PROCEEDING OF SEMINAR NASIONAL RISET LINGUISTIK DAN PENGAJARAN BAHASA (SENARILIP VIII)
11th of September 2024 | https://ojs2.pnb.ac.id/index.php/SENARILIP/

Exploring the Possible Use of Generative Artificial Intelligence in Supporting Students' Speaking Performance

I Putu Yoga Laksana[1]✉, Putu Dyah Hudiananingsih[2], Ketut Suciani[3], Putu Tika Virginiya[4], Luh Gede Eka Wahyuni[5]

Politeknik Negeri Bali[1,2,3,4]
Universitas Pendidikan Ganesha[5]
*Address correspondence: Sibangkaja, Abiansemal, Badung, Bali, Indonesia
E-mail: yoga.laksana@pnb.ac.id

Abstract - The rapid advancement of generative artificial intelligence (AI) has sparked significant interest in its potential applications for language learning, particularly in English as a Foreign Language (EFL) contexts. This study investigates students' perceptions of integrating generative AI in their English-speaking performance, focusing on the perceived benefits, challenges, and overall impact on language learning experiences. Employing a qualitative approach, semi-structured interviews were conducted with 30 undergraduate EFL students from an International Business Management program. Thematic analysis revealed several key findings: students reported enhanced speaking practice opportunities, improvements in fluency and vocabulary, and personalized feedback as primary benefits of AI integration. However, challenges in replicating authentic communication and concerns about the reliability of AI-generated feedback were also identified. The study highlights the importance of a balanced approach that combines AI-assisted learning with traditional pedagogical methods, emphasizing the continued relevance of human interaction in language education. While generative AI showed a positive impact on student motivation and engagement, ethical implications and the potential for over-reliance on AI tools necessitate careful consideration in implementation. These findings contribute to the growing body of knowledge on technology-enhanced language learning and provide valuable insights for educators and researchers exploring innovative approaches to improving EFL students' speaking skills. Future research should focus on longitudinal studies examining the long-term effects of AI integration on speaking performance and overall language proficiency, as well as developing frameworks for the responsible and ethical use of AI in language learning contexts.

Keywords: EFL, generative artificial intelligence, language learning, speaking performance, student perceptions

1. INTRODUCTION

The rapid advancement of artificial intelligence (AI) has profoundly impacted various aspects of education, including language learning. Generative AI, particularly tools like ChatGPT, has emerged as a revolutionary technology with enormous potential to

transform the landscape of English language teaching and learning (Baskara & Mukarto, 2023; Kostka & Toncelli, 2023). These AI systems leverage natural language processing and deep learning algorithms to generate contextually relevant responses, making them valuable tools for enhancing learning experiences (Nam & Nguyen, 2022). However, despite years of English study, many students, particularly in EFL contexts, continue to struggle with speaking skills due to limited practice opportunities and various psychological factors (Zrekat & Al-Sohbani, 2022; Chantaraphat & Jaturapitakkul, 2023). This raises the question of how generative AI can be effectively integrated into language learning to address these challenges and improve students' speaking performance.

The integration of technology in language learning draws upon several theoretical frameworks. The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2016) offers insights into factors influencing students' adoption of new technologies, such as generative AI, in their learning process. Additionally, the Complexity, Accuracy, and Fluency (CAF) model (Housen & Kuiken, 2009) provides a robust foundation for evaluating language performance, particularly in speaking. Empirical studies have demonstrated the potential benefits of AI in language education. For instance, Cai et al. (2023) found that factors such as perceived usefulness, ease of use, and enjoyment significantly influence learners' attitudes towards AI-assisted language learning. Similarly, Li et al. (2023) highlighted the potential of ChatGPT in providing varied language learning contexts, which is crucial for developing speaking skills.

Despite the growing body of research on AI in language education, there is a notable lack of studies examining students' perceptions of generative AI use in relation to their speaking performance, particularly within the EFL context. While previous studies have explored the integration of AI with other learning tools (Gozali et al., 2024; Kusuma et al., 2024), the specific combination of generative AI and speaking performance in EFL remains underexplored. This gap is significant, as understanding students' perceptions and experiences becomes crucial for developing effective and engaging learning environments that leverage AI technology to enhance speaking skills.

