

Informatics Students' Experiences with AI-Powered English Learning

Reni Apriani¹

¹Universitas La Tansa Mashiro, Indonesia

Fheby Indriyanti Nurpratiwi²

²Universitas La Tansa Mashiro, Indonesia

Siti Hanna Sumedi³

³Universitas La Tansa Mashiro, Indonesia

Corresponding Author: reni.apriani@unilam.ac.id

Abstract

The integration of artificial intelligence (AI) into education has become an important innovation, particularly in English language learning among informatics students. This study investigates the experiences and examines the perceived impact of AI-based tools in enhancing the effectiveness and efficiency of English learning. AI applications such as machine translation, speech recognition, and interactive platforms support language skill development through personalized and flexible learning environments. This study employed a descriptive qualitative approach, with data collected through semi-structured interviews and observations of second-semester students of the Faculty of Information Technology who actively use AI in learning English. The findings reveal that AI use positively enhances students' motivation, autonomy, and confidence, while also improving English skills, particularly in writing, speaking, and vocabulary mastery. In addition, AI provides instant feedback and facilitates independent learning. However, several challenges were identified, including overreliance on AI, limited access to technology, and students' difficulties in adapting to AI platforms. Therefore, the integration of AI needs to be supported by pedagogical guidance and strengthened digital literacy to ensure more effective use. This study contributes to the development of AI-based language learning practices in higher education.

Keywords: Artificial Intelligence; English Learning; Technology; Descriptive Qualitative.



INTRODUCTION

As a global language widely used in social, cultural, economic, and educational spheres, English plays a vital role in international communication. In this case, the government's initiative to incorporate English into the national education curriculum at various levels is a strategic effort to equip the Indonesian youth with the skills needed to compete on a global scale. However, in the process of learning English, second-semester students in the Informatics study program often encounter notable difficulties, primarily due to their ongoing adjustment to a new academic setting that involves unfamiliar teaching methods compared to their previous level of education. At this early stage, mastery of basic English, such as grammar, vocabulary, speaking, reading and writing, remains a primary difficulty. Mastering these core skills is crucial not only for academic achievement but also as a stepping stone for further learning in the subsequent semesters. Despite this, having strong language abilities early on is an essential competence to equips students more effectively for their future careers (Abbas et al., 2019). Particularly, for informatics students, given that most academic literature and learning resources in the field of technology are written in English.

In the digital era, the need to leverage technology in learning has grown increasingly important. Technology not only provides broad access to learning resources but also supports more flexible independent learning (Faris et al., 2025). Whereas, educators are expected to equip students not only with knowledge and information, but also by fostering creativity, enhancing critical thinking, problem-solving, and enabling global communication through the use of technology as a learning tool (Hussin, 2018; Nurpratiwi, 2024). Technology serves as a platform for essential learning skills that can be effectively integrated into the existing curriculum. By integrating technology into the learning process allows students to creates a more adaptive and effective learning experience, and practice language skills through multiple methods, including listening to audio content, working on online exercises, quick and broad access to materials to encourage independent and flexible learning, and taking part in interactive learning style (Mayer, 2021; Zulkarnindra, 2021; Darmawati et al., 2023). However, technology use in learning still requires guidance to ensure that it is effective and aligned with learning needs, as shown by Bećirović (2021) via teacher support in the context of technology-based learning.

In this cases, Artificial intelligence (AI) has emerged as an innovative solution for supporting language learning in higher education not only to improve learning, but also helps streamline administrative tasks and enhances students' overall academic experiences. With its ability to analyze data and offer automated solutions, AI brings greater efficiency and innovation



to the education system. AI use in enhancing students learning experience, particularly through personalized assistance, support in generating ideas and writing, and assistance in research and data analysis. From personalized learning platforms and virtual learning assistants to entertainment apps and online communication tools, AI now plays a more prominent role in students' daily activities than ever before (Bećirović & Dervić, 2022). AI also enables students to practice without pressure, thereby reducing anxiety in using English, particularly in speaking and writing skills. Moreover, AI supports the concept of self-regulated learning, in which students can manage their own learning processes according to their individual needs and abilities.

