Adopting and Adapting AI for EFL Teaching in Indonesian Higher Education

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Abstract

Like a double-edged sword of technology, the swift development of Artificial Intelligence (AI) in English Language Teaching (ELT) has generated both benefits and drawbacks. While AI offers efficiency, personalization, and diverse learning resources, its integration requires critical consideration of pedagogical, ethical, and contextual factors. This study investigates how EFL educators in Indonesian higher education perceive, adopt, and adapt AI tools in their teaching, focusing on acceptance, practical use, perceived risks, and training needs. This study applied a qualitative case study approach, in which five lecturers with previous experience in using AI for language teaching were interviewed through a semi-structured format. The collected data were examined using thematic analysis, guided by the Technology Acceptance Model (TAM) and the framework of professional development theory. Findings reveal varied acceptance levels, such as some educators demonstrate a high adoption tendency, others adopt it selectively to align with pedagogical goals, and some engage in critical adoption with verification. Reported benefits include time savings in material preparation, enhanced engagement, and increased flexibility., Meanwhile, concerns involve content accuracy, over-reliance by students, reduced teacher–student interaction, and uneven digital infrastructure. Most participants expressed the need for targeted, practice-oriented training, particularly in designing AI-assisted learning media. The research highlights that institutional support, clear ethical frameworks, and continuous professional training are essential to guarantee that AI functions as a supportive tool rather than substituting teachers' expertise. Beyond highlighting varied adoption tendencies and training needs, this study informs the development of professional development programs and ethical guidelines tailored to the realities of Indonesian higher education. While the study is limited to a small number of lecturers in a single context, it opens pathways for comparative and longitudinal research that can further enrich global understanding of AI integration in EFL education.

Keywords: *AI Adoption, EFL Educators, AI Integrated-ELT, TAM, Higher Education.*

1. Introduction

In recent years, AI platforms such as ChatGPT, Grammarly, and QuillBot have rapidly advanced in EFL education, transforming how teachers design lessons, assess students, and provide feedback. These innovations offer efficiency and personalization, but their meaningful adoption depends largely on educators' competencies and readiness to integrate them into pedagogy (Huynh, 2024; Jiang, 2022). However, integrating AI in teaching is not without challenges, as teachers must balance technological opportunities with concerns related to accuracy, ethical use, and professional development (Gupta et al., 2024; Zou et al., 2025). Therefore, examining how EFL educators in Indonesian higher

education perceive, adopt, and adapt AI tools is essential to understand both the opportunities and risks of this emerging practice.

Previous research on the integration of AI in education often overemphasizes its technological potential while neglecting to embed these innovations within comprehensive pedagogical frameworks. For instance, studies frequently rely on large-scale quantitative surveys, which limit the depth of exploration into teachers' actual experiences and the challenges they face when using AI tools (Nazaretsky et al., 2022). Furthermore, there is a substantial lack of empirical data concerning AI implementation in developing countries, where unique contextual factors such as infrastructure readiness and academic culture significantly influence the success of integration (Adewusi, 2025). Research addressing these contexts remains minimal, creating an unbalanced narrative that fails to fully capture the real landscape of AI in education (Aghaziarati et al., 2023; Çelik et al., 2022). Additionally, the necessity for institutional support and its interaction with pedagogical practices is often overlooked, revealing a critical gap in understanding the interplay between technology adoption, educator preparation, and environmental factors (Göçen & Aydemir, 2020).

The scarcity of studies examining how EFL teachers navigate AI integration represents a significant gap in the literature. Most existing research focuses primarily on technical effectiveness or student perceptions, often marginalizing teacher perspectives and their evolving attitudes towards AI tools from initial enthusiasm to growing caution (Benaicha & Abdellatif, 2024). This lack of comprehensive exploration overlooks the nuances of teachers' lived experiences and the pedagogical challenges they encounter while integrating AI into their practices (Benaicha & Abdellatif, 2024). Moreover, there is a notable absence of research that addresses how EFL teachers strategically balance the benefits of AI with reflective and ethical teaching principles, further complicating the discourse surrounding AI in education (Nugroho & Mutiaraningrum, 2020). This oversight can hinder the development of necessary support structures for educators tasked with implementing these technologies in diverse educational contexts (Atmojo & Nugroho, 2020). Therefore, while AI holds considerable promise for language education, gaining a more comprehensive insight into the experiences and strategies of EFL teachers is crucial for the successful integration of AI and the promotion of ethical teaching practices.