The rationale for exploring students' perceptions of integrating generative AI in speaking performance is multifaceted. First, generative AI has the potential to provide personalized feedback and unlimited practice opportunities, addressing the lack of speaking practice often cited as a barrier to improvement (Alrasheedi, 2020). Second, AI tools may help reduce anxiety and increase confidence in speaking, which are common challenges for EFL learners (Muslem et al., 2021). Finally, understanding how students perceive and interact with generative AI can inform the design of more effective language learning experiences that combine the benefits of technology with traditional pedagogical approaches.

This study's significance lies in its potential to inform pedagogical practices in EFL courses, particularly in improving speaking skills. As educators and institutions increasingly integrate AI into their curricula, understanding students' perceptions and experiences becomes crucial for developing effective and engaging learning environments. Furthermore, this research contributes to the ongoing dialogue about the ethical and practical implications of AI in education, addressing concerns about overdependence and the need for balanced integration (Yang et al., 2024). By exploring students' perceptions of generative AI use in relation to their speaking performance, this study aims to provide valuable insights for educators, researchers, and policymakers in the field of language education, ultimately contributing to the advancement of technology-enhanced language learning in EFL contexts.

2. METHOD

This study employed a qualitative research methodology to explore students' perceptions of integrating Generative AI in their English-speaking performance. A qualitative approach was chosen due to its ability to provide rich, in-depth insights into participants' experiences, thoughts, and feelings (Creswell & Poth, 2018). This method is particularly suitable for investigating complex phenomena such as the integration of new technologies in language learning, where individual experiences and perceptions play a crucial role. The research design, participant selection, data collection, and analysis were all carefully structured to ensure a comprehensive understanding of how students perceive and interact with Generative AI in the context of developing their English-speaking skills. By focusing on the lived experiences of the participants, this methodology allows for the emergence of nuanced themes and patterns that might not be captured through quantitative methods alone. The following sections detail the specific components of the research methodology, including the research design, participant selection, data collection instruments, and analytical approach.

2.1 Research Design

This study employed a qualitative approach to explore students' perceptions of integrating Generative AI in their English-speaking performance. A phenomenological design was chosen to gain in-depth insights into the lived experiences of students using Generative AI for speaking practice. This approach allows for a rich, detailed exploration of participants' thoughts, feelings, and experiences regarding the use of AI in their language learning process (Creswell & Poth, 2018).

2.2 Research Participants

The study involved 30 undergraduate students (11 males, 19 females) aged 19-20 from the International Business Management study program at a public vocational college in Indonesia. Participants were selected using purposive sampling to ensure that all

respondents had experience with AI-assisted language learning tools in their English for Specific Purposes (ESP) courses. The sample size of 30 was considered sufficient for a qualitative study of this nature, allowing for data saturation while maintaining manageable analysis (Guest et al., 2006).

2.3 Data Collection Instrument

Data were collected through semi-structured interviews. The interview questions were designed to elicit detailed responses about students' experiences with Generative AI in their language learning, particularly focusing on speaking performances. The questions were crafted to align with the Complexity, Accuracy, and Fluency (CAF) model (Housen & Kuiken, 2009), exploring how students perceive AI's influence on these aspects of their speaking performance. Additionally, questions were included to gauge students' perceptions of the usefulness, ease of use, and enjoyment of AI tools, drawing from the Unified Theory of Acceptance and Use of Technology (UTAUT) model (Venkatesh et al., 2016).

