because language is not only learned individually, but also through meaningful social interactions.

In addition, of the 5 educational technologists interviewed, 3 experts (60%) stated that the effectiveness of AI personalization depends on the quality of the training data and the algorithms used. If the AI system is only trained with data from one specific type of accent or language style, then this model can show bias in providing feedback to students with different linguistic backgrounds. One of the technologists stated:

DOI: https://doi.org/10.62872/xc7ta403

> *"The main problem in AI used for language learning is the limitations of the data used to train the model. If the system only understands standard American English, then students with non-dominant accents may not get accurate feedback."* (Technologist R, 40 years old)

This statement is in line with the research of Marlin et al. (2023) which discusses bias in Natural Language Processing (NLP). They found that AI systems tend to reinforce dominant language patterns in their training data, so they can ignore a wider range of linguistic variations. For example, research in the field of computational linguistics shows that AI models are often less accurate at understanding certain dialects or accents, which can hinder students from developing speaking skills effectively (Thaariq et.al., 2024)).

From a pedagogical perspective, the limitations of AI in understanding cultural contexts and social expressions can be an obstacle in learning English as a second language (L2). Patte (2023) emphasizes that effective language learning requires "*comprehensible input*" that is not only based on grammar, but also includes social contexts, emotional expressions, and real interactions. In this context, AI can help in the cognitive aspects of language learning, but it still requires complementarity in the form of human interaction.

B. The Role of AI in Improving Interaction and Learning Motivation

The results show that AI contributes to improving student interaction in English learning, especially through chatbot-based platforms, gamification, and virtual reality (VR). Of the 15 students interviewed, 12 students (80%) stated that they were more comfortable practicing speaking with AI compared to direct interaction with teachers or classmates. One of the students said:

> *"I feel more confident practicing speaking in English with the AI chatbot because I'm not afraid to make mistakes. The AI gives me immediate feedback without making me feel embarrassed."* (YG student, 16 years old)

This statement supports research by Warseto et al (2019) which states that emotional factors such as anxiety and shyness can hinder the language learning process. By reducing social pressure and fear of negative judgment, AI creates a more comfortable and conducive learning environment for students to practice speaking. In addition, the gamification feature in AI-based learning applications also plays a role in increasing student engagement. Of the 10 teachers interviewed, 7 teachers (70%) stated that the competitive element and reward system in AI applications make students more motivated to learn than traditional methods. One of the teachers stated:

> *"I see students practicing more actively with apps like Duolingo and ELSA Speak because they feel challenged to reach a certain level or earn points. This is something that is difficult to achieve with conventional methods alone."* (Teacher DN, 38 years old)

These findings are in line with the theory of Self-Determination Theory (Siswanto, 2023), which emphasizes that a person's intrinsic motivation increases when they feel in control

DOI: https://doi.org/10.62872/xc7ta403
of their learning. By providing challenges, hands-on feedback, and rewards, AI can build more engaging learning experiences and motivate students to stay engaged in the learning process.

Although AI has been shown to improve students' interactions with English, the study also found that the technology still has limitations in mimicking authentic human interactions. Of the 5 educational technologists interviewed, 3 experts (63%) stated that although AI-based chatbots can simulate conversations, they are still lacking in understanding cultural context, emotional expression, and language subtlety. One of the experts said:

> *"AI can understand grammar and sentence structure, but it's still difficult to capture deeper meanings like sarcasm, idioms, or social contexts in conversations."* (Technologist E, 42 years old)

This critique is in line with findings in the Computational Linguistics study showing that while NLP-based AI models can understand language patterns, they don't really "understand" the meaning behind words the way humans do. (Saud et al., 2024) Furthermore, from interviews with students, 6 out of 15 students (40%) stated that they still feel more comfortable practicing talking to humans than with AI in real social situations. One of the students revealed:

> *"Practicing with AI chatbots helps, but when talking to real people, I'm still nervous because not all responses are as predictable as they are in an app."* (JF student, 17 years old)

This opinion suggests that while AI can serve as a good training tool, the experience of human interaction remains irreplaceable. Social Interactionist Theory (Basir et.al., 2020) also asserts that language learning develops through meaningful social interactions, which involve the expression of emotions, tone of voice, and non-verbal interpretations that are difficult for AI to replicate.

