INDONESIAN PRE-SERVICE EFL TEACHERS' PERCEPTIONS AND EXPECTATIONS OF GENERATIVE AI IN TEACHER EDUCATION: A PHENOMENOLOGICAL STUDY

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A B S T R A C T

The rapid growth of Generative Artificial Intelligence (GenAI) in education has created an urgent need to understand how future teachers perceive its benefits, risks, and required skills, especially in the Indonesian context. This current study aims to explore Indonesian EFL pre-service teachers' perspectives toward GenAI and their expectations regarding educational content related to GenAI at teacher training programs. Employing a qualitative approach with phenomenology design, the data in this study were obtained through reflective writings and semi-structured interviews involving pre-service teachers from the English Language Education Department at an Indonesian state Islamic university. The findings of thematic analysis reveal that they perceive GenAI benefits teachers by serving as a brainstorming partner for designing learning activities and saving time, while also supporting students through personalized learning experiences and instant feedback that can enhance their performance. Despite its advantages, GenAI poses challenges such as its occasional unreliability for teachers and potential overreliance that may hinder original thinking and professional growth. Meanwhile, overreliance on AI could lower students' interaction and critical thinking, increase plagiarism risk, and foster the perception that AI is more capable than teachers. Teacher training programs are supposed to address it by focusing on three aspects, namely GenAI literacy, pedagogical knowledge, and ethical considerations. The findings imply that teacher education programs must systematically integrate GenAI literacy, pedagogical application, and ethical guidance to develop competence in leveraging AI effectively while maintaining critical thinking, thoughtful instructional autonomy, and responsible professional practice.

INTRODUCTION

Enhanced development of Generative AI (GenAI) has made it as a useful tool due to its ability to generate content for many purposes, including in English language teaching (ELT). GenAI performs as a good collaborator in lesson designing, assessment, and classroom

management for teachers and facilitates personalized learning for individual student needs (Lee, Jeon, & Choe, 2025; Uralova, 2024; Weng & Fu, 2025; Wu et al., 2025). The decision regarding GenAI tools is derived by many factors, such as cognitive, pedagogical, and affective factors (Kurt, 2025; Zaimoğlu & Dağtaş, 2025). Specifically for pre-service teachers, Wu et al. (2025) and Wang et al. (2024) address several contributing factors of their intention to use GenAI. Those factors are technical aspects (ease of use and benefits), purpose and method, environmental factors (social networks and teacher educators' opinion), and psychological factors (professional self-concept, trust, and risk). These factors highlight the complexity of pre-service teachers' decision-making in adopting GenAI, emphasizing the need for teacher education programs to support their informed and responsible use of AI in ELT.

Studies have indicated the various topics of integrating GenAI into ELT practices, predominantly focusing on in-service and pre-service English teachers. Pre-service teachers were reported as more adaptable in using GenAI, as it can help them enhance content knowledge and access learning and teaching resources (Alshraah et al., 2024). Meanwhile, senior in-service teachers use GenAI only as a supplementary tool, such as assignment management, grading, and automatic feedback, and they did not use it for main instructional tasks (Kim, 2025). Pre-service teachers frequently utilize GenAI as their learning buddy, which can provide them with teaching and learning materials, practical examples, and in-depth content elaboration. Their learning outcomes improved and they expressed willingness to use GenAI tools in the future (Huang et al., 2024). Besides, for their teaching practice, GenAI performed as an assistant to develop lesson plans, teaching materials, and assessment methods (Nyaaba et al., 2024). GenAI utilization by pre-service teachers positively impacted their AI literacy, self-efficacy, and confidence in their teaching capabilities (Meegan & Young, 2025). In conclusion, these studies show that using GenAI can help pre-service teachers become more confident, capable, and digitally literate, making it a valuable tool to support their growth as future English educators.