2.4 Data Analysis

The collected data was analyzed using thematic analysis, following the six-phase approach outlined by Braun and Clarke (2006). This process involved familiarization with the data through repeated reading of interview transcripts, systematic coding of relevant features across the entire data set, and collating codes into potential themes. These themes were then reviewed and refined in relation to the coded extracts and the entire data set, generating a thematic 'map' of the analysis. Clear definitions and names were developed for each theme, and compelling extract examples were selected to illustrate the findings. To enhance the reliability of the analysis, two researchers independently coded a subset of the data and compared their results, resolving any discrepancies through discussion. This intercoder reliability process helped minimize researcher bias and increase the trustworthiness of the findings (Campbell et al., 2013). The final analysis aimed to provide a coherent narrative of students' perceptions regarding the integration of Generative AI in their speaking performance, relating the findings back to the research question and existing literature.

3. RESULTS AND DISCUSSION

3.1 Results

The thematic analysis of the interview data revealed several key themes regarding students' perceptions of integrating Generative AI in their English-speaking performance. These themes provide insights into the perceived benefits, challenges, and overall impact of AI on students' language learning experiences.

1. Enhanced Speaking Practice Opportunities

Students consistently reported that Generative AI provided them with increased opportunities to practice speaking English. Many felt that the AI offered a safe, judgment-free environment for practicing, which helped boost their confidence.

Respondent #14: *"With ChatGPT, I can practice speaking anytime I want. It's like having a conversation partner available 24/7. I don't feel embarrassed making mistakes because it's just me and the AI."*

Respondent #7: *"The AI gives me topics to discuss that I wouldn't have thought of on my own. It challenges me to speak about a wide range of subjects, which I find really helpful."*

These responses highlight the significant role of Generative AI in overcoming traditional barriers to speaking practice, such as limited class time and fear of making mistakes in front of peers. The availability and versatility of AI-powered practice sessions appear to be key factors in enhancing students' engagement with speaking activities outside the classroom.

2. Improvement in Fluency and Vocabulary

Participants frequently mentioned improvements in their speaking fluency and vocabulary as a result of using Generative AI. They appreciated the AI's ability to introduce new words and phrases in context.

Respondent #23: *"I've noticed that I speak more smoothly now. The AI helps me practice linking words and using natural expressions. My vocabulary has definitely expanded too."*

Respondent #2: *"The AI introduces me to new vocabulary related to my major. It's great because I learn words that are actually relevant to my field of study."*

The students' experiences underscore the potential of Generative AI to support the development of fluency and vocabulary acquisition. The contextual learning of new words and phrases, particularly those relevant to students' fields of study, suggests that AI can provide targeted, meaningful language practice that aligns with learners' specific needs and interests.

3. Personalized Feedback and Error Correction

Many students valued the immediate, personalized feedback provided by the AI, particularly for pronunciation and grammar errors. However, some expressed concerns about the accuracy of this feedback.

Respondent #28: *"ChatGPT helped me to improve my grammar and pronunciation by providing corrections and suggestions directly while speaking."*

Respondent #18: *"The grammar corrections are helpful, but sometimes I'm not sure if the AI is always right. I still prefer to double-check with my teacher for complex grammar points."*

These comments reveal both the strengths and limitations of AI-generated feedback. While students appreciate the immediate corrections, particularly for pronunciation, there's a recognition of the AI's potential fallibility, especially with complex language points. This suggests a need for integrating AI feedback with human teacher input to ensure accuracy and build learner confidence.

4. Challenges in Authentic Communication

While students appreciated the practice opportunities, some expressed concerns about the AI's limitations in replicating authentic human communication.

Respondent #9: *"Talking to the AI is good practice, but it's not the same as talking to a real person. Sometimes the responses feel a bit unnatural or too perfect."*

Respondent #30: *"I worry that I might become too dependent on the AI. Real conversations are unpredictable, and the AI can't fully prepare me for that."*

These observations highlight a critical limitation of Generative AI in language learning: its inability to fully replicate the nuances and unpredictability of human communication. Students' awareness of this limitation suggests a mature understanding of the role AI can play in their learning journey, as well as the continued importance of human interaction in developing authentic communication skills.

5. Integration with Traditional Learning Methods

Students generally viewed Generative AI as a complement to, rather than a replacement for, traditional learning methods. They emphasized the importance of balancing AI use with human interaction.