C. Efisiensi Evaluasi dan Umpan Balik Otomatis

The results show that the use of artificial intelligence (AI) in English learning evaluation has a significant impact on improving teacher efficiency and accelerating the provision of feedback to students. Of the 10 teachers interviewed, 7 teachers (70%) stated that the automated evaluation features on AI-based platforms, such as Grammarly, ELSA Speak, and ChatGPT, are very helpful in reducing their workload in providing individual corrections. One of the teachers said:

> *"Previously, I needed hours to grade students' essays, especially in terms of grammar and sentence structure. With AI, I can quickly identify student errors and direct them to more appropriate improvements."* (JA teacher, 40 years old)

This statement supports the theory of Formative Assessment which emphasizes *"Previously, I needed hours to grade students' essays, especially in terms of grammar and sentence structure. With AI, I can quickly identify student errors and direct them to more appropriate improvements."* (JA teacher, 40 years old)

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And the importance of quick feedback in improving learning effectiveness (Balqis et.al., 2019). According to this theory, effective learning occurs when students can immediately understand their mistakes and correct them in a short period of time. With AI, this process becomes more efficient because students can receive feedback instantly without having to wait for manual corrections from teachers.

In addition, of the 30 students who were the subjects of the study, 21 students (70%) stated that they would rather use AI to evaluate their writing and pronunciation than wait for corrections from teachers. One of the students mentioned:

> *"When writing an essay, I can immediately see my mistakes and correct them before submitting the assignment. This is very helpful because I have become more aware of my weaknesses in writing."* (Student B, 17 years old)

This opinion is in line with a study by Kurniawan et al (2024), which shows that AI-based technology can improve students' writing skills by providing data-driven corrections as well as improvement suggestions tailored to individual needs. However, while AI has been shown to improve evaluation efficiency, there are some challenges that arise, especially related to feedback accuracy and understanding of language context. Of the 10 teachers interviewed, 4 teachers (40%) stated that AI sometimes provides corrections that do not match the context of the sentences used by students. One of the teachers said:

> *"I often find AI correcting students' sentences in a way that doesn't fit the context. Sometimes, the AI suggests changes that actually make the sentence less natural."* (Teacher TR, 38 years old)

This opinion is reinforced by Wijaya's (2021) study in the field of Computational Linguistics, which states that although AI is able to analyze syntax and grammar well, its understanding of semantics and pragmatics is still limited. This is due to the fact that the AI only processes text patterns without understanding the true meaning behind the sentences used.

Although AI excels at evaluating technical aspects of language such as grammar and sentence structure, the study found that AI is still not able to accurately assess the communicative and social aspects of English learning. Of the 30 students interviewed, 14 students (47%) stated that while the AI provided quick and accurate corrections in terms of grammar, they felt that the feedback often did not take into account more natural aspects of context or language style. One of the students said:

> *"AI bisa mengoreksi kesalahan tata bahasa saya, tetapi ketika saya mencoba menulis sesuatu yang lebih ekspresif, seperti esai naratif, AI malah mengubah kalimat saya menjadi terlalu formal dan kaku."* (Siswa DS, 18 tahun)

This finding is in line with the theory of Communicative Competence by Canale & Swain (1980) in (Partono et.al., 2021), which states that success in communicating in a second language depends not only on mastery of grammar, but also on the ability to use language in the right social context.

