

English Language Teachers' Perceptions and Challenges in Using Artificial Intelligence in Improving Students' Critical Thinking Skills

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Abstract

Artificial intelligence (AI) has demonstrated considerable potential in enhancing students' critical thinking skills in English language education. Guided by the Technological Pedagogical Content Knowledge (TPACK) framework and supported by the Technology Acceptance Model (TAM), this study employed a descriptive qualitative design to examine English language teachers' perceptions and challenges in integrating AI into instruction. Fifteen (15) English language teachers from Saniel Cruz National High School were purposively selected. Data were collected through in-depth interviews and reflective journals and analyzed using thematic analysis. Findings revealed that AI supports instructional efficiency while promoting student autonomy, reflective thinking, and engagement. Teachers reported that AI tools facilitate feedback, encourage analytical reasoning, and enhance participation in learning activities. However, challenges such as over-reliance on AI, concerns about accuracy and bias, limited access to resources, and issues related to academic integrity were also identified. The study concludes that AI should be utilized as a supportive pedagogical tool rather than a substitute for human instruction. Effective integration requires ethical awareness, digital competence, and guided implementation to ensure that AI enhances rather than diminishes students' critical thinking skills.

Keywords: artificial intelligence, critical thinking, educational technology, english language teaching, teachers' perceptions

1. INTRODUCTION

Artificial intelligence (AI) has increasingly influenced educational practices, particularly in enhancing students' critical thinking skills. Recent studies have shown that AI supports English language education by assisting in information retrieval, data analysis, and problem-solving, thereby fostering deeper engagement and higher-order thinking skills (Hading et al., 2024). Its adaptability enables learners to progress at their own pace, allowing instruction to become more personalized and responsive to individual learning needs (Darwin et al., 2023).

Teachers generally recognize the efficiency and flexibility of AI tools; however, challenges remain in their effective integration into classroom practice (Zulkarnian & Yunus, 2023). While AI offers opportunities for interactive and adaptive learning, concerns have been raised regarding students' over-reliance on AI-generated outputs, which may hinder independent reasoning and critical analysis (Darwin et al., 2023; Hading et al., 2024). Similarly, students acknowledge the usefulness of AI in academic tasks but express concerns about its limitations in providing nuanced understanding and contextual accuracy (Darwin et al., 2023). These contrasting perspectives highlight the need for a balanced and pedagogically grounded approach to AI integration in education.

In the context of English Language Teaching (ELT), AI tools such as ChatGPT, Grammarly, QuillBot, and intelligent tutoring systems have been widely utilized to enhance both linguistic competence and cognitive skills. Studies indicate that these tools provide immediate feedback, personalized learning experiences, and opportunities for analytical engagement, all of which contribute to the development of critical thinking (Kristiawan et al., 2024; Tamil et al., 2024). AI-driven platforms encourage learners to evaluate information, compare alternatives, and construct well-reasoned arguments, thereby supporting higher-order thinking processes (Song, 2023).

However, the integration of AI in ELT is not without challenges. Issues related to data privacy, algorithmic bias, and the need for adequate teacher training remain significant concerns (Hockly, 2023). Moreover, excessive dependence on AI may reduce students' originality, creativity, and independent thinking if not properly guided (Darwin et al., 2023). These findings underscore the importance of ethical and pedagogically sound implementation of AI in language education.

Critical thinking is widely recognized as an essential component of language learning, enabling learners to analyze information, evaluate arguments, and communicate effectively (Paul & Elder, 2008). Instructional approaches such as content-based instruction and task-based learning have been shown to enhance learners' ability to question assumptions, synthesize ideas, and construct meaning (Liaw, 2007; Nguyen, 2020). However, the integration of critical thinking into language education remains inconsistent due to limitations in curriculum design, teacher preparedness, and assessment practices (Masadeh, 2021).