Despite its usefulness in ELT, GenAI raised concerns on some points regarding the lack of skills and readiness to integrate GenAI effectively into classroom practice, which calls for teacher training programs to integrate GenAI literacy instruction that allows critical awareness and assessment of how GenAI works and the quality of GenAI-generated content (Huang et al., 2025). Another concern about GenAI addresses the trustworthiness and accuracy of GenAI-generated content. It should be carefully examined by the users (Nyaaba et al., 2024). Students who did not use GenAI did so because they valued manual creation and valued originality. They trusted traditional tools compared to experimenting with GenAI (Dell'Erba & Bevilacqua, 2025). Further, GenAI might cause overdependence by its users. It eventually could lower their ability to produce original idea, weaken their critical thinking ability, limit creativity and teacher agency, and hinder their academic growth (Qian, 2025; Van Wyk, 2025; S. Yang & Appleget, 2024). Therefore, GenAI should be used responsibly to address its constraints, such as by establishing ethical guidelines and policies regarding academic integrity (Lee, Jeon, & Choe, 2025; Uralova, 2024; Lee, Choe, et al., 2025). It also signals the need for developing teachers' and students' multiliteracies, assessing GenAI contents critically and meaningfully (Lim & Xin, 2025). While GenAI can make language teaching easier and more creative, it also brings challenges that call for wise, ethical, and balanced use.

Furthermore, Huang et al. (2024) in their study highlighted that teacher education still lacked structured approaches of AI literacies and pedagogical adaptation skills. Also, several English language teacher educators believed that they lacked the competence and confidence to effectively address the implications of GenAI tools (Moorhouse & Kohnke, 2024). It demands an approach that integrates GenAI skills and professional knowledge as a

collaborative learning design, which results in an authentic professional task. It equips pre-service teachers with technological pedagogical content knowledge (Yang & Markauskaite, 2025). A critical teaching challenge amidst the GenAI era is pedagogy, specifically the tendency to cognitive offloading, as well as difficulties in checking AI's accuracy, and concern about academic integrity. Therefore, the use of GenAI should be learned as a competence and it can be started from teacher education (Andewi et al., 2025). Moreover, integrating extensive AI literacy into teacher education curricula is crucial for developing technologically proficient and pedagogically innovative teachers (Abdulayeva et al., 2025; Nair, 2025). Therefore, building strong GenAI literacy in teacher education is key to helping future teachers become confident, skilled, and creative in using AI responsibly in their teaching.

The previous research has involved many users of GenAI by EFL teachers, language learners, and pre-service teachers (Lee et al., 2025). However, none has explored in depth about the pre-service teachers' concerns about GenAI for teachers as well as students and their expectations about the courses at teacher training programs in facilitating them to be advanced EFL teachers amidst the GenAI era under a phenomenology research design. This current study focused on how EFL pre-service teachers perceived GenAI through reflection and semi-structured interviews. The reflections and semi-structured interviews serve as tools to explore meanings, beliefs, and expectations from the lived experiences of the participants. This study provides a new way to look at the lived experiences of EFL pre-service teachers in leveraging GenAI and the meanings they attach to it. It also emphasizes the expectations of pre-service teachers regarding teacher training programs, a topic that has not been explored much from their viewpoint. Accordingly, this study addresses the following research questions: (1) How do Indonesian EFL pre-service teachers perceive Generative AI ? and (2) What are the pre-service teachers' expectations about the teacher training program related to GenAI?.

RESEARCH METHOD
Research Design

Rooted in a qualitative approach, this study utilized a phenomenology research design to explore how EFL pre-service teachers view GenAI and their expectations toward educational content at university related to GenAI. Phenomenology represents the way actions and interactions are shaped by their social and cultural context, along with how participants interpret those actions (Cohen et al., 2018). Phenomenology was chosen to gain in-depth insights into participants' experiences, beliefs, and expectations through their own words. This approach is suitable for capturing participants' experiences and subjective meanings. In this study, the central phenomenon refers to how Indonesian EFL pre-service teachers interact with generative AI, specifically, how they view its advantages, voice their concerns, and share their expectations. This focus is consistent with the phenomenological goal of capturing the core of an experience as it is understood by those who have lived it (Moustakas, 1994). Overall, this design helped the researcher explore the essence of pre-service teachers' experiences with GenAI. It offered a better understanding of their views and expectations in the context of teacher education.

