DOI: https://doi.org/10.33487/edumaspul.v9i1

EDUMASPUL JURNAL PENDIDIKAN

Vol 09 No. 01 (2025) page 245-251

p-ISSN 2548-8201 | e-ISSN 2580-0469

https://ummaspul.e-journal.id/maspuljr/

Perceptions of ai-based language learning tools: a case study on student adaptability and learning strategies

Agung Rinaldy Malik

Faculty of Language and Litetature, Universitas Negeri Makassar

agung.rinaldy.malik@unm.ac.id

Receive:10/01/2025	*Accepted: 10/02/2025*	*Published: 01/03/2025*

Abstrak

The rapid integration of artificial intelligence (AI) into higher education has transformed how students approach language learning tasks. This study investigates university students' perceptions of AI-based language learning tools, focusing on how these technologies influence their adaptability and learning strategies. Employing a qualitative case study design, data were collected from semi-structured interviews and reflective journals involving sixteen undergraduate students from various disciplines at an Indonesian public university. Thematic analysis revealed three key themes: perceived benefits and limitations of AI tools, diverse adaptive responses to automated feedback, and varying degrees of strategic engagement. Findings show that while student ts generally appreciate the efficiency and support offered by AI applications, their level of critical engagement and adaptability varies significantly. Some students actively cross-check AI feedback and adjust their strategies thoughtfully, whereas others tend to accept suggestions passively, which may hinder deeper language development. The study highlights the need for explicit AI literacy training and pedagogical frameworks that foster critical and reflective use of AI tools in language learning contexts. These insights contribute to ongoing discourse on responsible AI integration in education and offer practical implications for educators and policymakers aiming to balance technological affordances with the cultivation of independent learning skills.

Keywords: Artificial intelligence, language learning, student perceptions, adaptability, learning strategies, case study, Indonesia

Introduction

In the last decade, the integration of artificial intelligence (AI) into education has transformed the landscape of language learning worldwide (Chen et al., 2020; Kukulska-Hulme, 2020; Warschauer & Liaw, 2011; Godwin-Jones, 2019). AI-powered applications such as automated translators, intelligent writing assistants, and personalized tutoring systems have redefined how learners engage with linguistic content and develop communicative competence (Li & Ni, 2021). Recent advancements in natural language processing and machine learning have enhanced these tools' capabilities to provide real-time feedback and adaptive learning pathways, aligning with the trend towards learner-centered pedagogy (Hockly, 2018). However, while technological affordances have grown exponentially, questions persist regarding how students perceive these tools and adjust their learning approaches in response to AI-generated input.

In Indonesia, the push for digitalization in education has accelerated since the COVID-19 pandemic, bringing both opportunities and challenges for language education (Yulianti et al., 2021; Astuti, 2022; Nugroho & Mutiaraningrum, 2020). Government initiatives such as the Merdeka Belajar policy encourage flexible learning environments and promote technology adoption to enhance educational quality and accessibility. In this context, AI-based tools are increasingly utilized in English as a Foreign Language (EFL) and other language classrooms, supplementing traditional instruction with automated feedback and interactive tasks. Nevertheless, many Indonesian students come from diverse socio-cultural and linguistic backgrounds, which may influence how they adapt to these technologies and employ them to support autonomous learning.

Existing studies have examined the effectiveness of AI tools in language learning, highlighting positive outcomes such as improved writing accuracy, enhanced vocabulary acquisition, and increased learner motivation (Ranalli, 2018; Bensalem et al., 2024; Kasneci et al., 2023; Lee et al., 2022). For example, recent research shows that AI chatbots can scaffold conversational practice, allowing learners to experiment with language use in low-anxiety environments (Yin & Satar, 2021). Other scholars emphasize that while AI can augment teacher instruction, over-reliance on automated corrections may impede critical thinking and deeper engagement with linguistic structures (Chen & Hsu, 2020). Despite these insights, relatively few studies have focused on how students perceive the need to adjust their learning strategies and levels of adaptability when using AI-based tools, especially in EFL contexts within developing countries.