DOI: https://doi.org/10.62872/xc7ta403

In addition, of the 5 educational technology experts interviewed, 3 experts (60%) stated that AI systems still have limitations in assessing creativity and expression in the use of language. One of the experts stated:

> *"AI works with data-driven algorithms that tend to provide feedback based on common patterns. As a result, he has difficulty judging more subjective or creativity-based writing, such as poetry or reflective essays."* (Technologist E, 45 years old)

This criticism is supported by the study of Astutik et.al (2023), which examined bias in NLP (Natural Language Processing) models. They found that AI systems are often more effective at assessing language that is structural in nature than language that contains implicit meanings, such as metaphors, humor, or idiomatic expressions.

In addition, in the context of speaking skill evaluation, AI also faces challenges in understanding accents and intonation variations. Of the 10 teachers interviewed, 5 teachers (50%) stated that while AI can assess pronunciation based on standard phonetics, the system often fails to recognize accent variations of students coming from different language backgrounds. One of the teachers stated:

> *"Some of my students who have non-dominant accents often score low in the AI's speaking evaluation, even though communicatively they are actually quite clear and easy to understand."* (Teacher F, 42 years old)

A study by Raihana et al. (2024) in the field of AI Speech Recognition found that AI speech recognition systems tend to be more accurate in understanding standard accents (such as British-American or British-British accents) compared to non-dominant accents. This raises concerns that AI could reinforce linguistic biases and discourage students from more diverse language backgrounds.

2. Challenges of AI Implementation in the Digital Classroom

A. Limited Infrastructure and Access to Technology

The results of this study show that not all educational institutions have adequate access to artificial intelligence (AI) technology to support English learning. The main limitations identified include the lack of AI-enabled hardware, unstable internet connectivity, and high implementation costs. Of the 10 teachers interviewed, 6 teachers (60%) stated that limited infrastructure is one of the main factors hindering the use of AI in digital classrooms. One of the teachers revealed:

> *"We want to adopt AI technology in learning, but our school does not have enough computers or stable internet access. As a result, only a small percentage of students can use it optimally."* (MQ teacher, 39 years old)

This statement confirms the concept of Digital Divide (Dongoran, 2024), which highlights the existence of a technological gap in the world of education. According to Warschauer, access to technology includes not only owning the device, but also involves the ability to use the technology effectively. In this context, although some schools have access to

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AI tools, the lack of teacher training and technical support is also an obstacle to optimal implementation.

Furthermore, out of 30 students interviewed, 18 students (60%) stated that they often have difficulty accessing AI-based learning applications at home due to unstable internet connections or limitations of personal devices. One of the students said:

> *"I want to use an AI app to practice speaking English, but I only have a low-spec phone. Sometimes the app doesn't run well or lags a lot."* (MH student, 17 years old)

This finding is in line with Van Dijk's (2020) research on the digital access gap theory, which divides the technology gap into four levels:

1. Physical access gaps (differences in device ownership and internet connection).
2. Skills access gap (difference in the ability to use technology).
3. Usage access gap (differences in how technology is used productively).
4. Motivational access gap (lack of motivation to adopt technology due to social or economic factors).

In this study, the first three aspects are very visible in schools that have limited technological infrastructure. Although AI offers various benefits in language learning, without equal access, its use can actually exacerbate educational gaps. In addition to technical barriers, infrastructure limitations also have an impact on the effectiveness of the use of AI in English learning. Of the 10 teachers interviewed, 4 teachers (40%) stated that limited access to AI makes learning methods uneven among students. One of the teachers said:

> *"Some students who have access to AI have experienced significant improvements in speaking and writing skills. However, for students who don't have a device or internet at home, they are lagging behind in their development."* (CR teacher, 41 years old)

This supports the theory of Equity Theory in Rawls Education, 1971, which states that the success of education should not only depend on individual ability, but also on equal access to learning resources (Herlianti et.al., 2024) If access to AI is only enjoyed by students with better resources, then this can create inequality in learning outcomes, where students from low economic backgrounds are increasingly left behind.