Subject

This study involved 73 participants (indicated as WR 1- WR 73) representing all pre-service teachers enrolled in the English Education Department at a state Islamic university in Indonesia who had completed relevant coursework, including a Digital Literacy course and an ICT for English Language Teaching course, during the data collection stage. The inclusion of the entire population was intended to ensure comprehensive coverage of participants'

perspectives and to provide a holistic understanding of their experiences, beliefs, and expectations regarding the use of GenAI in teacher education. From the initial group, 10 participants (indicated as SI 1 – SI 10) were specifically chosen for semi-structured interviews based on the meaningfulness and depth of their written reflections, indicating their ability to articulate rich experiences and insights related to GenAI. They also confirmed their willingness to engage further in the study.

Instruments

The instruments in this study were a written reflection and an interview guideline. All 73 participants wrote individual reflections on their experience and beliefs of GenAI, as well as expectations for their educational program related to GenAI. It was conducted through online submission using a Google Form. The reflective writing task asked participants to reflect on how they used AI, the benefits and challenges they experienced, the feelings and concerns they encountered while engaging with it, and their expectations for the supporting courses needed. In this context, written reflection provided rich, introspective, and personal data from participants about their lived experiences. Reflective writing allowed participants to express emotions, thoughts, and expectations in depth (Jasper, 2005). Follow-up interviews were conducted with 10 participants following the interview guidelines to explore the themes that came up in the written reflections. This selection allowed for a more detailed exploration of themes that arose from the written reflections. In phenomenological research, interviews are typically semi-structured. This means the researcher uses a general set of guiding questions but stays open to following the participant's lead, asking follow-up questions based on what the participant shares. This flexible approach helps uncover deeper, more personal insights into their lived experiences (Moustakas, 1994). All interviews took place in a semi-formal setting, either face-to-face or through online applications, depending on the participants' availability. Each interview lasted about 20 to 30 minutes and was recorded with the participants' consent. Data saturation was achieved as the researchers found that subsequent interviews no longer expanded the identified meaning and no new themes emerged.

Data Analysis

The collected data from both written reflections and interview transcripts were analyzed thematically (Braun & Clarke, 2006). First, the researchers read the data several times to gain an overall understanding. Next, preliminary codes were made to label important features of the data. These codes were grouped into potential themes that showed broader patterns of meaning, which were then carefully reviewed and refined to make sure the themes truly represent the data. After that, the themes were named to clearly express their essence. Finally, the researchers put together the report, connecting the themes with supporting evidence to present a clear narrative of the findings. Thematic coding was conducted by both researchers, who carefully compared and discussed each piece of data to ensure consistency and minimize potential bias. To ensure the validity and trustworthiness of the findings, the study used two key strategies, namely member checking and data triangulation. In member checking, the participants were given the chance to review and confirm the accuracy of their interview transcripts and the preliminary interpretations of their responses (Birt et al., 2016). Also, for triangulation purposes, data from written reflections and semi-structured interviews were compared and cross-analyzed to ensure consistency and depth in interpreting the findings. These procedures strengthened the credibility and trustworthiness of the findings, ensuring that the interpretations accurately represented the participants' lived experiences. Ethical considerations were followed throughout the research process. Consent was obtained from

every participant, and their privacy was ensured by removing any identifying information when reporting the findings.

RESEARCH FINDINGS AND DISCUSSION
Research Findings

The research findings have revealed several themes from the written reflections and semi-structured interviews regarding how the pre-service teachers' beliefs on GenAI for teachers and students, as well as what they expect from the teacher training program. The thematic analysis has identified pre-service teachers' perspectives on the benefits and concerns of GenAI for themselves as well as their future students. Pre-service teachers viewed GenAI as helpful for both teachers and students by assisting teachers in brainstorming and saving time, while offering students personalized learning and instant feedback. However, concerns emerged about overreliance on AI, which may hinder creativity, critical thinking, and increase plagiarism risks. Furthermore, their expectations of the course pertain to the development of skills in utilizing AI, as well as the enhancement of knowledge and pedagogical competencies, in order to avoid overreliance on AI and to foster effective collaboration. The findings are presented with supporting data derived from written reflections (WR) and/or semi-structured interviews (SI).