This study offers a distinctive contribution by combining theoretical and empirical analysis to examine how EFL educators in Indonesian higher education perceive, adopt, and adapt AI tools in their teaching. Drawing upon the Technology Acceptance Model (TAM) and professional development perspectives, it investigates factors related to acceptance, practical use, perceived risks, and training needs. In doing so, the study contributes context-specific insights that inform policies and training programs for responsible and effective AI integration in English language teaching. The main value of this study is offering in-depth, context-based insights into the ways EFL educators perceive, adopt, and adapt AI platforms within their teaching practices. It identifies the strategies they employ to maximize AI's potential while mitigating associated risks and challenges. The findings are expected to inform educators, policymakers, and technology developers in crafting ethical, sustainable, and pedagogically sound AI integration strategies. This study focuses on the following research questions: (1) How do EFL educators perceive the potential and limitations of AI in English teaching? (2) How do EFL educators implement strategies to utilize artificial intelligence while addressing its risks and challenges? (3) What factors influence the shift in EFL educators' attitudes from initial enthusiasm to caution?

2. Literature Review
2.1. Technology Acceptance of AI in EFL Pedagogy

The integration of Artificial Intelligence (AI) in English as a Foreign Language (EFL) pedagogy has increasingly been examined through the lens of the Technology Acceptance Model (TAM). Initially developed by Davis (1989) and extended by Venkatesh and Davis (2000), perceived usefulness (PU) and perceived ease of use (PEOU) are the two central beliefs that, according to the Technology Acceptance Model (TAM), largely determine whether individuals adopt a technology. While PU describes how much an individual thinks a technology can improve task performance, PEOU emphasizes the perception that the technology is straightforward and requires little effort to operate.

In EFL contexts, PU often manifests in educators' beliefs that AI as large language models (e.g., ChatGPT) and AI-enabled writing support (e.g., Grammarly), can improve the quality and efficiency of lesson preparation, feedback provision, and assessment (Dizon & Gayed, 2024; Zawacki-Richter et al., 2019). Huynh (2024) found that integrating AI-based tools into English learning can enhance EFL students' learner autonomy through personalized learning experiences, although success depends greatly on digital literacy levels and adequate pedagogical support. PEOU reflects the intuitive design and accessibility of these tools, which can lower barriers to adoption, particularly in resource-constrained environments. Empirical syntheses indicate that when PU and PEOU are high, educators exhibit positive attitudes toward using (ATT) and stronger behavioral intention (BI) to integrate AI into teaching practices (Venkatesh & Davis, 2000; Zawacki-Richter et al., 2019).

However, the application of TAM in AI adoption within EFL pedagogy must also consider external variables, such as ethical concerns (bias, misinformation), institutional support, and technological infrastructure. The integration of AI in EFL education in Indonesia presents significant challenges, particularly the disparity in digital infrastructure and teacher readiness, which complicates the effective deployment of AI tools (Bachtiar, 2025; Suharno et al., 2025). While AI has the potential to enhance learning experiences, educators often navigate complex decisions to ensure inclusive and meaningful practices. Previous studies highlight the lack of focused research on strategies for balancing AI's benefits with ethical considerations crucial for reflective teaching (Muthmainnah et al., 2024; Suharno et al., 2025). Teachers' perceptions often shift from initial enthusiasm to caution, signaling a need for deeper exploration of their experiences and contextually relevant guidelines (Ithriyah & Meilana, 2025; Suharno et al., 2025). International frameworks, such as UNESCO's Recommendation on the Ethics of AI, emphasize the importance of transparency, human supervision, and fairness in the use of AI for education (United Nations Educational, 2021).

2.2. AI-Assisted Teaching Practices in EFL Contexts

Understanding how AI is operationalized in EFL teaching requires examining AI-assisted practices through a combination of TAM, the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006), and ethical teaching principles (United Nations Educational, 2021). TPACK highlights the interaction among technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK), providing a robust model for evaluating how AI tools are integrated into instructional design, delivery, and assessment.