This is highly relevant for informatics students, who are typically self-directed learners accustomed to technology. With AI support, students can receive immediate feedback, correct errors, and gradually improve their language skills according to the individual's rhythm and level of understanding (Syafii & Sugianto, 2019; Zulaikah et al., 2023). Collaborative approaches such as tele-collaboration have been shown to enrich the competencies of aspiring English educators through the development of techno-pedagogics and more mature instructional design (Emir et al., 2024). As Masrukhin et al. (2023) stated that AI-powered tools as media that can accommodate different intelligence types, and integrates it with technology and local wisdom. Thus, for informatics students, AI can accommodate their intelligence such as: 1) Verbal-linguistic (dialogue, writing, reading), 2) Logical-mathematical (structured exercises, coding-related tasks), 3) Spatial (visual aids, diagrams, mind maps), and 4) Interpersonal (chatbot conversation, peer-like interaction). This opens space to explore diverse learning experiences where some students may prefer interactive chatbots, and others may prefer structured, logic-oriented tasks or project-based activities. Overall, learning designs that integrate digital technology and AI, with the support of teachers and structures. The right pedagogical approach has the potential to increase students' effectiveness, motivation, and independence in English learning. Through AI's ability to provide automatic feedback and quick corrections, the role of lecturers can be more focused on aspects of learning that require direct human interaction, such as discussion activities and speaking practices.

Despite these benefits, previous research on AI use in English language learning has largely adopted quantitative approaches, focusing on learning outcomes such as test scores or academic performance (Zulkarnindra, 2021). Qualitative studies that deeply examine students' experiences with AI, particularly informatics students, are still limited. In addition, aspects such as students' perceptions, challenges in using AI, and the potential for dependence on technology have not been widely explored through qualitative methods. This research gap highlights the importance



of further exploration of how students interpret the use of AI in English language learning, including the benefits and challenges they encounter in real life practice. Such understanding is essential to ensure that AI integration is not only technically effective but also meaningful from a pedagogical perspective.

Based on this background, this study aims to explore informatics students' experiences in using artificial intelligence (AI) in English language learning and to identify the benefits and challenges that arise from its use. The findings are expected to contribute to the development of more effective, adaptive, and contextually relevant technology-based language learning in higher education.

METHOD

This study employed a descriptive qualitative approach, as outlined by Creswell & Poth (2018), aimed at exploring informatics students' experiences in using artificial intelligence (AI) as a supporting medium in English language learning. This approach is chosen because it enables an in depth understanding of students' perceptions, experiences, and the challenges they face when using AI directly in the learning process. The participants were 19 second semester students from the Informatics Study Program at the Faculty of Information Technology, La Tansa Mashiro University. Purposive sampling was used with the criterion that students had used AI based applications in their English language learning, such as automatic translation tools, speech recognition, and interactive learning platforms. Purposive selection is carried out to ensure that participants have direct experience in the use of AI, so that the results of the research can provide a relevant picture of the effectiveness and efficiency of the use of this technology in learning (Rhidayatullah & Saputra, 2019).

Data were collected through: 1) In-depth interviews to explore students' experiences, perceptions, and the benefits and obstacles they encountered in using AI, 2) Direct observation was carried out to see how students interacted with AI applications during their learning activities, including how they utilized available features, and 3) Documents such as application usage logs, assignment results, and students' learning activities related to AI use were collected. These allow researchers to obtain comprehensive information about students' interactions with technology, as well as the role of technology in enhancing their language comprehension and skills (Zulaikah et al., 2023). Data were analyzed using thematic analysis, consisting of three main stages of data reduction, data presentation and conclusion drawing. To ensure validity and credibility, the study used triangulation of sources and methods, comparing interview results, observation data, and



documentation thoroughly (Utama, 2020). Member checking was also conducted with participants to confirm that the collected data accurately reflected their experiences.

RESULTS AND DISCUSSION

The results of this study show that the application of artificial intelligence (AI) technology in English language learning makes a significant positive contribution to improving students' language skills, learning motivation, and material understanding among second semester students at the Faculty of Information Technology, La Tansa Mashiro University.

AI as a Facilitator of Autonomous and Personalized Language Learning

The findings indicate that artificial intelligence (AI) plays a substantial role in fostering students' autonomous and personalized learning experiences in English language learning. Features such as automatic translation, speech recognition, and instant feedback enable learners to independently identify and correct linguistic errors, particularly in pronunciation, grammar, and vocabulary. Based on the in-depth interview, over 90% students positively acknowledge that they can correct their own mistakes autonomously thanks to the system's instant feedback. This suggests a shift from teacher-centered instruction toward learner-driven engagement, where students exercise greater control over their learning pace and strategies. This finding aligns with Zhu & Wang (2025) dan Muhamad & Firmansyah (2024), who emphasize the role of AI in supporting self-directed learning environments. Similarly, Suciati et al. (2023) highlight that AI-powered speech recognition tools significantly enhance speaking performance, particularly in pronunciation accuracy and fluency. Based on the observation and students' log, applications such as Google Translate and Duolingo further reinforce this autonomy by offering continuous and flexible practice opportunities beyond the classroom context. In addition, the adaptive features possessed by AI-based applications allow students to obtain material according to their respective skill levels. For example, the Grammarly app gives students the opportunity to practice grammar independently in a variety of contexts while improving their understanding of the basic rules of the English language. Research by Meyga & Suryaningtyas (2025) and Darmawati et al. (2023) shows that adaptive AI-based applications are highly effective in helping language learners understand grammatical structures as well as improve their linguistic competence. These findings are in line with the research of Rosyada & Taopan (2025), who affirm that the application of AI in language learning not only presents material according to the student's ability level, but also provides opportunities for repetitive practice that can be adjusted to the individual's learning