The emergence of AI presents new opportunities to address these challenges by providing adaptive feedback, interactive learning environments, and opportunities for reflective thinking (Holmes et al., 2019; Lu et al., 2018). AI-supported tools encourage learners to engage in metacognitive processes, evaluate their own work, and refine their

reasoning strategies. Nonetheless, the effectiveness of AI in promoting critical thinking depends largely on how it is integrated into instructional practices (Baker et al., 2019).

Despite the growing body of research on AI in education, studies specifically focusing on teachers' perceptions and challenges in using AI to enhance critical thinking in ELT remain limited. This study addresses this gap by examining how English language teachers utilize AI tools, the benefits they perceive, and the challenges they encounter in fostering students' critical thinking skills.

This study aimed to examine English language teachers' perceptions and challenges in using artificial intelligence (AI) to enhance students' critical thinking skills. It sought to explore teachers' experiences, identify the benefits and limitations of AI integration, and provide insights into its effective use in language instruction.

This study aimed to address the following questions:

1. What AI tools do English language teachers employ to enhance students' critical thinking skills?
2. How do English language teachers use AI tools to support critical thinking development?
3. What are the perceived benefits of using AI tools in improving students' critical thinking skills?
4. What are the perceived challenges of using AI tools in improving students' critical thinking skills?

2. LITERATURE REVIEW

Today, artificial intelligence (AI) serves as an effective instrument that can help enhance the quality of teaching and learning processes. AI-based tools are able to generate content, deliver feedback, personalize instruction, and assist educational decision-making. Thus, it is clear that AI technologies have much to offer teaching and learning in contemporary institutions that strive to integrate digital innovation. In addition, using AI technologies allows fostering critical thinking skills in learners (Holmes et al., 2021; Zhai, 2024).

One of the most commonly employed tools in educational contexts is ChatGPT, which is a popular generative AI program. Currently, many scholars report that ChatGPT can be useful in terms of instructional planning, generating content, participating in discussions, and implementing inquiry activities (Dizon, 2024; Zhai, 2024). The advantages of ChatGPT as free availability and flexibility, contribute to its ever-increasing adoption in modern classrooms.

In addition to ChatGPT and other generative AI applications, AI writing assistants like Grammarly and QuillBot can play a positive role in language education. Using these applications, one can obtain feedback on grammatical, stylistic, coherence-related, and lexical issues. As noted by Zheng and Yu (2023), AI-assisted writing encourages self-regulation as a means to revise and improve learners' writing. Likewise, as stated by AnthonySamy (2024), AI-based feedback contributes to improving learners' reflective and metacognitive skills.

Critical thinking is one of the essential aspects of twenty-first-century education. Indeed, critical thinking includes analyzing data, evaluating evidence, solving problems, and making decisions on the basis of existing information (Piaget, 1973). In the case of English language teaching, critical thinking involves interpretation of written content, building arguments, considering different perspectives, and communicating ideas. Therefore, critical thinking is crucial for educators in English language classes.

Recent studies indicate that AI can be used as a tool to foster learners' critical thinking skills. Specifically, AI-generating prompts, feedback, and instructional materials promote reflection, comparing different perspectives, and justifying conclusions (Liu & Zhang, 2023). In turn, Dai and Lin (2024) emphasize that AI-assisted learning activities promote reflective thinking as a means to refine answers in response to instant feedback.

The integration of AI into language lessons also helps increase the degree of student engagement in the learning process. Using interactive AI applications makes classroom activities interesting and engaging. According to Lim et al. (2024) and Zhang (2023), AI applications foster increased engagement because of their capacity to generate stimulating interactive tasks.

However, the use of AI in educational settings is not without limitations. There are issues related to overdependence on generative AI, misuse of AI-generated information, plagiarism, and lack of equal access to technology resources. Kasneci et al. (2023) emphasize that overreliance on AI may deprive learners of opportunities to develop problem-solving and critical-thinking skills independently. Additionally, the question of the ethical application of AI remains open to discussion.