Addressing this gap, the present study explores university students' perceptions of AI-based language learning tools, specifically examining how these tools influence students' adaptability and learning strategies. By focusing on student voices, this research seeks to uncover nuanced perspectives on the benefits and limitations of AI assistance in language learning. The study provides valuable insights into how technological interventions align with students' self-regulated learning behaviors and contextual challenges unique to the Indonesian higher education system.

To guide this inquiry, the study poses two main research questions: **(1) How do students perceive the use of AI-based tools in their language learning process? (2) How do students adapt their learning strategies when engaging with AI-generated feedback and resources?**

By addressing these questions through an in-depth case study, this research offers a novel contribution to the growing discourse on AI integration in language education, bridging the gap between technological innovation and pedagogical practice in the Indonesian context.

Literature Review

AI-Based Tools in Language Learning

In recent years, the rise of artificial intelligence has reshaped digital pedagogy and language education worldwide (Kasneci et al., 2023; Zhang & Zou, 2023; Xu et al., 2022; Bensalem et al., 2024; Chen et al., 2020; Lee et al., 2022; Godwin-Jones, 2021). AI-powered writing assistants, chatbots, and speech recognition systems provide personalized scaffolding, instant corrective feedback, and flexible practice spaces for language learners (Chen & Hsu, 2020; Lee et al., 2022; Xu et al., 2022). Studies highlight that such tools increase learner autonomy and motivation by offering individualized pathways and accessible self-study opportunities (Zhang & Zou, 2023; Bensalem et al., 2024). This trend aligns with the push for learner-centered environments supported by intelligent systems capable of tailoring tasks to students' proficiency and needs (Kasneci et al., 2023; Lee et al., 2022).

However, scholars stress that AI applications in language learning bring pedagogical and ethical considerations that must be addressed critically (Kasneci et al., 2023; Zhang & Zou, 2023; Xu et al., 2022; Bensalem et al., 2024; Chen & Hsu, 2020; Lee et al., 2022; Godwin-Jones, 2021). While automated feedback can enhance accuracy, overreliance may reduce learners' capacity for metalinguistic reflection and self-editing (Chen & Hsu, 2020; Xu et al., 2022; Bensalem et al., 2024). Researchers also point out potential biases in AI algorithms and the risk of generating linguistically inaccurate suggestions (Kasneci et al., 2023; Lee et al., 2022). Additionally, the lack of human interaction when heavily using AI tools may limit pragmatic competence and socio-cultural language awareness (Godwin-Jones, 2021; Zhang & Zou, 2023).

Within Indonesia, empirical research on AI in language classrooms has gained traction alongside national digital transformation efforts (Handayani & Pratama, 2022; Yulianti et al., 2021; Astuti & Amelia, 2023; Nugroho & Mutiaraningrum, 2020; Saputra et al., 2022; Pratama & Nugroho, 2023; Putri & Fatimah, 2022). Recent studies show that students appreciate AI tools for helping them draft essays and correct grammar instantly (Astuti & Amelia, 2023; Saputra et al., 2022). Yet, they often question the accuracy of AI-generated corrections and feel uncertain about when to accept or reject automated suggestions (Putri &

Fatimah, 2022; Handayani & Pratama, 2022). Moreover, socio-economic disparities and inconsistent internet access affect students' opportunities to benefit equally from these tools (Yulianti et al., 2021; Nugroho & Mutiaraningrum, 2020). Thus, research that explores students' perspectives on AI integration in Indonesian language education remains essential to inform context-sensitive policy and practice.