Table 1
Findings from thematic analysis

Research Questions	Theme	Sub-Theme
How do Indonesian EFL pre-service teachers perceive Generative AI?	AI served as a beneficial tool for teachers and students	For teachers: 1. GenAI can perform as a brainstorming buddy to design learning activities 2. GenAI can help save teachers' time For students: 1. AI provides a personalized learning experience and instant feedback that can enhance students' performance
	AI might cause negative impacts for teachers and students	For teachers: 1. Teachers might be overly reliant on AI, making them lack original ideas and hindering their professional growth For students: 1. Students might be overly dependent on AI, which can reduce their critical thinking, interaction, and increase plagiarism risk 2. Students might perceive AI as more capable or useful than teachers
What are the pre-service teachers' expectations about their education program related to GenAI?	GenAI literacy	1. Recognizing how GenAI works and its drawbacks 2. Having the ability to integrate GenAI into teaching practice
	Pedagogical aspect	1. Acknowledging the purpose of learning 2. Focusing on promoting critical thinking skills
	Ethical aspects	1. Teachers should evaluate the AI-generated content and not solely depend on it. 2. Help students to use GenAI responsibly

How the EFL pre-service teachers perceive GenAI

The participants perceived GenAI as a valuable tool that could help them with teaching aspects, such as lesson planning, content creation, and language modeling. As GenAI could generate lesson plans for their classes, the pre-service teachers could use it for brainstorming and considerations for their teaching practice. GenAI performed as an easy-to-use tool that provides various options for classroom activities. They believed that GenAI

could provide them with suggestions for classroom activities that could be interesting and fun. It was also able to modify the lesson plan to suit the students' needs and specific criteria based on the instructed prompts as expressed in the following data.

> "If we use it as a partner for sharing and brainstorming, because AI can give lot of information related to the topic." (WR 3)
>
> "AI can help provide automated feedback to students, help teachers structure materials to suit individual needs, and create more interactive and engaging learning experiences. Teachers can focus more on the human aspects of teaching, such as building motivation, creativity and emotional communication." (WR 5)

Here, they perceived GenAI as a discussion buddy to enhance their teaching practice and save their time. Therefore, teachers would have more time to focus on their teaching practice, building students' motivation, and maintain student-teacher communication. The following interview data reveal key insights from the pre-service teachers.

> "I think AI can tailor lessons to each student. Also AI handles grading, freeing up teacher time." (WR 7)
>
> "GenAI can help to simplify the work when later becoming a teacher, such as for example assignments that can be done more flexibly, then it can make learning materials more interesting for students so that students can be more excited so as to create interactive learning."(WR 46)

These findings show that through the courses at their study program, the pre-service teachers had been familiar with GenAI dan they already used it. This indicates the readiness and willingness of pre-service teachers to integrate Generative AI into their teaching practices. Their openness to adopt such emerging technologies reflects a critical step toward fostering innovation and enhancing pedagogical effectiveness in EFL classrooms.

For students, the participants also acknowledged the advantages of GenAI for their future students in facilitating personalized learning, promoting self-directed study, and offering immediate feedback. By doing so, students can be more autonomous in learning English and excel with their own learning style and preference. The following quotes show the pre-service teachers' views.

> "It can help with speaking and listening practice, so students can learn without being afraid of getting judge." (WR 38)
>
> "AI can make learning more personalized and engaging by adapting lessons to each student's needs, providing immediate feedback, and students can open them anytime and anywhere. This can help students stay motivated and improve their skills faster." (WR 45)
>
> "It can also help students overcome language barriers by offering instant translation or pronunciation support, making English more accessible to learners around the globe. For those who use AI wisely, it becomes a 24/7 companion, helping them learn at their own pace and in creative ways." (WR 48)

On the other hand, the participants voiced concerns about becoming overly dependent on GenAI, potentially hindering their creativity and professional development. GenAI which could provide fast content or information, and instant feedback could lead them use the tool excessively. When they got dependent on the tool, they were afraid to lose their own original idea and creativity. They would like to be less motivated to read and explore the learning materials and activities by themselves. Participants' reflections provide valuable insight into this issue.