In practice, AI-assisted teaching in EFL contexts involves: (1) Material design using AI to generate or adapt lesson content in text, multimedia, and assessment formats that are contextually relevant to learners' proficiency levels, cultural backgrounds, and curricular goals; (2) Instructional implementation embedding AI tools into face-to-face and online EFL

learning activities for adaptive exercises, interactive language practice, and personalized feedback that target language skills; and (3) Evaluation and reflection assessing the pedagogical effectiveness of AI for specific EFL outcomes (e.g., speaking confidence, reading comprehension) and refining strategies accordingly. Evidence from higher education in EFL settings suggests that AI can expedite lesson preparation, facilitate differentiated instruction, and provide diverse language-focused resources, aligning with PU in TAM while operationalizing TPACK's intersections (Dizon & Gayed, 2024; Escalante et al., 2023; Zawacki-Richter et al., 2019).

Challenges include selecting a platform in accordance with curriculum objectives, managing the risk of student overreliance on AI, safeguarding data privacy, and ensuring equitable access. Position papers and empirical reviews stress blended approaches that retain meaningful teacher–student interaction and uphold academic integrity (Dwivedi et al., 2023; Kasneci et al., 2023; United Nations Educational, 2021). In Indonesia, these issues are compounded by infrastructural limitations, digital literacy disparities, and the need to adapt tools to cultural and linguistic contexts, making context-sensitive guidelines and sustained institutional support crucial.

3. Method
3.1. Research Design

This study employed a qualitative research approach, which was considered suitable for capturing detailed descriptive data and providing deep insights into participants' perspectives. As Creswell and Poth (2018) emphasized, qualitative research is particularly effective when the aim is to explore complex human experiences shaped by context, perceptions, and evolving practices.

Following Yin's (2009) guidance, a case study design was adopted for this approach. A case study enables an in-depth investigation within a bounded system, making it possible to examine phenomena in their real-life context. In this research, the bounded system consisted of EFL lecturers from higher education institutions in Indonesia who had prior experience using AI tools in their teaching.

The use of a case study design served the purpose of exploring how lecturers perceive, adopt, and adapt AI tools in their teaching. Specifically, the design enabled the researcher to examine issues of acceptance, practical use, perceived risks, and training needs, providing a focused understanding of lecturers' practices within an authentic educational environment.

3.2. Participants

Participants were selected using purposive sampling, targeting individuals who met specific criteria relevant to the research objectives. The sample consisted of five EFL lecturers from one of the Islamic higher education institutions in Indonesia who had prior exposure to AI tools in teaching. The site was deliberately chosen because it represents a context where lecturers have begun to actively engage with AI in their teaching, making it particularly relevant for exploring early experiences, adoption tendencies, and challenges of AI integration in Indonesian higher education. These participants were chosen for their ability to provide detailed and reflective accounts of integrating AI into language instruction. The selection considered variation in teaching experience, institutional context, and familiarity with educational technologies to ensure diversity of perspectives. All participants were actively engaged in teaching English at the tertiary level, possessed experience in curriculum development, and had experimented with AI tools such as ChatGPT, Grammarly, and AI-based language learning platforms.

3.3. Data Collection

Semi-structured interviews were employed in the data collection process to obtain comprehensive insights from participants' perspectives. This way of collecting data not only offered the flexibility to probe deeper into individual experiences but also ensured that the discussion remained aligned with the central themes of the research questions. The interview protocol was designed to investigate three broad areas: (1) lecturers' acceptance of AI in EFL teaching, (2) their experiences and challenges in integrating AI, and (3) their professional development needs related to AI literacy.

Interviews were conducted individually, either in Indonesian or English, depending on participant preference, to ensure comfort and clarity in expression. Each interview lasted between 25–40 minutes and was audio-recorded with informed consent. The interviews took place over two weeks in a setting chosen by the participants, ensuring convenience and minimal disruption to their professional schedules. All audio recordings were transcribed verbatim, and participants were also involved in reviewing the interview transcripts to ensure the accuracy of the data, making sure that the information recorded truly reflected the interviews.