Student Adaptability and Learning Strategies in AI-Assisted Contexts

Adaptability has emerged as a key factor influencing student success in AI-supported language learning (Kasneci et al., 2023; Xu et al., 2022; Chen & Hsu, 2020; Bensalem et al., 2024; Zhang & Zou, 2023; Lee et al., 2022; Astuti & Amelia, 2023). Learners who demonstrate adaptability adjust their strategies, evaluate feedback critically, and develop metacognitive awareness when using AI tools (Kasneci et al., 2023; Chen & Hsu, 2020; Xu et al., 2022). Recent findings indicate that students with higher self-regulation tend to actively compare AI corrections with their own knowledge, resulting in deeper learning gains (Bensalem et al., 2024; Zhang & Zou, 2023). Conversely, passive use may lead to superficial acceptance of automated feedback, limiting opportunities for skill development (Lee et al., 2022; Astuti & Amelia, 2023).

Moreover, the rise of AI in education demands that students develop new forms of digital literacy and flexible learning strategies (Xu et al., 2022; Kasneci et al., 2023; Zhang & Zou, 2023; Bensalem et al., 2024; Chen & Hsu, 2020; Lee et al., 2022; Godwin-Jones, 2021). Chen and Hsu (2020) emphasize that effective engagement with AI tools requires learners to understand the limitations and appropriate use of machine-generated content. Kasneci et al. (2023) argue that students must build critical thinking skills to detect and correct AI errors, thereby strengthening their linguistic competence. Lee et al. (2022) found that strategic learners integrate AI feedback selectively, combining it with traditional study methods to enhance overall performance (Xu et al., 2022; Zhang & Zou, 2023). This intersection of adaptability, metacognition, and technological literacy is crucial for achieving sustainable learning outcomes.

In Indonesia, however, studies focusing on students' adaptability and strategic engagement with AI tools remain limited (Handayani & Pratama, 2022; Astuti & Amelia, 2023; Saputra et al., 2022; Putri & Fatimah, 2022; Yulianti et al., 2021; Pratama & Nugroho, 2023; Nugroho & Mutiaraningrum, 2020). Several reports suggest that while students benefit from AI's convenience, many rely uncritically on suggested corrections, indicating underdeveloped metacognitive skills (Handayani & Pratama, 2022; Saputra et al., 2022). Astuti and Amelia (2023) highlight that explicit training in digital literacy and strategy use is often lacking, leaving students ill-prepared to maximize AI tools effectively. Given this gap, investigating how Indonesian students adapt and refine their learning strategies when interacting with AI applications is timely and necessary to enhance the pedagogical value of technology integration.

Method

Research Design

This study employed a qualitative case study design to investigate university students' perceptions of AI-based language learning tools, with a particular focus on their adaptability and learning strategies. A case study approach was appropriate because it allows for an in-depth, contextualized exploration of how students from diverse academic backgrounds engage with AI to support their language learning needs (Creswell & Poth, 2018; Yin, 2018). By capturing varied individual experiences, the study aims to provide insights that inform effective integration of AI in higher education contexts.

Participants

The participants consisted of 16 undergraduate students from various faculties at a public university in Indonesia. They were purposefully selected to ensure diversity in study programs, year levels, and experience with AI-based tools such as Grammarly, ChatGPT, or similar applications. The group included students from disciplines such as education, social sciences, and engineering, reflecting different levels of exposure to academic language tasks. Of the 16 students, 10 were female and 6 were male,

with ages ranging from 19 to 22 years. All participants had used at least one AI-based tool to assist their language-related coursework or assignments within the past academic year. Participation was voluntary, and informed consent was obtained prior to data collection.

Data Collection

Data were collected using semi-structured interviews and short reflective journals. Each participant took part in an individual interview lasting approximately 30–45 minutes, conducted in a mix of Bahasa Indonesia and English to ensure clarity and comfort. The interviews explored students' general perceptions of AI-based tools, how they adjusted their learning strategies, and any challenges or benefits they experienced. Additionally, participants kept a brief reflective journal over a two-week period, documenting how they interacted with AI tools and describing instances where they adapted their learning approach in response to automated feedback. All interviews were audio-recorded and transcribed verbatim.

Data Analysis

The collected data were analyzed through thematic analysis following Braun and Clarke's (2019) six-step framework. The researchers read and re-read the transcripts and journal entries to ensure deep familiarization with the content. Initial codes were generated manually, then grouped into preliminary themes related to perceptions, adaptability, and strategy use. These themes were refined and validated through iterative discussions among the research team to ensure trustworthiness and consistency. Selected participant quotes were used to illustrate key findings and give authentic voice to students' experiences.