tempo. Thus, students can delve deeper into the material so that their understanding and retention of knowledge increases significantly.

However, while AI promotes independence, it also raises a critical question: whether this autonomy reflects genuine cognitive engagement or merely procedural interaction with technology. The ease of accessing instant corrections may reduce the depth of processing required for long-term language acquisition, potentially leading to surface-level learning rather than meaningful linguistic competence.

AI as an Affective Support System in Language Learning

Beyond cognitive benefits, AI integration significantly influences students' affective dimensions, particularly motivation, confidence, and anxiety reduction. Through observation, the condition of students of the Faculty of Information Technology who often experience anxiety when speaking in a foreign language in class. However, after AI-based were implemented. The data of students' activity showed that students feel more confident practicing before interacting directly in class. The findings reveal that students feel more comfortable practicing language skills in AI-mediated environments before engaging in face-to-face classroom interactions. This indicates that AI serves as a low-pressure learning space where learners can experiment without fear of immediate judgment. This result is consistent with Aprianto (2024), who argue that game-based AI platforms enhance motivation through flexible and adaptive learning experiences. Additionally, Bakhtiar (2025) suggests that AI can reduce language anxiety by providing a private and non-threatening environment for practice.

Nevertheless, this increased comfort may create a paradox. While AI reduces anxiety, it may also limit students' exposure to authentic communicative pressure, which is essential for real-world language use. In other words, confidence developed in AI-supported environments does not necessarily transfer seamlessly to spontaneous human interaction. This raises concerns about whether AI fosters communicative competence or merely simulated performance in controlled settings.

AI as a Double-Edged Sword: Dependency and Cognitive Risk

A more critical perspective reveals that AI functions not only as a supportive tool but also as a potential source of dependency. The observation showed that AI also positively affects grammar and vocabulary understanding through automatic correction features. The reliance on automatic translation and correction features may discourage students from actively engaging in



problem-solving or critical language processing. Instead of constructing meaning independently, learners may become passive recipients of AI-generated outputs. This concern echoes Meyga & Suryaningtyas (2025), who acknowledge AI's contribution to linguistic development while cautioning against over-reliance. The findings suggest that excessive dependence on AI tools may hinder the development of critical thinking skills and a deeper understanding of language structures.

From a pedagogical standpoint, this indicates that AI should not be positioned as a substitute for cognitive effort but rather as a scaffold that supports, rather than replaces, the learning process. Without appropriate instructional guidance, the convenience offered by AI risks transforming learning into a shortcut-driven activity rather than an intellectually engaging process.

Structural and Contextual Barriers in AI Integration

Despite its benefits, the implementation of AI in language learning is constrained by several structural challenges. Limited access to digital devices and unstable internet connectivity remains significant barriers, highlighting the persistence of a digital divide among students. This finding is in line with Ridwan (2025), who emphasize that technological infrastructure is a critical determinant of successful AI integration in higher education. In addition, based on the result of interview and observation, students face difficulties adapting to AI platforms, particularly those with complex interfaces and features. As noted by Putra & Suryadi (2023), the effectiveness of AI tools is contingent upon users' digital literacy and familiarity with the technology. Without sufficient training or support, the potential advantages of AI may not be fully realized. These challenges suggest that the success of AI integration is not solely dependent on the technology itself but also on the broader educational ecosystem, including institutional support, infrastructure readiness, and digital competence. In contexts such as Indonesian higher education, these factors become particularly crucial and should be addressed systematically to avoid unequal learning opportunities.