"But I also feel worried because I might become too dependent on AI and lose my own creativity or teaching skills. So, I need to use it wisely and not forget the human side of teaching." (WR 42)

"And for the problem for AI era, it's also can decrease teachers critical thinking. Because if they just use it without understand it, it will make the previous statement more close and real. Also the new teachers in my generation maybe get used to it for using AI just for a simple things." (WR 51)

"For teachers, over-reliance can lead to "shortcuts" by adopting AI-generated lesson plans or materials without in-depth on-the-ground adjustments, which can ultimately reduce the quality and engagement of education in the classroom." (SI 8)

They also had the same concern on GenAI overdependence would be experienced by their future students. The pre-service teachers reported that they were afraid that GenAI could cause possible adverse effects, such as students becoming overly reliant on AI for doing their tasks. It could lower students' critical thinking skills. Further, as GenAI could provide diverse information they need, students might lack classroom engagement and GenAI also heightened risk of plagiarism.

"I'm also worried that students might become too dependent on AI and lose their critical or creative thinking skills." (WR 50)

"This over-reliance could weaken their language skills and make them dependent on AI, reaching a level of absurd laziness where they stop caring about improving altogether." (WR 48)

From student's perspective, overreliance on GenAI might weaken their critical thinking skills and make them less active in shaping their own learning. This dependence may ultimately slow down their learning progress.

There was also apprehension that students might view GenAI as more competent or beneficial than teachers, potentially diminishing the perceived value of the teacher's role. The following quotation from a participant illustrates this point clearly.

"Students may become too dependent on AI and lose creativity and communication skills. Further, the roles of the teacher might not seem as important, which could lead to less communication between teachers and students." (WR 65)

"The fear that teacher's role can be replaced by AI, because with AI everything will be easier and instant. So that students underestimate the teacher's explanation and assignments from the teacher and they think to simplify the task with AI." (WR 20)

This underscores the need for teacher training programs to provide teacher candidates with relevant skills that foster both confidence and competence. It is to emphasize that competent teachers who develop strong professional skills will not be replaced by AI; rather, they will be empowered to use GenAI as a valuable aid to enhance their teaching and learning practices.

Pre-service teachers' expectations about courses that enable an effective teacher-GenAI collaboration

To collaborate effectively with GenAI tools is not an instant skill; it must be learned. Pre-service teachers need to know how GenAI works. The thematic analysis revealed that digital and AI literacy should be included in the curriculum of teacher education. The course should combine both theoretical knowledge and practical aspects. This is to respond to the rapid development of GenAI and tackle its negative impacts on education.

"I hope that the Study Program can include AI literacy in the curriculum, provide practical training, and also use ethics guidelines. So students are ready to use GenAI properly without neglecting creativity. (SI 4)

"As a pre-service teacher, mastering digital literacy, especially in the context of AI technology is very important." (SI 5)

By explicitly including digital literacy, or specifically GenAI literacy, teacher training programs could provide pre-service teachers with essential skills to integrate GenAI into classroom instructions. It helps recognize how GenAI works as well as its strengths and weaknesses. Therefore, they can be more confident in engaging GenAI in classroom activities. It can be done by combining both theory and practice.

The literacy of GenAI needs to be strengthened by pedagogical knowledge through their course at the teacher education program. This knowledge helps them ensure the GenAI content can be adjusted to pedagogical needs, which eventually helps teachers and students in the teaching and learning process, for example, by ensuring that the learning activities can help the students achieve the learning goals and improve their critical thinking, as one of the important aspects of 21st-century skills.

"Helping students and their lecturers in the learning process in the classroom to be more interesting, helping students to think more critically and providing opportunities to be able to delve deeper into the material." (SI 7)

"Focusing on pedagogical goals is not only a curriculum that emphasizes the use of AI as a means but also aligns with the initial goals of learning." (SI 1)

By recognizing GenAI limitations and pedagogical knowledge to assess the suitability of the AI-generated content with learning goals, teachers are supposed to utilize GenAI more effectively.

Once pre-service teachers have been equipped with GenAI literacy and pedagogical knowledge, the ethical considerations in integrating GenAI are still need to be addressed.