TAM and TPACK represent two frameworks for analyzing the integration of technology into classroom activities. TAM identifies the factors that influence the process of adopting new technology (Davis et al., 1989). TPACK considers interactions between technological, pedagogical, and content knowledge needed for the successful implementation of technology (Mishra & Koehler, 2006). Hence, TAM and TPACK provide insight into the process of integrating AI into the teaching and learning process.

3. RESEARCH METHODOLOGY

The Research Methodology section describes the complete method used for the qualitative study. It outlines the research design and the researcher's role. It also discusses the participants, materials, and processes for data collection and analysis. Trustworthiness and ethical considerations are carefully addressed. These components ensure the study is conducted with integrity and reliability.

3.1. Research Design

This study employed a descriptive qualitative research design to address the research inquiries. This approach allowed the researcher to explore and interpret English language teachers' perceptions and experiences regarding the use of artificial intelligence (AI) in enhancing students' critical thinking skills. Through in-depth inquiry, the study identified patterns and themes that emerged from participants' responses within real classroom contexts.

3.2. Participants of the Study

The study involved fifteen (15) English language teachers from Saniel Cruz National High School who met the inclusion criteria of teaching English and utilizing AI tools in instruction. The study focused primarily on participants' experiences and perceptions regarding AI integration rather than demographic characteristics. Consequently, demographic variables such as gender, age, and years of teaching experience were not considered as participant selection criteria and were not included in the analysis.

3.3. Instruments

The study utilized interview guide questions and reflective journals as primary data collection instruments. These tools enabled the researcher to capture participants' lived experiences, perceptions, and challenges related to AI integration in teaching. The interview guide was developed based on the study's research objectives and reviewed by experts in educational research and English language teaching to establish content validity. Semi-structured interview questions were utilized to allow participants to elaborate on their experiences, perceptions, and challenges regarding the use of artificial intelligence in enhancing students' critical thinking skills.

The interview protocol focused on four major areas: (1) AI tools utilized by teachers, (2) strategies for integrating AI in instruction, (3) perceived benefits of AI in promoting critical thinking, and (4) challenges encountered in AI implementation.

Examples of interview questions included:

1. What artificial intelligence tools do you commonly use in your English language classes?
2. How do these AI tools help promote students' critical thinking skills?
3. What benefits have you observed from integrating AI into your teaching practices?
4. What challenges have you encountered when using AI tools in instruction?
5. How do you ensure that students use AI responsibly and ethically?

The interview guide served as a flexible framework that allowed probing questions to be asked whenever clarification or elaboration was necessary.

3.4. Data Collection and Analysis

Data were collected using validated interview guides, audio recordings, and field notes. Prior to data collection, approval was obtained from the DepEd Kidapawan City Division Office and the school principal. Participants were informed of the study's purpose and provided informed consent. Interviews were conducted and recorded to ensure accuracy and completeness of data. Field notes were used to document observations and support data organization.

An audit trail was maintained, including documentation of procedures, interview transcripts, coding processes, and thematic analysis. This ensured transparency and supported the dependability and confirmability of the study. The study employed thematic analysis following Braun and Clarke's (2006) six-phase framework. Data were transcribed, coded, and categorized to identify recurring themes aligned with the research questions. This method allowed for a systematic interpretation of participants' responses and the development of meaningful insights into AI's role in enhancing critical thinking.

4. RESULTS

This part highlights the findings that have been formulated through the thematic analysis of the data gathered via in-depth interviews and reflective journals of fifteen English language teachers of Saniel Cruz National High School. Themes emerged through the process of analyzing the data, which are based on the experiences and perceptions of the teachers about how using AI can help improve the critical thinking of their students. Findings are presented based on the research questions posed in terms of the AI tools that are being used, the methods used in encouraging critical thinking among learners, the benefits of incorporating AI, and the issues related to using it.

4.1. AI Tools Employed by English Language Teachers to Enhance Students' Critical Thinking Skills

The analysis of interview and focus group discussion data revealed three major themes regarding the artificial intelligence tools utilized by English language teachers to enhance students' critical thinking skills: (1) ChatGPT as a Primary Instructional Tool, (2) AI Writing Assistants for Writing Development, and (3) AI-Powered Tools for Interactive Learning Activities. Participants frequently used these tools to support instruction, facilitate writing activities, and promote student engagement.