Implications for Pedagogical Practice

Taken together, the findings demonstrate that AI has the potential to transform English language learning by enhancing autonomy, supporting affective engagement, and providing flexible learning opportunities. The study's implications show that AI integration in English language learning will be more effective if supported by institutional policies, adequate



infrastructure, and training for both students and lecturers. However, its implementation must be approached critically. Educators need to design pedagogical strategies that balance AI use with active cognitive engagement, ensuring that students do not become overly dependent on automated systems. The importance of institutional support in optimizing technology use in education. AI should be integrated as a complementary tool rather than a dominant driver of instruction. Structured guidance, reflective tasks, and critical engagement activities are necessary to maximize its benefits while minimizing its risks. In addition, lecturers' roles remain crucial in guiding AI use so that it supplements rather than replaces the learning process and strengthens students' understanding. Ultimately, the effectiveness of AI in language learning lies not in the sophistication of the technology, but in how it is pedagogically mediated.

CONCLUSION

This study concludes that the application of artificial intelligence (AI) as a supporting tool in English learning contributes a significant positive impact on second semester student at the Faculty of Information Technology. AI helps students in various aspects, including increased learning motivation, deeper material understanding, and improved English language skills, especially in speaking, reading, and writing. Through instant feedback features, flexible access to materials, and adaptive exercises, AI support students in learning more independently and systematically to overcome academic adaptation challenges. Students also demonstrate greater confidence in practicing because they can correct errors without immediate pressure or evaluation. The integration of AI in English language learning has the potential to be an effective strategy to create a more structured, personalized, and responsive learning process to the needs of students. Therefore, AI integration in English language learning should be continuously developed with adequate infrastructure, training, and guidance to maximize its benefits sustainably.

FUTURE DIRECTIONS

Future studies should not only focus on students' perceptions but also examine how far artificial intelligence (AI) actually improves English proficiency through more measurable approaches, especially to see whether AI helps students develop deeper understanding not only for supports quick but also the surface-level results. Considering the findings related to students' autonomy and tendency to rely on AI, it is important for future research to design clear learning frameworks that guide students to use AI as support for thinking, not as a shortcut. In addition,



further studies need to explore whether the confidence students gain from practicing with AI can really be applied in real communication situations, particularly when compared with more interactive learning approaches. Future research should also pay attention to the long-term effects of AI use on students' critical thinking and language processing, as well as challenges such as limited access to technology and differences in digital literacy. Finally, issues related to academic honesty and the ethical use of AI should be explored to ensure that the use of AI in language learning remains beneficial and responsible.

REFERENCES

- Abbas, J., Aman, J., Nurunnabi, M., & Bano, S. (2019). The Impact of Social Media on Learning Behavior for Sustainable Education: Evidence of Students from Selected Universities in Pakistan. *Sustainability*, 11(6), 1683. <https://doi.org/10.3390/su11061683>
- Aprianto, D. (2024). Online Learning Platform Usage and Learning Intensity in EFL Students. *Indonesian Journal of Educational Science*, 7(1), 60–75. <https://doi.org/10.31605/ijes.v7i1.4451>
- Bakhtiar, M. R. (2025). Latihan Berbicara Bahasa Inggris Berbasis Kecerdasan Buatan: Meneliti Fleksibilitas, Kecemasan, dan Umpan Balik di Kalangan Mahasiswa. *Jurnal Multidisiplin Dehasen (MUDE)*, 4(3), 629. <https://doi.org/10.37676/mude.v4i3.8571>
- Bećirović, S. (2021). The role of teachers in technology-enhanced English language learning. *Frontiers in Psychology*, 12, 738144. <https://doi.org/10.3389/fpsyg.2021.738144>
- Bećirović, S., & Dervić, M. (2022). Students' perspectives of digital transformation of higher education in Bosnia and Herzegovina. *The Electronic Journal of Information Systems in Developing Countries*, 80(1), 1–22. <https://doi.org/10.1002/isd2.12243>
- Darmawati, A., Marwan, M., Suhenrik, P., Ramly, R. A., & Salam, S. (2023). Adaptive Learning in the Independent Curriculum: Integration of Behavioristic, Cognitive and Constructivist Theories in Educational Technology. *International Journal of Education, Vocational and Social Science*, 2(04), 255–265. <https://doi.org/10.63922/ijevss.v2i04.528>
- Emir, B., Cinkara, E., & Arian, A. (2024). Telecollaboration in English language teacher education: Developing techno-pedagogical competencies. *Smart Learning Environments*, 11(5), 1–17. <https://doi.org/10.1186/s40561-024-00290-0>
- Faris, A., Suprpti, Inayati, N., Adwia, & Hasanah, N. (2025). Penggunaan Media Pembelajaran Digital dalam Meningkatkan Motivasi Belajar Siswa. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 10(04), 367–393. <https://doi.org/10.23969/jp.v10i04.35793>