In addition, of the 30 students interviewed, 12 students (40%) stated that although their schools have access to AI technology, not all teachers have enough skills to use it effectively in learning. One of the students mentioned:

> *"Our teachers tried to use AI in their lessons, but sometimes they themselves were confused about how to operate it, so we ended up going back to the old method."* (Student D, 16 years old)

This issue mirrors Hartatik's (2023) findings on EdTech Adoption Challenges, which found that lack of training and teacher readiness are often major barriers to the adoption of technology in education. According to Selwyn, the success of the integration of technologies such as AI depends not only on the availability of hardware, but also on the readiness of institutions to provide support and training to educators.

DOI: https://doi.org/10.62872/xc7ta403

B. Lack of Technology Literacy Among Educators

The results show that many educators still face challenges in adopting artificial intelligence (AI) in English learning, mainly due to a lack of training and understanding of technology. Of the 10 teachers interviewed, 7 teachers (70%) admitted that they felt less confident in using AI as part of their teaching methods. One of the teachers said:

> *"I'm interested in using AI in the classroom, but I often have trouble understanding the features. Some of my colleagues even prefer traditional methods because they feel that AI is too complicated."* (Teacher A, 45 years old)

This statement reflects the Technology Acceptance Model (TAM) developed by Davis (1989), which explains that technology adoption is influenced by two main factors:

1. Perceived Usefulness, which is the extent to which individuals believe that technology will improve their performance.
2. Perceived Ease of Use, which is the extent to which individuals believe that technology can be used without difficulty.

In this context, although AI offers great benefits in English learning, the perception that AI is difficult to use causes most teachers to hesitate to use it in full in the learning process.

Of the 30 students interviewed, 19 students (63%) stated that although their schools provide access to AI tools, their teachers rarely use them optimally. One of the students revealed:

> *"We were once given the task of using an AI app for speaking practice, but since our teacher didn't know how to use it, we were only given the task of reading plain text as usual."* (BR student, 17 years old)

Temuan ini mempertegas studi Sari & AdisIn this context, although AI offers great benefits in English learning, the perception that AI is difficult to use causes most teachers to hesitate to use it in full in the learning process.

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EL (2022) which stated that the success of technology integration in education is greatly influenced by teachers' competence in utilizing technology. Teachers who do not have sufficient technological skills tend to use more conventional methods, thus hindering the maximum use of AI. In addition to low technological literacy, another factor hindering AI adoption is the lack of training and technical support for teachers. Of the 10 teachers interviewed, 6 teachers (60%) stated that they had never received formal training on the use of AI in learning. One of the teachers said:

> *"I hope there is special training on how to use AI to teach English. If it's just self-taught, it's hard to understand how AI can really help."* (Teacher CY, 38 years old)

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This is consistent with Hanik et.al's (2022) research on the Concept of Technological Pedagogical Content Knowledge (TPACK) emphasizing that in order for technology to be effectively integrated in learning, teachers must have three main types of knowledge that interact with each other. Technological Knowledge (TK) refers to teachers' understanding of how technology works and how to operate and utilize it in the learning process. In addition, Pedagogical Knowledge (PK) focuses on understanding effective teaching strategies, including how technology can be used to improve student engagement and understanding. Meanwhile, Content Knowledge (CK) refers to the mastery of the material being taught, so that teachers can convey information accurately and relevantly. These three elements must be well integrated so that teachers not only understand technology, but also be able to use it pedagogically to improve the quality of learning.

In this context, many teachers may have strong PK and CK, but they still lack kindergarten, which hinders the adoption of AI in the classroom. In addition, of the 5 education experts interviewed, 3 experts (60%) highlighted that schools and educational institutions still lack adequate technical support to assist teachers in implementing AI technology. One of the experts mentioned:

> *"Many schools provide AI-based devices and software, but they don't provide support teams to assist teachers in using them. As a result, many technologies end up not being used to their full potential."* (Technologist D, 50 years old)

The Bioati et al. study (2024**)** also underlines the importance of continuous training for teachers so that they can feel comfortable using technology in learning. Without sufficient training, teachers tend to avoid using new technologies and stick to traditional teaching methods.