Respondent #24: *"I see the AI as a great tool for additional practice, but I still value my classes and interactions with my teachers and classmates. It's the combination that works best for me."*

Respondent #12: *"The AI helps me prepare for class discussions. I practice with it first, which makes me more confident to speak up in class."*

These perspectives demonstrate that students view Generative AI as a complementary tool rather than a replacement for traditional learning methods. The synergy between AI-assisted practice and classroom interactions appears to enhance students' overall learning experience, suggesting that a blended approach could be most effective in improving speaking skills.

6. Impact on Motivation and Engagement

Many participants reported increased motivation and engagement in learning English, attributing this to the interactive and responsive nature of the AI.

Respondent #29: *"Using the AI makes learning English more fun. I find myself practicing more often because it's so easy to just start a conversation with the AI."*

Respondent #15: *"I'm more motivated to improve my speaking skills now. The AI gives me immediate responses, which keeps me engaged and wanting to continue the conversation."*

The increased motivation and engagement reported by students suggest that Generative AI has the potential to significantly enhance learner autonomy and self-directed practice. The interactive and responsive nature of AI appears to create a positive feedback loop, encouraging more frequent and sustained engagement with speaking activities outside of formal learning environments.

3.2 Discussion

The findings of this study reveal a complex interplay between generative AI and students' speaking performance in EFL contexts. The reported enhancement of speaking practice opportunities aligns with previous research highlighting the potential of AI to provide personalized and interactive language learning experiences (Li et al., 2023; Kostka & Toncelli, 2023). Students' appreciation of the safe, judgment-free environment for practice echoes the findings of Alm and Watanabe (2023), who emphasized the role of AI in reducing anxiety and creating a supportive learning atmosphere. However, this perceived benefit should be balanced against concerns raised by Liu et al. (2024) about the potential for over-reliance on AI, which may hinder the development of spontaneous communication skills essential for real-world interactions.

The reported improvements in fluency and vocabulary expansion through AI-assisted learning are consistent with the findings of Jabbari and Peterson (2023), who observed enhancements in lexical complexity and fluency among EFL learners using technology-mediated learning environments. However, our study's results suggest a more nuanced impact on accuracy, with some students expressing reservations about the reliability of AI-generated feedback. This aligns with the concerns raised by Alberth (2023) regarding the potential for AI to generate unreliable information, highlighting the need for critical evaluation of AI-generated content by both students and educators.

The theme of personalized feedback and error correction emerging from our study corroborates the findings of Escalante et al. (2023), who reported that AI-generated feedback could be as effective as human tutor feedback for improving ENL student writing. However, our results indicate that students valued human interaction alongside

AI assistance, particularly for complex language points. This preference for a blended approach supports the recommendations of Gozali et al. (2024) and underscores the importance of maintaining a balance between AI-assisted learning and traditional pedagogical methods.

The challenges in authentic communication identified in our study raise important questions about the limitations of AI in replicating the nuances of human interaction. This finding aligns with the concerns expressed by Yang et al. (2024) regarding the ethical implications of over-reliance on AI in education. While AI tools like ChatGPT offer unprecedented opportunities for language practice, they may fall short in developing the sociocultural competencies crucial for effective communication in real-world contexts. This limitation emphasizes the continued importance of human-to-human interaction in language learning, as highlighted by Kusuma et al. (2024) in their study of EFL preservice teachers.

Finally, the positive impact on motivation and engagement reported by students in our study is consistent with the findings of Cai et al. (2023), who identified enjoyment as a significant factor influencing learner attitudes towards AI-assisted language learning. However, this enthusiasm should be tempered with the critical awareness advocated by Tossell et al. (2024), who found that students' perceptions of AI tools like ChatGPT evolved as they gained more experience with them. As Klayklung et al. (2023) suggest, the integration of AI in language education requires a commitment to responsible development and implementation that empowers students while actively mitigating risks of dependence or disempowerment. Future research should focus on longitudinal studies to examine how students' perceptions and use of AI in language learning evolve over time, and how these changes impact their speaking performance and overall language proficiency.