- Hussin, A. A. (2018). Education 4.0 Made Simple: Ideas For Teaching. *International Journal of Education and Literacy Studies*, 6(3), 92–98. <https://doi.org/10.7575/aiac.ijels.v.6n.3p.92>
- Masrukhin, A. R., Wahidah, F., Amrela, U., & Yusmira, Z. (2023). Development of a Foundation Phase Curriculum based on Multiple Intelligences Integrated with Technology Content and Local Wisdom. *International Journal of Education, Vocational and Social Science*, 2(02), 315–328. <https://doi.org/10.63922/ijevss.v2i02.536>
- Mayer, R. E. (2021). *The Cambridge handbook of multimedia learning* (2nd ed.). Cambridge University Press.
- Meyga, S. N., & Suryaningtyas, P. S. (2025). The Role of AI in Grammar Feedback: Advantages and Limitations Compared to Teacher Evaluation. *ICONIS: International Conference on Innovative Science*, 7(1), 400–410.
- Muhamad, F., & Firmansyah, F. (2024). AI-Powered Adaptive Learning Systems for Enhancing Cybersecurity Education in Undergraduate Informatics Programs. *ICONIS: International Conference on Innovative Science*, 6(1), 241–250.
- Nurpratiwi, F. I. (2024). Designing ICT Competences-Integrated Lesson Planning Course Teaching Model for English Language Education. *Journal of Literature Language and Academic Studies*, 3(02), 52–63. <https://doi.org/10.56855/jllans.v3i02.1159>
- Putra, A., & Suryadi, M. (2023). Implementasi AI dalam Proses Pembelajaran pada Mahasiswa Pendidikan Bahasa Inggris Semester 1 di Universitas Asyafiiyah. *Assyfa Journal of Multidisciplinary Education*, 2(2), 1–16. <https://doi.org/10.61650/ajme.v2i2.631>
- Rhidayatullah, & Saputra, A. A. (2019). Schema activation strategy in reading comprehension to improve student's interest. *Jurnal Penelitian Ilmu Pendidikan*, 12(2), 147–154. <https://doi.org/10.21831/jpipfip.v12i2.21843>
- Ridwan, S. C. (2025). Pemanfaatan AI Dalam Pembelajaran Speaking Bahasa Inggris : Upaya Meningkatkan Kepercayaan Diri Dan Konsistensi Belajar Mahasiswa. *Karimah Tauhid*, 4(9), 6556–6582. <https://doi.org/10.30997/karimahtauhid.v4i9.20195>
- Rosyada, A., & Taopan, L. L. (2025). Using AI in English Language Learning : Perspectives of Indonesian EFL Learners. *Salus Cultura: Jurnal Pembangunan Manusia Dan Kebudayaan*, 5(1), 46–53. <https://doi.org/10.55480/saluscultura.v5i1.384>
- Suciati, S., Faridi, A., Mujiyanto, J., & Arifani, Y. (2023). Artificial Intelligence Application dalam Pembelajaran Speaking : Persepsi dan Solusi. *Prosiding Seminar Nasional Pascasarjana*, 1111–1115.
- Syafii, M. L., & Sugianto, A. (2019). Pendampingan Pengucapan (Pronunciation) dalam Bahasa



- Inggris di Pondok Modern. *Jurnal Pengabdian Kepada Masyarakat*, 2(2), 32–37.
<https://doi.org/10.24269/adi.v2i2.1272>
- Utama, R. E. (2020). Strategi Pembiayaan Pesantren Melalui Pemberdayaan Ekonomi Umat. *Jurnal Tahdzibi: Manajemen Pendidikan Islam*, 5(2), 117–134.
<https://doi.org/10.24853/tahdzibi.5.2.117-134>
- Zhu, M., & Wang, C. (2025). A systematic review of AI in language education: Current status and future implications. *Language Learning & Technology*, 29(1), 1–29.
<https://doi.org/10.64152/10125/73606>
- Zulaikah, Z., Ariyansah, R. T., Astuti, D., & Hidayatullah, R. (2023). Implementasi AI dalam Proses Pemberian Materi Belajar Membaca Bahasa Inggris Menggunakan Metode The Paired Reading pada Anak Usia 14-20 Tahun di Pondok Pesantren Nurul Fatah Desa Karang Kemiri OKU Timur. *Jurnal Indonesia Mengabdi*, 5(1), 25–30.
<https://doi.org/10.30599/jimi.v5i1.2076>
- Zulkarnindra, M. (2021). Artificial Intelligence as an Innovation in Language Learning. *Asian Journal of Multidisciplinary Education*, 7(2), 55–63. <https://doi.org/10.4018/IJDET.385045>