3.4. Data Analysis

The interview data were analyzed using Braun and Clarke's (Braun & Clarke, 2006) six-phase Thematic Analysis framework. The data analysis process began with the researcher carefully reading the transcripts several times to become familiar with the content and to record initial impressions. This was followed by open coding to capture meaningful segments of information across the data set. To enhance credibility and minimize potential bias in the interpretation of initial impressions, the coding process was cross-checked by a second researcher, and any discrepancies were discussed until consensus was reached. The resulting codes were then clustered into larger categories that suggested emerging themes. These themes were subsequently reviewed to ensure internal consistency and distinctiveness, accurately reflecting the voices of participants. After refinement, the themes were clearly defined and labeled to capture their central ideas. In the final stage, the themes were interpreted through the perspectives of the Technology Acceptance Model (TAM) and professional development theory, in order to explore how individual beliefs, institutional settings, and perceptions of benefits or risks influence lecturers' adoption of AI in EFL instruction.

4. Results

4.1. Acceptance and Perceptions toward the Integration of AI in ELT

The interviews in this study show a pattern of conditional acceptance among lecturers. They welcome AI's potential but differ in their level of trust, the risks they focus on, and the conditions for acceptance.

> *So far, I strongly agree with using AI in English teaching. AI helps me create materials and questions. However, I am not fully convinced it directly improves learning effectiveness. I always cross-check, filter, and edit AI-generated information to ensure it fits my class objectives.* (R1)
>
> *AI can help teach English and provide a better learning experience. However, teachers must still play an important role in giving guidance and motivation. Using it too often can make students dependent and limit their ability to learn independently, so it must align with learning goals.* (R2)
>
> *I am very enthusiastic about AI's potential to improve the effectiveness of*

English learning. AI can provide personalized feedback, adaptive exercises, and engaging learning experiences. But I am also aware of risks such as algorithmic bias and misuse, so its use must be wise. (R4)

These quotes show that while all respondents accept AI, their levels of trust differ. R4 is fully optimistic, seeing AI as a game-changer in language teaching. R2 takes a moderate stance, accepting AI only if it clearly supports learning goals and does not harm student independence. R1 shows constructive skepticism, using AI with strict verification to ensure information accuracy before applying it in class. Their focus on risks also varies: R1 highlights inaccurate information, R2 warns about student dependency, and R4 points to algorithmic bias and misuse. These differences reflect their teaching experience, digital literacy, and pedagogical priorities.

These findings resonate with previous studies, which suggest that teachers tend to accept AI when its benefits are clear, easy to use, and aligned with learning goals, but such acceptance is often mediated by perceived risks (Adewusi, 2025; Huynh, 2024; Zawacki-Richter et al., 2019). This variation can also be understood through the lens of the Technology Acceptance Model (TAM), which emphasizes the role of perceived usefulness and ease of use (Davis, 1989), and the Technological Pedagogical Content Knowledge (TPACK) framework, which highlights the importance of aligning technology with pedagogy and content (Mishra & Koehler, 2006). Thus, the results suggest that AI adoption in EFL classrooms is not a uniform process but a reflective practice shaped by perceived benefits, risks, and contextual pedagogical considerations.

4.2. Experiences and Challenges in Integrating AI into English Language Teaching

Incorporating AI into English teaching not only offers clear benefits for teachers and students but also introduces notable issues. Previous research (Dwivedi et al., 2023; Huynh, 2024) highlights that AI can improve efficiency in lesson preparation, diversify teaching materials, and provide adaptive learning experiences. However, these advantages often come alongside technical, pedagogical, and infrastructural barriers. Factors such as internet connectivity, tool compatibility with curricula, and students' familiarity with AI have a significant contribution in determining the success of its integration.

Interviews in this study revealed that while lecturers value AI for saving time and enriching teaching methods, they also face obstacles that require creative solutions.

I find AI very helpful when preparing English teaching materials. I can ask it to create basic and advanced content, as well as various types of questions like multiple choice and essays. This saves me hours of work, though sometimes I need to refine the results to meet my expectations. (R1)

AI can actually make learning more fun and feel more suitable for each student. But the problem is, sometimes the internet is hard to access, and teachers also still need to learn how to use AI effectively. Besides that, if not careful, AI can make teachers and students talk to each other less directly. (R2)

Before using AI, I need to explain it to my students because not all of them are familiar with it. But I find its features such as creating PowerPoints, videos, and other formats very useful in delivering content. (R3)

Choosing the right AI tools that fit the curriculum and school infrastructure is not always easy. However, when implemented well, I see increased motivation and participation from students, especially in vocabulary and grammar activities. (R4)