4.1.1 *ChatGPT as a Primary Instructional Tool*

Participants consistently identified ChatGPT as the most commonly used artificial intelligence tool in their English language classes. Teachers reported utilizing the platform to create lesson plans, generate writing prompts, prepare instructional materials, and develop classroom activities.

One participant shared:

"Of course, ChatGPT. That's the only AI I use in my class." (#001.IDI)

Similarly, a focus group participant stated:

"I usually use ChatGPT for making lesson plans or when I ask for motivational activities that I can use." (#001.FGD)

These responses indicate that teachers primarily rely on ChatGPT as a versatile instructional resource for lesson preparation and classroom implementation.

4.1.2 *AI Writing Assistants for Writing Development*

Another theme that emerged was the use of AI writing assistants such as Grammarly, QuillBot, and Kialo. Participants described these tools as valuable resources for improving students' writing skills, supporting paraphrasing activities, and helping learners organize ideas and arguments.

One participant stated:

"I use QuillBot for paraphrasing during writing practice." (#003.IDI)

A focus group participant also remarked:

"I often use Grammarly for checking grammar and QuillBot for paraphrasing." (#002.FGD)

The responses suggest that teachers use AI writing tools to support writing improvement, revision, and the organization of ideas.

4.1.3 AI-Powered Tools for Interactive Learning Activities

The third theme focused on AI-powered tools that facilitate interactive lesson creation and student engagement. Participants identified Curipod, Canva Magic Write, and Twee as useful tools for designing interactive lessons, writing activities, and classroom exercises.

One participant explained:

"I use Curipod to create interactive lessons and Twee to make exercises." (#005.IDI)

Similarly, a focus group participant stated:

"These AI tools help create interactive activities that encourage students to think and stimulate ideas." (#003.FGD)

These findings indicate that teachers utilize AI-powered instructional tools to develop engaging learning experiences and encourage active student participation.

4.2. Strategies Employed by English Language Teachers to Enhance Students' Critical Thinking Skills Through AI

The analysis of participants' responses revealed three major themes regarding how English language teachers utilize AI tools to support the development of students' critical thinking skills: (1) Writing and Providing Feedback, (2) Arguing and Reasoning, and (3) Applying Activities to Engage, Motivate, and Promote Comprehension. These strategies demonstrate how teachers integrate AI into classroom instruction to encourage reflection, analysis, participation, and deeper understanding.

4.2.1 Writing and Providing Feedback

Teachers reported utilizing AI-generated feedback to help students evaluate and improve their written outputs. Participants described activities in which students compare their work with AI-generated suggestions, revise drafts, and explain the reasoning behind their revisions.

One participant shared:

"I make students compare their own paragraphs with AI feedback and talk about what makes good writing." (#001.FGD)

Another participant stated:

"I ask students to use AI to draft ideas, then edit and explain why they changed certain parts." (#002.FGD)

These responses indicate that teachers employ AI as a tool for reflection, revision, and evaluation during the writing process.

4.2.2 *Arguing and Reasoning*

Another strategy involved using AI to facilitate argumentation and reasoning activities. Teachers reported asking students to evaluate different viewpoints, generate counterarguments, and defend their positions on various issues.

One participant explained:

"I tell students to use AI to find counter-arguments for their essays, then defend their points." (#003.IDI)

Similarly, another participant shared:

"I assign a topic, ask AI to provide pros and cons, and have students argue for or against." (#004.IDI)

A focus group participant also noted:

"They use tools like chatbots and writing helpers... these help students learn how to check facts, compare ideas, and make good decisions." (#004.FGD)

These findings suggest that teachers utilize AI to encourage learners to examine evidence, compare perspectives, and justify decisions.

4.2.3 *Applying Activities to Engage, Motivate, and Promote Comprehension*

The third theme focused on the use of AI-generated materials and activities to increase student engagement, motivation, and comprehension. Participants described integrating AI-generated passages, exercises, and classroom activities to assess understanding and stimulate participation.