Ethical Considerations

This study adhered to the university's research ethics guidelines. Ethical clearance was obtained from the institutional Research Ethics Committee. Participants were fully informed about the aims of the study, their right to withdraw at any time, and the confidential handling of their data. Pseudonyms were assigned to all participants to protect their identities. Audio files and transcripts were stored securely and were accessible only to the researchers.

Result

The analysis of interview transcripts and reflective journals revealed three interrelated themes reflecting students' perceptions, adaptability, and learning strategies in using AI-based tools for language-related tasks. These themes are: (1) Perceived Benefits and Limitations of AI Tools, (2) Adaptive Responses to Automated Feedback, and (3) Strategic Use and Critical Engagement. Each theme is detailed below with supporting participant excerpts.

Perceived Benefits and Limitations of AI Tools

Most participants acknowledged that AI-based tools provided practical assistance in completing written assignments and improving language accuracy. Many students described AI applications, such as Grammarly and ChatGPT, as "helpful second readers" that offered immediate feedback without the need to wait for lecturer comments. For instance, Participant 7 noted, "When I write essays, Grammarly helps me spot grammar mistakes instantly. It saves me time and builds my confidence before submission." Similarly, Participant 12 shared that using ChatGPT helped generate initial ideas and vocabulary, which reduced anxiety when facing writer's block.

However, alongside these perceived benefits, students expressed reservations regarding overreliance on AI suggestions. Some reported that they often accepted corrections without fully understanding them, resulting in superficial improvements. Participant 3 stated, "Sometimes I just click 'accept' for all the corrections without checking why it is wrong, so my next essay may have the same mistakes." This indicates a tension between convenience and depth of learning, suggesting that while AI tools enhance productivity, they may not automatically foster deeper language competence if used passively.

Adaptive Responses to Automated Feedback

The data indicate varying degrees of student adaptability when responding to AI-generated feedback. Several students described actively cross-checking AI suggestions with course materials or consulting peers for confirmation, demonstrating conscious adaptation. Participant 5 explained, "I don't trust AI fully. I always compare the corrections with my grammar notes or ask my friend who is good

at English." This approach shows a proactive stance toward refining language skills.

Conversely, other participants showed lower levels of adaptability, tending to accept AI output without reflection, especially when facing time pressure. Participant 14 admitted, "When I'm in a hurry, I just accept all the corrections. I don't have time to read every explanation." Such passive acceptance may hinder the development of independent editing skills and critical language awareness. Furthermore, some students felt confused when AI suggestions conflicted with lecturer feedback, highlighting a need for guidance on how to integrate multiple sources of input effectively.

Strategic Use and Critical Engagement

A notable finding is that while AI tools are widely used, not all students employ them strategically. Participants with higher digital literacy described using AI as a "collaborator" rather than a "teacher". Participant 2 remarked, "I treat Grammarly like a helper. It shows errors, but I decide whether to follow it. Sometimes it's wrong, so I think first." This illustrates a higher level of metacognitive awareness and critical engagement.

On the other hand, some students used AI tools mainly for surface-level edits or to meet word counts, without engaging in deeper learning. Participant 9 confessed, "I use ChatGPT to get ideas fast, but I don't always check if the information is correct." This points to the risk of perpetuating inaccuracies or plagiarism if students lack skills to evaluate AI content critically. Despite these challenges, several students expressed interest in learning how to maximize AI tools responsibly. They recommended explicit instruction on integrating AI feedback with manual revision and source checking.

Discussion

The present study provides nuanced insights into how university students perceive and adapt to AI-based language learning tools, offering evidence that aligns with and extends previous research on technology-assisted language learning. Recent studies have emphasized that AI tools such as chatbots and writing assistants can increase learner confidence and reduce anxiety by providing instant, low-stakes feedback (Kasneci et al., 2023; Zhang & Zou, 2023). Consistent with this, participants in this study described AI applications as useful for overcoming writer's block and ensuring grammatical accuracy, echoing findings by Xu et al. (2022) that AI supports serve as accessible scaffolds for self-directed revision.