These responses reveal a consistent trend: while lecturers value AI's efficiency,

flexibility, and potential to enhance teaching, they also acknowledge a range of challenges spanning technical, pedagogical, and institutional aspects. R1 underlines the need to balance time savings with quality control, R2 draws attention to infrastructure gaps and the necessity for targeted training, R3 highlights the importance of preparing students so they can engage effectively with AI tools, and R4 points to the critical role of ensuring tool compatibility with curriculum and resources. Taken together, these perspectives indicate that integrating AI into EFL teaching is not simply a matter of providing the technology; it also requires careful alignment with instructional goals, readiness and competence from both teachers and students, continuous technical support, and a supportive institutional framework to sustain its effective use (Aghaziarati et al., 2023; Zawacki-Richter et al., 2019).

4.3. Training Needs and Professional Development for Effective AI Use

Professional development plays a central role in ensuring that AI integration in English language teaching is both effective and sustainable. Previous studies (Dwivedi et al., 2023; Zawacki-Richter et al., 2019) highlight that teacher training in AI should go beyond basic tool use to include pedagogical strategies, ethical considerations, and alignment with curriculum objectives. Without proper training, educators may either underutilize AI's capabilities or apply it in ways that are misaligned with learning goals.

The interviews in this study reveal that while some lecturers feel confident using certain AI tools, most express a strong interest in additional training, especially in specialized applications for language teaching and in designing AI-supported learning materials.

> *I don't feel I need training for tools like ChatGPT, but I would like to learn how to use other types of AI, such as for making presentations or finding academic resources.* (R1)
>
> *Yes, I need training to better understand how to use AI effectively in teaching, how to integrate it into the curriculum, and how to use it in ways that benefit both teachers and students.* (R2)
>
> *In my view, training should focus on introducing specific AI applications for English teaching in the classroom, for example, apps for finding course references.* (R3)
>
> *I hope my institution can provide high-quality training and encourage collaboration among teachers to share experiences and knowledge about AI integration.* (R5)

These responses indicate a shared understanding among lecturers that AI training should be practical, context-specific, and closely tied to real teaching challenges they face in the classroom. R1 reflects confidence in basic AI use but is eager to broaden expertise into new, less familiar tools such as AI for multimedia content creation and academic resource discovery. R2 emphasizes a comprehensive approach that integrates technical skills with pedagogical strategies, ensuring that AI use is not only efficient but also aligned with curriculum goals and student learning outcomes. R3 highlights the importance of targeted training on specific, high-impact applications that can directly support English language teaching. R5 calls for strong institutional backing, including structured programs, quality training resources, and collaborative platforms for teachers to exchange best practices. Collectively, these perspectives reinforce the idea that sustainable AI adoption requires continuous, adaptive professional development that evolves alongside technological advances, accommodates varied teaching contexts, and builds an active community of practice among educators (Aghaziarati et al., 2023; Huynh, 2024).

5. Conclusion

This study concludes that effective AI integration in EFL teaching within Indonesian higher education requires a balanced approach that weighs both its benefits and potential challenges. Findings show that while lecturers generally view AI as a valuable aid for creating materials, enhancing engagement, and personalizing learning, their trust and adoption strategies vary. Some adopt AI enthusiastically, others selectively align it with pedagogical goals, and some maintain cautious use with rigorous verification. Benefits reported include time efficiency, richer learning resources, and flexibility in delivering content, while challenges include accuracy issues, risk of student over-reliance, reduced teacher–student interaction, and infrastructure or training gaps. These variations indicate that AI can be both a pedagogical enabler and a potential dependency, depending on how critically it is used.

Educators should be encouraged to integrate AI as a complementary resource rather than a substitute for teacher expertise, supported by targeted AI literacy training and ethical guidelines. Institutions can facilitate sustainable adoption through structured professional development, collaborative platforms for sharing best practices, and policies that balance innovation with academic integrity.

This study is limited by its focus on a small number of lecturers within a single national context, relying on self-reported interview data that may be subject to bias. Future research could adopt mixed methods, involve larger and more diverse samples, and track AI integration longitudinally to explore how educator attitudes and practices evolve. Comparative studies across different institutional and cultural settings, as well as investigations into the impact of AI-specific training on teaching quality, would further enrich understanding of ethical and effective AI use in EFL contexts.

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