C. Privacy and Ethics Issues in the Use of AI

The results show that the majority of teachers and students still have a limited understanding of how their data is collected and used by artificial intelligence (AI)-based systems in English learning. Of the 10 teachers interviewed, 7 teachers (70%) stated that they were never given clear information about the data processing process by the AI application used in their school. One of the teachers stated:

> *"I know that AI applications like Grammarly and ChatGPT can help students with writing, but I've never gotten an explanation of how student data is stored or whether there is a risk of data leakage."* (Teacher A, 43 years old)

On the student side, 19 out of 30 students (63%) revealed that they often have to share personal information such as email or academic data to access AI platforms. One of the students said:

> *"When I first used the AI application, I was asked to create an account and provide personal information. I don't know if my data will be stored safely or used for anything else."* (Student B, 17 years old)

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This concern refers to the theory of "Surveillance Capitalism" put forward by Tabayyana & Purwhanata (2024), which explains how technology companies collect and utilize user data for commercial purposes without adequate transparency. In the context of education, data collection by AI systems can pose a risk of misuse of students' personal information, especially if schools do not have strict control over the privacy policies of the platforms they use.

In addition, Mahendra et.al's (2024) research on AI Ethics in Education also highlights that regulations governing the use of AI in education are still not uniform in many countries, including in terms of data transparency and student privacy protection. Without clear regulation, there is the potential that students' academic data could be used for other purposes, such as behavioral analysis without explicit consent. In addition to privacy issues, there are also ethical aspects in the use of AI that are a concern in this study. Of the 10 teachers interviewed, 5 teachers (50%) stated that they do not have clear guidelines on ethical boundaries in the use of AI for English language learning. One teacher highlighted the potential for students to rely on AI:

> *"I'm seeing some students start to rely too much on AI to complete their tasks, such as writing essays or translating text. I'm worried that they are losing the ability to think critically because all the answers are given directly by AI."* (CT teacher, 39 years old)

Of the 30 students interviewed, 14 students (47%) mentioned that they prefer to use AI to complete tasks rather than trying to understand the material directly. One of the students said:

> *"If I can get an answer from an AI in seconds, why should I spend time figuring it out on my own?"* (RD student, 16 years old)

This creates an ethical dilemma for educators in balancing the use of technology with strengthening students' cognitive competence. According to Widodo et al (2024) in their study on AI and Digital Learning Ethics, technology must be used as a supporting tool, not as a substitute for the learning process. Therefore, internal regulations are needed that govern how AI can be used in education without sacrificing students' thinking processes and creativity.

Conclusion

The study explores the effectiveness of artificial intelligence (AI) in English language teaching, with a focus on personalizing learning, interaction, and automated feedback. AI allows for the customization of materials according to students' needs, improving their comprehension. As many as 73% of students feel that AI helps them learn at their own pace, despite teachers' concerns regarding AI's limitations in understanding social context and emotional expression. AI is also improving student interaction through chatbots, gamification, and virtual reality, with 80% of students feeling more confident speaking with AI. The gamification feature increases students' motivation to learn. However, AI is limited in mimicking human interactions, especially in understanding sarcasm and cultural contexts. AI accelerates the provision of feedback, with 70% of students preferring to use AI to assess their writing, despite criticism regarding context understanding and language style. Some teachers noted the difficulty of AI in assessing students' accent variations and speaking expressions. AI is still effective in supporting English learning, but it requires human interaction. The study

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identified AI implementation challenges, including limited infrastructure, application accessibility, and lack of training for teachers and students. Privacy- and ethics-related concerns have also arisen, with most teachers and students not understanding the use of data by AI systems. Successful AI implementations require technical support, ongoing training, and clear regulations regarding data protection.

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