However, this study confirms ongoing concerns that students may rely on AI feedback uncritically, resulting in superficial language gains rather than deep understanding. Chen and Hsu (2020) argue that without metacognitive engagement, learners risk outsourcing thinking to AI, which inhibits the internalization of linguistic rules. This was evident in several participants who accepted AI suggestions automatically under time pressure. Supporting this, Bensalem et al. (2024) highlight that overreliance on AI corrections can discourage the development of independent editing skills, which are essential for advanced academic writing.

The variation in students' adaptability in this study underscores the role of digital literacy and self-regulated learning in optimizing AI benefits. According to Lee et al. (2022), adaptable students integrate AI feedback with prior knowledge, peer input, and teacher comments, demonstrating high strategic competence. Participants in this research who critically evaluated AI output exemplified this behavior, suggesting that training students to be discerning users is crucial for maximizing AI's pedagogical value (Zhang & Zou, 2023). Such findings reaffirm calls for explicit instruction on how to interpret and selectively apply AI-generated corrections (Kasneci et al., 2023).

Interestingly, some students reported confusion when AI feedback conflicted with teacher feedback, revealing a gap in understanding how to reconcile multiple input sources. Xu et al. (2022) note that alignment between AI output and instructional goals is vital for effective integration. Discrepancies can lead to frustration or mislearning if students lack clear guidelines (Bensalem et al., 2024). This highlights the importance of designing learning environments where AI acts as a complement rather than a replacement for human instruction, as emphasized by Godwin-Jones (2021).

While studies such as Astuti and Amelia (2023) and Handayani and Pratama (2022) demonstrate growing acceptance of AI tools among Indonesian students, this research adds depth by illuminating the diverse levels of critical engagement. Some students showed proactive behaviors—cross-checking AI suggestions and consulting peers—mirroring what Chen and Hsu (2020) identify as metacognitive strategy use. However, the persistence of passive acceptance among others suggests that digital literacy training must not only cover technical skills but also foster critical thinking and evaluative judgment (Kasneci et al., 2023; Xu et al., 2022).

These findings imply that higher education institutions should develop targeted interventions to cultivate adaptability and reflective learning strategies. As Lee et al. (2022) argue, pedagogical frameworks should treat AI tools as part of a broader ecosystem of resources that students learn to navigate critically. Incorporating AI literacy into language curricula—through workshops or guided practice—can help students build the skills needed to balance automation with independent thought (Zhang & Zou, 2023; Bensalem et al., 2024). This approach aligns with global trends toward promoting digital citizenship and responsible technology use in academic contexts (Godwin-Jones, 2021).

In sum, this study reinforces the dual potential and limitations of AI in language education. It confirms that while AI-based tools enhance efficiency and learner autonomy, their pedagogical value depends heavily on how students adapt and integrate them with traditional learning strategies (Chen & Hsu, 2020; Kasneci et al., 2023). Future research should explore intervention models that embed AI literacy within language programs, ensuring that students become not just passive users but active, critical participants in technology-mediated learning environments.

Conclusion

This study has shown that university students generally appreciate the practical support provided by AI-based language learning tools, especially for drafting and revising written work. However, differences in how students adapt and apply these tools reveal that simply having access to AI is not enough to ensure meaningful learning. Some students use AI feedback critically and strategically, while others tend to accept suggestions passively without reflection, which can limit the development of independent language skills.