One participant explained:

"I use that in the passages that I get from AI chat. I also use it in activities and evaluations to assess whether students truly understand the lesson." (#005.IDI)

Another participant shared:

"Of course, in constructing sentences and grammar, they learn how to build words... reading comprehension greatly helps their critical thinking." (#006.IDI)

A focus group participant remarked:

"I cannot really say in terms of critical thinking, but it helps motivate students and makes them more engaged in class." (#005.FGD)

These responses indicate that teachers utilize AI-supported activities to promote understanding, participation, and classroom engagement.

4.3 Perceived Benefits of Using AI Tools in Improving Students' Critical Thinking Skills

The analysis of participants' responses revealed four major themes regarding the perceived benefits of AI integration in enhancing students' critical thinking skills: (1) Encouraging Immediate Feedback and Reflective Thinking, (2) Encouraging Active Learning and Analytical Thinking, (3) Building Confidence, Engagement, and Motivation, and (4) Improving Efficiency in Teaching and Learning.

4.3.1 Encouraging Immediate Feedback and Reflective Thinking

Participants emphasized that AI provides immediate feedback that enables students to identify errors, revise their work, and reflect on alternative ways of expressing ideas.

One teacher stated:

“The benefit is that students get quick feedback and can see different ways to write or explain something. They learn to compare and choose what works best.” (#001.IDI)

Another participant shared:

“They learn faster because the AI points out mistakes right away. It also makes them think about logic and clarity.” (#005.IDI)

These responses suggest that AI supports reflective thinking by allowing students to evaluate and improve their work.

4.3.2 Encouraging Active Learning and Analytical Thinking

Participants observed that AI tools promote active participation and encourage students to question, analyze, and evaluate information rather than memorize content.

One teacher explained:

“AI tools make lessons more interactive. Students learn to question and analyze instead of just memorizing.” (#002.IDI)

Another participant stated:

“It teaches them to judge quality and understand audience and purpose—good critical skills.” (#004.FGD)

These responses indicate that AI-assisted activities encourage learners to engage more deeply with content and ideas.

4.3.3 Building Confidence, Engagement, and Motivation

Teachers reported that AI tools increase students' confidence and willingness to participate in learning activities.

One participant shared:

“The best thing is that students are more engaged and confident to share opinions. They also learn to explain why they think a certain way.” (#003.IDI)

Another teacher remarked:

“It builds confidence, improves language use, and develops reasoning.” (#006.FGD)

These findings suggest that AI contributes to students' motivation and active participation in classroom learning.

4.3.4 Improving Efficiency in Teaching and Learning

Participants also highlighted the efficiency offered by AI tools for both teachers and students.

One teacher stated:

“With proper use, they can conduct research and pass it on time, especially senior high school students.” (#009.IDI)

Another participant shared:

“It’s time-efficient. You don’t need a lot of time to prepare. It’s easier to create interactive games and activities.” (#0014.IDI)

A teacher also noted:

“Actually, the benefit is not from the students, but for the teachers. It lessens our work and makes the job faster.” (#006.)

These responses indicate that AI enhances productivity by reducing preparation time and facilitating access to instructional resources.

4.4 Perceived Challenges of Using AI Tools in Improving Students' Critical Thinking Skills

The analysis revealed five major themes regarding the challenges encountered in using AI tools to enhance students' critical thinking skills: (1) Over-Reliance on AI, (2) Concerns About Accuracy, Bias, and Misinformation, (3) Limited Access to Internet and Digital Resources, (4) Challenges in Maintaining Academic Integrity and Avoiding Plagiarism, and (5) Insufficient Training, Guidance, and Ethical Awareness.

4.4.1 Over-Reliance on AI

Teachers expressed concern that students may become overly dependent on AI-generated output rather than developing their own ideas and reasoning.