"Teacher must be able to guide students to use AI responsibly. (SI 5)

"GenAI is only a tool, not a substitute for our brains. So, students still have to discuss, present, and reflect." (SI 10)

The use of GenAI needs to be declared clearly so that the extent of its contribution can be assessed. It would hinder pre-service teachers from relying solely on AI-generated content and encourage them to produce original ideas. For this reason, teacher training programs should establish clear guidelines accompanied by a pedagogical framework. The findings on the pre-service teachers' expectations about courses in teacher education programs have underscored the importance of GenAI literacy, pedagogical knowledge, and ethical considerations in teacher training programs.

Discussion

The findings highlight positive acceptance toward GenAI. The pre-service teachers' experiences in using AI had shaped their positive attitude toward GenAI due to its ability to help them do many tasks. By drawing on the Technology Acceptance Model (TAM), the findings show that pre-service teachers' positive acceptance of GenAI is strongly shaped by prior experience, which enhances their perceived usefulness (Davis, 1989). It confirms the previous study, which reported that previous experience influences perceived usefulness, attitude, and intention to use GenAI. Together with AI self-efficacy, perceived usefulness was reported that the most influential factor of intention to continue using GenAI (Gao et al., 2025; Zheng et al., 2025; Alshraah et al., 2024). In addition, GenAI also has the potential benefits in facilitating students' English learning, especially autonomous learning outside the classroom. It reinforces the results of the prior research, indicating that GenAI has the potential to increase learner motivation and confidence by delivering immediate feedback

and personalized, engaging learning resources based on students' preferences. Also, it underscored the compatibility of GenAI to adapt to individual learner needs and facilitate intercultural competence by incorporating diverse cultural contents (Weng & Fu, 2025). Moreover, GenAI can perform diverse roles, including learning tutor, feedback provider, cognitive stimulator, and conversation partner, which allow students to learn on their own pace and preference (Lee et al., 2025).

Grounded in the Technological Pedagogical and Content Knowledge (TPACK) framework (Koehler & Mishra, 2009), this study offers new insight. It shows that pre-service teachers view GenAI not just as a tool, but as a teaching partner, which influences their technological and teaching knowledge. While confirming that previous experience, usefulness, and confidence in AI influence GenAI acceptance, this study provides new insight. It shows that pre-service teachers see GenAI not only as a helpful tool but also as a teaching partner. GenAI can tutor, give feedback, encourage critical thinking, and support independent learning. This marks a change in how GenAI is viewed, seeing it as a collaborative agent that personalizes learning, encourages autonomy, and enhances intercultural engagement. This extends the current understanding of GenAI's role in EFL teacher education.

However, pre-service teachers who use GenAI excessively, including to complete a simple thing, can be easily trapped into overreliance. While GenAI improves efficiency, it also raises worries about excessive dependence, which could result in the delegation of essential cognitive and metacognitive abilities (Qian, 2025). Furthermore, this overdependence has the potential to undermine critical thinking skills, lower creativity, limit teacher agency, and ultimately impede academic and professional development (Van Wyk, 2025; Yang & Appleget, 2024). As the generated contents do not come from the original idea, pre-service teachers need extra efforts to comprehend the contents. Eventually, they could fail in understanding the key concept and lose classroom engagement during their teaching practice. Viewed from TAM and TPACK lenses, although pre-service teachers recognize GenAI's usefulness and pedagogical values, its excessive use risks overreliance that brings negative impacts. It highlights the need for balanced, well-designed GenAI training that strengthens both technology acceptance and technological–pedagogical integration.