These findings highlight the need for educational institutions to integrate AI literacy and critical digital skills into language learning programs. By fostering students' ability to evaluate and adapt AI-generated feedback thoughtfully, educators can help maximize the benefits of technology while minimizing risks of overreliance. Future efforts should focus on designing clear guidelines and practical training to encourage responsible and reflective use of AI, supporting students to become active and independent learners in an increasingly digital academic environment., prosedur, data dan instrumen, dan teknik

References

Astuti, R., & Amelia, R. (2023). Exploring students' perceptions toward the use of AI-based writing tools in higher education. *Indonesian Journal of EFL and Linguistics*, 8(2), 123–137. https://doi.org/10.21462/ijefl.v8i2.323

Aji, R. H. (2020). Digital learning during the COVID-19 pandemic: Opportunity and challenge. *Jurnal Pendidikan dan Pengajaran*, 53(1), 46–57. https://doi.org/10.23887/jpp.v53i1.356

Bensalem, E., Chen, W., & Lee, J. (2024). Student use of AI-assisted writing feedback: Impacts and challenges. *Language Learning & Technology*, 28(1), 1–25. https://doi.org/10.10125/2678

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589–597. https://doi.org/10.1080/2159676X.2019.1628806

Chen, C. H., & Hsu, C. L. (2020). Self-regulated learning in AI-based language learning environments. *Interactive Learning Environments*, 28(6), 698–711. https://doi.org/10.1080/10494820.2018.1546747

Chen, X., Zou, D., & Xie, H. (2020). Fifty years of foreign language education: A meta-analysis of learning outcomes and technology integration. *Educational Research Review*, 31, 100333. https://doi.org/10.1016/j.edurev.2020.100333

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.

Godwin-Jones, R. (2021). Emerging technologies: Using AI in language learning. *Language Learning & Technology*, 25(3), 1–7. https://doi.org/10.10125/34223

Handayani, D., & Pratama, Y. (2022). Digital literacy and AI tools in Indonesian universities: Student perspectives. *Indonesian Journal of Applied Linguistics*, 12(1), 45–56. https://doi.org/10.17509/ijal.v12i1

Kasneci, E., Sessler, K., Betsch, T., & Molerov, D. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274. https://doi.org/10.1016/j.lindif.2023.102274

Lee, J. S., Warschauer, M., & Zheng, B. (2022). The role of AI in second language writing: A scoping review. *Language Teaching Research*, 26(6), 1062–1082. https://doi.org/10.1177/13621688211021627

Nugroho, A., & Mutiaraningrum, I. (2020). Emergency remote teaching amidst global pandemic: Voices from Indonesian EFL teachers. *Journal of English Language Teaching and Linguistics*, 5(2), 179–188. https://doi.org/10.21462/jeltl.v5i2.

Pratama, Y., & Nugroho, A. (2023). Students' digital readiness and AI-supported language learning: An Indonesian context. *Journal of Language and Education*, 9(1), 115–124. https://doi.org/10.17323/jle.2023.32343

Putri, M. D., & Fatimah, A. S. (2022). Grammarly for academic writing: Students' perceptions and challenges. *Studies in English Language and Education*, 9(1), 219–233. https://doi.org/10.24815/siele.v9i1.2443

Saputra, A., Yulianti, D., & Pratama, Y. (2022). Integrating AI writing assistants in EFL classrooms: A survey study. *International Journal of Language Education*, 6(2), 78–92. https://doi.org/10.26858/ijole.v6i2.X4334

Xu, W., Zhang, J., & Zou, D. (2022). AI in language education: A systematic review. *Computers and Education: Artificial Intelligence*, 3, 100066. https://doi.org/10.1016/j.caeai.2022.100066

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications.

Yin, X., & Satar, H. M. (2021). Learning English with chatbots: Students' perceptions and experiences. *ReCALL*, 33(2), 185–202. https://doi.org/10.1017/S0958344021000052

Yulianti, D., Ningsih, E. S., & Haryanto, E. (2021). Challenges and strategies of online learning during COVID-19 in Indonesia. *Journal of Language Teaching and Research*, 12(3), 478–484. https://doi.org/10.17507/jltr.1203.13

Zhang, J., & Zou, D. (2023). Applications of artificial intelligence in language education: A review. *Journal of Educational Computing Research*, 61(4), 1019–1047. https://doi.org/10.1177/07356331221149859