One participant stated:

“The challenge is that some students rely too much on the AI. I have to remind them to use their own ideas and not just copy.” (#001.IDI)

Another teacher shared:

“They are not making an effort in researching, but are relying more on AI... they are abusing the use of technology.” (#009.IDI)

These responses suggest that excessive reliance on AI may limit opportunities for independent thinking and problem-solving.

4.4.2 Concerns About Accuracy, Bias, and Misinformation

Participants also identified concerns regarding the reliability and accuracy of AI-generated information.

One teacher explained:

“The hard part is making sure the AI information is correct. Sometimes it gives wrong or biased answers.” (#002.IDI)

Another participant stated:

“AI tools can sometimes give wrong or biased answers. Students need to learn how to check and question the information.” (#0015.IDI)

These responses indicate the need for careful evaluation of AI-generated content before it is used in teaching and learning.

4.4.3 Limited Access to Internet and Digital Resources

Teachers reported that internet connectivity and access to technological resources remain barriers to AI integration.

One participant shared:

“The challenge is that not all students have internet access, so I have to plan carefully.” (#003.IDI)

Another teacher remarked:

“I don't know if you can use AI when offline... so you need internet, and that's one of the challenges.” (#010.IDI)

These responses demonstrate that infrastructure limitations affect the accessibility and effectiveness of AI-supported learning.

4.4.4 Challenges in Maintaining Academic Integrity and Avoiding Plagiarism

Participants identified plagiarism and misuse of AI-generated outputs as significant concerns.

One teacher stated:

“The problem is plagiarism. Some students submit AI-made work without checking or understanding it.” (#004.IDI)

Another participant observed:

“They rely too much on AI... some just copy and paste everything.” (#004.FGD)

These findings indicate concerns regarding students' responsible use of AI-generated content.

4.4.5 Insufficient Training, Guidance, and Ethical Awareness

Teachers emphasized the need for proper training and ethical guidance for both educators and learners.

One participant explained:

“The challenge is training—both teachers and students need time to learn how to use these tools correctly.” (#005.IDI)

Another teacher stated:

“The challenge is ethical use, making sure they understand when it's okay to use AI and when to think on their own.” (#007.IDI)

These responses suggest that effective AI integration requires not only technical competence but also responsible and ethical use of the technology.

5. DISCUSSION

This study discusses how English language educators make use of AI technology in encouraging critical thinking among their learners. It was established that there is a diversity of AI tools that English educators deploy in improving lesson instruction, aiding writing skills development, fostering greater student involvement, and building higher-order thinking skills. These are the advantages associated with AI deployment among the teachers of the subject; however, challenges that emerged in the study include issues such as ethical concerns, excessive reliance on AI technology, accessibility barriers, and readiness. The discussion of findings will be based on a comparative analysis and TPACK/TAM perspectives.

5.1. AI Tools as Pedagogical Supports for Critical Thinking

As for the results obtained, the study revealed that there is a wide variety of AI tools used by English teachers. These include ChatGPT, Grammarly, QuillBot, Kialo, Curipod, Canva Magic Write, and Twee, which are considered means to foster students' critical thinking and facilitate the teaching process. In this regard, the teachers regarded AI tools as facilitators of lesson planning, writing, argumentation, and creation of engaging class activities.

Firstly, the broad use of ChatGPT supports previous findings (Dizon, 2024; Zhai, 2024) about generative AI being useful in facilitating lesson planning and inquiry-based learning. Secondly, the use of AI tools Grammarly, QuillBot, and Kialo is consistent with Zheng & Yu's (2023) suggestions regarding the use of AI writing tools as a means to foster revision and evaluation skills.

Furthermore, the present study not only identifies the tools but also indicates the purposeful selection of technology by teachers for achieving educational purposes. As has been mentioned above, ChatGPT served for lesson planning and creation of course content, while teachers selected Grammarly and QuillBot to assist in enhancing writing skills. Finally, Curipod and Canva Magic Write were applied to create engaging class activities.