The easy access to GenAI tools may tempt students to misuse them, increasing the risk of plagiarism and undermining academic integrity (Van Wyk, 2025; Yang & Appleget, 2024). This finding implies that teachers and schools must strike a careful balance when using GenAI in learning, ensuring it serves as a helpful resource rather than replacing students' independent thought and creative abilities. Without such balance, there is a risk that students may become passive learners, which could undermine the development of essential cognitive and professional skills. Therefore, targeted strategies should be implemented to integrate GenAI effectively into both instructional design and classroom activities for pre-service teachers (Nyaaba et al., 2024). There is an urgent need to highlight GenAI's potential in aiding pre-service teachers to enhance their competencies. Incorporating AI training tailored to specific disciplines in teacher education programs is necessary to develop confidence and ensure practical application (Barbieri & Nguyen, 2025). This also serves as an anticipatory measure to address the lack of preparedness among EFL teachers to integrate AI into their teaching (Huang et al., 2025). In addition, relevant experience and well-designed training within the learning process can enhance preservice teachers' acceptance and positive attitudes toward GenAI, which contribute to their future teaching practice (Gao et al., 2025). These insights highlight the important role of teacher education in promoting GenAI literacy and ethical understanding. It ensures that future teachers not only learn to use

AI tools but also apply them responsibly to support meaningful, creative, and mindful learning.

AI literacies are explained as a multidimensional process that pre-service teachers need to recognize, involving recognizing AI's linguistic strengths and failings, engineering effective prompts, and establishing critical awareness of AI limitations. Leveraging GenAI without adequate background knowledge, linguistic skills, and critical evaluations may risk in less effective results (You & Zhang, 2025). For example, EFL pre-service teachers must be aware that GenAI has pedagogical limitations in multilingual environments, since it often generates standard English that may not accurately reflect the language's diverse use across different sociolinguistic communities (Lee, et al., 2025). Therefore, they need to adjust their materials or revise the prompts. With an appropriate level of awareness by its users, GenAI could facilitate intercultural competence by integrating assorted cultural content into language learning (Weng & Fu, 2025). This shows that building strong AI skills is crucial for pre-service teachers who advocate critical evaluation of AI outputs, ethics, and human–AI interaction (Long & Magerko, 2020). It helps them use GenAI not only as a language and teaching support, but also as a way to promote critical awareness and intercultural understanding in language learning. Therefore, they need to adapt prompts and outputs effectively.

The integration of GenAI skills with professional knowledge can serve as a foundation for collaborative learning design, leading to the creation of authentic professional tasks (Yang & Markauskaite, 2025). For example, enhancing their original idea with GenAI input would contribute more on their job security and teaching autonomy (Parviz & Arthur, 2025). The last student reflective practice was necessary to allow students to assess GenAI integrations in their learning activities and their achievements to improve student learning outcomes (Liu et al., 2025). By providing educators with the essential skills and knowledge, this approach aims to improve teaching and learning outcomes, ultimately creating a more innovative and effective educational environment (Nair, 2025; Negara et al., 2025). Integrating insights from TAM, TPACK, and critical digital literacy, it underlines the urgency of GenAI-supported teacher education, which simultaneously builds acceptance and usefulness (TAM), pedagogical–technological knowledge integration (TPACK), and the critical capacity to evaluate and ethically use AI. It enables pre-service teachers to maintain professional autonomy, design authentic tasks, and engage in responsible and thoughtful AI-enhanced learning.

CONCLUSION

This study reveals how Indonesian EFL pre-service teachers respond to GenAI. The findings indicate GenAI as a beneficial tool that can support classroom learning, providing practical benefits for teachers and students. For teachers, GenAI can be a creative partner. It helps design engaging learning activities and reduces workload, so it frees up teachers' time. For students, it offers personalized learning and instant feedback, which can improve their performance. However, the benefits come with significant concerns that must be addressed. Teachers may struggle with the reliability of GenAI and the risks of becoming too dependent on it, which could limit their creativity and growth. Students who depend too much on AI might have issues with critical thinking, engagement, and academic honesty. They also potentially see GenAI as more capable than their teachers, which is detrimental to their learning process at school. To tackle these drawbacks, teacher education programs need to equip future educators with GenAI skills, solid pedagogical knowledge, and a clear ethical approach to responsible use.

It is worth noting that this study focused on participants from a single study program at one university, which may not reflect the wider educational environment. Future research

should include a diverse group of participants from various universities to achieve a broader understanding. Nonetheless, the findings strongly indicate that incorporating GenAI into teacher training, with an emphasis on critical awareness, effective teaching, and ethical use for ensuring this beneficial tool improves teaching and learning instead of harming it.

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