4. CONCLUSION

This study provides valuable insights into students' perceptions of integrating generative AI in their English-speaking performance within EFL contexts. The findings reveal that while generative AI offers significant benefits in terms of enhanced speaking practice opportunities, improved fluency, and vocabulary expansion, it also presents challenges in replicating authentic communication and ensuring reliable feedback. The study underscores the importance of a balanced approach that combines AI-assisted learning with traditional pedagogical methods, emphasizing the continued relevance of human interaction in language education. The positive impact on student motivation and engagement highlights the potential of AI to transform language learning experiences. However, the ethical implications and potential for over-reliance on AI tools necessitate careful consideration in their implementation. As the field of AI in language education

continues to evolve, future research should focus on longitudinal studies to examine the long-term effects of AI integration on speaking performance and overall language proficiency. Additionally, developing frameworks for the responsible and ethical use of AI in language learning contexts remains crucial. Ultimately, this study contributes to the growing body of knowledge on technology-enhanced language learning and provides a foundation for educators and researchers to explore innovative approaches to improving EFL students' speaking skills in the age of artificial intelligence.

REFERENCES

Alberth. (2023). The use of ChatGPT in academic writing: A blessing or a curse in disguise? TEFLIN Journal, 34(2), 337-352. https://doi.org/10.15639/teflinjournal.v34i2/337-352

Alm, A., & Watanabe, Y. (2023). Integrating ChatGPT in language education: A Freirean perspective. Iranian Journal of Language Teaching Research, 11(3), 19-30. https://doi.org/10.30466/IJLTR.2023.121404

Alrasheedi, S. (2020). Investigation of Factors Influencing Speaking Performance of Saudi EFL Learners. Arab World English Journal, 11(4), 66-77.

Baskara, R., & Mukarto. (2023). Exploring the implications of ChatGPT for language learning in higher education. Indonesian Journal of English Language Teaching and Applied Linguistics, 7(2), 343-358.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Cai, Q., Lin, Y., & Yu, Z. (2023). Factors influencing learner attitudes towards ChatGPT-assisted language learning in higher education. International Journal of Human–Computer Interaction, 1-15. https://doi.org/10.1080/10447318.2023.2261725

Cai, Q., Lin, Y., & Yu, Z. (2023). Factors influencing learner attitudes towards ChatGPT-assisted language learning in higher education. International Journal of Human–Computer Interaction, 1-15.

Campbell, J. L., Quincy, C., Osserman, J., & Pedersen, O. K. (2013). Coding in-depth semistructured interviews: Problems of unitization and intercoder reliability and agreement. Sociological Methods & Research, 42(3), 294-320. https://doi.org/10.1177/0049124113500475

Chantaraphat, Y., & Jaturapitakkul, N. (2023). Use of Peer Tutoring in Improving the English-Speaking Ability of Thai Undergraduate Students. rEFLections, 30(3), 826-849.

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

Escalante, J., Pack, A., & Barrett, A. (2023). AI-generated feedback on writing: Insights into efficacy and ENL student preference. International Journal of Educational

Technology in Higher Education, 20(57). https://doi.org/10.1186/s41239-023-00425-2

Gozali, I., Wijaya, A. R. T., Lie, A., Cahyono, B. Y., & Suryati, N. (2024). Leveraging the potential of ChatGPT as an automated writing evaluation (AWE) tool: Students' feedback literacy development and AWE tools integration framework. The JALT CALL Journal, 20(1), 1-22. https://doi.org/10.29140/jaltcall.v20n1.1200

Gozali, I., Wijaya, A. R. T., Lie, A., Cahyono, B. Y., & Suryati, N. (2024). Leveraging the potential of ChatGPT as an automated writing evaluation (AWE) tool: Students' feedback literacy development and AWE tools integration framework. The JALT CALL Journal, 20(1), 1-22.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. Field Methods, 18(1), 59-82. https://doi.org/10.1177/1525822X05279903

Housen, A., & Kuiken, F. (2009). Complexity, accuracy, and fluency in second language acquisition. Applied Linguistics, 30(4), 461-473. https://doi.org/10.1093/applin/amp048

Housen, A., & Kuiken, F. (2009). Complexity, accuracy, and fluency in second language acquisition. Applied Linguistics, 30(4), 461-473.