From the perspective of the TPACK model, one may conclude that the current findings confirm the interconnection between the technology, pedagogical, and content knowledge of educators. Thus, technology knowledge manifests itself in the purposeful selection of appropriate AI tools, while pedagogical knowledge manifests itself in designing meaningful learning experiences. At last, content knowledge is manifested in aligning AI-powered activities to the aims of English language learning.

5.2. AI-Supported Strategies and the Development of Critical Thinking

Furthermore, from the survey, it is clear that teachers use AI to provide writing and feedback, promote argumentation and reasoning, and develop engagement and comprehension activities. It means that AI is used not only as a source of information but also as a means to encourage analytical skills and deeper thinking.

This finding corroborates claims made by Dai and Lin (2024), stating that AI is helpful for learners' reflective learning experience because it allows for the assessment and improvement of academic work. Furthermore, as stated by Anthonysamy (2024), AI-assisted feedback fosters reflection and enables learners to reflect on their own thinking

and take appropriate actions when revising. Thus, AI may contribute to the metacognitive development of students.

The findings associated with argumentation and reasoning support Liu and Zhang's (2023) claim that students have to evaluate evidence, compare different points of view, and justify their conclusions under AI-assisted prompts or questioning. These processes can be associated with the process of critical thinking as they involve higher-order cognitive functions such as analysis, synthesis, and evaluation.

From the point of view of constructivism, these findings are congruent with theories suggested by Piaget (1973) and Vygotsky (1978). AI-based activities encourage learners to interact and explore new knowledge. Students should not passively consume information provided but rather assess it critically, evaluate the assumptions made, and form their judgments based on the data acquired.

Nevertheless, some scholars doubt whether AI-based activities actually foster critical thinking or rather give an illusion of developing it. Holmes et al. (2021) suggest that students' involvement in the process can become passive because of inadequate tasks and activities developed by the educator. It means that further research will prove the importance of teacher facilitation as AI-based activities are helpful for promoting critical thinking because of pedagogical practices.

5.3. Benefits and Challenges of AI Integration in English Language Teaching

The study highlighted numerous positive implications of the application of AI in learning, including prompt feedback, greater learner engagement, increased motivation, improvement in writing, and higher efficiency. In addition, the results corroborate Johnson et al.'s (2022) and Luckin et al.'s (2016) claims that AI personalizes learning and provides timely assistance for student learning.

Participants emphasized that AI allows for providing learners with instant responses and feedback, thus reducing delays. This corroborates the social cognitive theory by Bandura (1986), according to which feedback should be provided promptly to increase the learners' self-efficacy and motivate them during challenging tasks. Furthermore, teachers have observed that their students became more engaged and involved in activities when AI technology was utilized.

On the other hand, participants identified various challenges related to AI technology, such as concerns regarding learners' excessive reliance on AI technology, accuracy of the information provided by AI tools, lack of accessibility to AI resources, lack of sufficient training, and academic honesty issues. These concerns are consistent with Kasneci et al. (2023), who warn against negative consequences, such as a lack of critical thinking skills and an inability to solve problems independently, associated with the excessive dependence on generative AI tools.

It should be noted that there is a conflict between the efficiency and the increased burden of mental work that arises due to the fact that students utilize AI technology. This finding contradicts, to some extent, the positive perspective on AI technology viewed by scholars exclusively as a facilitator of learning. Thus, the research demonstrates that AI presents both an advantage and a challenge for teaching.

In conclusion, the study reveals a balanced perspective on the role of AI technology in modern learning environments. This technology is neither entirely positive nor negative, depending on the educational practices adopted by instructors and learners' levels of engagement in them.

5.4. Interpreting the Findings Through TPACK and TAM

First, the analysis demonstrates that the use of artificial intelligence (AI) among teachers is greatly influenced by the two primary concepts in the Technology Acceptance Model (TAM) by Davis et al. (1989), i.e., perceived usefulness and perceived ease of use. Indeed, in their responses, the participants pointed out that AI could facilitate lesson planning, writing development, activities in class, and critical thinking. Thus, their perception of the tool's usefulness was quite high. Furthermore, teachers noted that tools such as ChatGPT and Grammarly were convenient and accessible to users and, hence, easy to use. Thus, their positive attitude towards the use of AI can be explained by these factors.

Second, the results corroborate the theoretical framework for technological pedagogical content knowledge (TPACK). In particular, the data reveal teachers' technological knowledge, as the participants knew various AI tools and could apply them to promote critical thinking (pedagogical knowledge). Besides, the respondents were able to relate the proposed activities to English language learning objectives (content knowledge). More specifically, however, the results show that these aspects of TPACK interacted uniquely. The participants were not simply applying technology but doing it strategically to reach certain educational objectives. Hence, a combination of all these elements seems to be crucial to success.

Nonetheless, the study has its limitations from the perspective of both TAM and TPACK. Indeed, the TAM model highlights the reasons for technology adoption but fails to take into account ethical concerns, dependency on technology, and potential harm to academic integrity. Similarly, the TPACK framework discusses technological, pedagogical, and content knowledge, which does not sufficiently explain the need for an ethical approach to AI in English language learning environments.

6. IMPLICATIONS AND CONCLUSION

The findings of this study highlight the significant role of artificial intelligence (AI) in enhancing students' critical thinking skills in English language education. AI tools were found to support instructional efficiency, promote student engagement, and facilitate reflective and analytical learning processes. Teachers perceived AI not only as a technological resource but also as a pedagogical tool that can scaffold learning, encourage inquiry, and support the development of higher-order thinking skills.

From a pedagogical perspective, the study underscores the importance of integrating AI in ways that promote active learning and critical engagement. AI tools such as ChatGPT, Grammarly, and QuillBot provide opportunities for students to evaluate information, compare responses, and refine their thinking. However, their effectiveness depends largely on how teachers design learning activities and guide students in using these tools critically and responsibly. AI should therefore be positioned as a support system that enhances, rather than replaces, human instruction.

The study also reveals important challenges that must be addressed to ensure effective AI integration. Issues such as over-reliance on AI, concerns about accuracy and bias, limited access to technological resources, and challenges related to academic integrity highlight the need for careful and ethical implementation. These findings emphasize that the successful use of AI in education requires not only technological access but also digital literacy, ethical awareness, and pedagogical competence.

For educational institutions, the findings suggest the need to provide adequate training and support for teachers in integrating AI into their instructional practices. Professional development programs should focus on both technical skills and pedagogical strategies that promote critical thinking. In addition, schools must address issues of accessibility to ensure that all students can benefit from AI-supported learning environments.

For curriculum developers, there is a need to design learning activities that integrate AI while maintaining a strong emphasis on critical thinking and independent learning. AI can be used to personalize instruction and enhance engagement; however, it should be embedded within tasks that require analysis, evaluation, and reflection.

For future research, further studies may explore the long-term impact of AI on students' cognitive development through longitudinal approaches. Additionally, research in diverse educational contexts is needed to examine how AI can be used effectively across different learning environments and student populations.

In conclusion, this study demonstrates that artificial intelligence has the potential to transform English language teaching by enhancing critical thinking, engagement, and instructional efficiency. However, its effectiveness is contingent upon thoughtful, ethical, and pedagogically grounded implementation. AI should be viewed not as a substitute for teachers but as a complementary tool that supports meaningful learning. Ultimately, the development of critical thinking remains a human-centered process, where technology serves as a facilitator rather than a replacement for reflective and independent thought.

Indeed, from the results presented in the paper, it can be seen that artificial intelligence can prove to be a great resource for teaching English and developing critical thinking skills among learners. Nonetheless, certain limitations should be taken into account while analyzing the findings obtained from the research. First of all, this is because the investigation was conducted in one educational institution only and involved fifteen English teachers selected deliberately. Therefore, the findings of the study can reveal perceptions of a particular group and cannot be generalized to other education settings. Nevertheless, some valuable recommendations regarding opportunities and constraints in the application of artificial intelligence in English learning have been identified and discussed.

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