Jabbari, N., & Peterson, M. (2023). Complexity, accuracy, and fluency improvements through massively multiplayer online gaming: A longitudinal mixed-methods case study. The Language Learning Journal, 51(4), 416-450. https://doi.org/10.1080/09571736.2022.2163575

Klayklung, P., Chocksathaporn, P., Limna, P., Kraiwanit, T., & Jangjarat, K. (2023). Revolutionizing education with ChatGPT: Enhancing learning through conversational AI. Universal Journal of Educational Research, 2(3), 217-225. https://ssrn.com/abstract=4574954

Kostka, I., & Toncelli, R. (2023). Exploring applications of ChatGPT to English language teaching: Opportunities, challenges, and recommendations. TESL-EJ, 27(3), 1-19. https://doi.org/10.55593/ej.27107int

Kostka, I., & Toncelli, R. (2023). Exploring applications of ChatGPT to English language teaching: Opportunities, challenges, and recommendations. TESL-EJ, 27(3), 1-19.

Kusuma, I. P. I., Roni, M., Dewi, K. S., & Mahendrayana, G. (2024). Revealing the potential of ChatGPT for English language teaching: EFL preservice teachers' teaching practicum experience. Studies in English Language and Education, 11(2), 650-670. https://doi.org/10.24815/siele.v11i2.34748

Kusuma, I. P. I., Roni, M., Dewi, K. S., & Mahendrayana, G. (2024). Revealing the potential of ChatGPT for English language teaching: EFL preservice teachers' teaching practicum experience. Studies in English Language and Education, 11(2), 650-670.

Li, B., Bonk, C. J., & Kou, X. (2023). Exploring the multilingual applications of ChatGPT: Uncovering language learning affordances in YouTuber videos. International Journal of Computer-Assisted Language Learning and Teaching, 13(1), 1-22. https://doi.org/10.4018/IJCALLT.326135

Li, B., Bonk, C. J., & Kou, X. (2023). Exploring the multilingual applications of ChatGPT: uncovering Language Learning affordances in YouTuber videos. International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT), 13(1), 1-22.

Liu, M., Zhang, L. J., & Biebricher, C. (2024). Investigating students' cognitive processes in generative AI-assisted digital multimodal composing and traditional writing. Computers & Education, 211, 104977. https://doi.org/10.1016/j.compedu.2023.104977

Muslem, A., Zulfikar, T., Astilla, I., Heriansyah, H., & Marhaban, S. (2021). Students' Perception Toward Oral Corrective Feedback in Speaking Classes: A Case at English Education Department Students. International Journal of Language Education, 5(4), 244-259.

Nam, V. H., & Nguyen, T. K. C. (2022). The Impact of AI Chatbot on Customer Willingness to Pay: An Empirical Investigation in the Hospitality Industry. Journal of Trade Science.

Tossell, C. C., Tenhundfeld, N. L., Momen, A., Cooley, K., & de Visser, E. J. (2024). Student perceptions of ChatGPT use in a college essay assignment: Implications for learning, grading, and trust in artificial intelligence. IEEE Transactions on Learning Technologies, 17, 1069-1081. https://doi.org/10.1109/TLT.2024.3355015

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2016). Unified theory of acceptance and use of technology: A synthesis and the road ahead. Journal of the Association for Information Systems, 17(5), 328-376. https://doi.org/10.17705/1jais.00428

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2016). Unified theory of acceptance and use of technology: A synthesis and the road ahead. Journal of the Association for Information Systems, 17(5), 328-376.

Yang, Z., Wu, J. G., & Xie, H. (2024). Taming Frankenstein's monster: Ethical considerations relating to generative artificial intelligence in education. Asia Pacific Journal of Education, 1-14. https://doi.org/10.1080/02188791.2023.2300137

Yang, Z., Wu, J. G., & Xie, H. (2024). Taming Frankenstein's monster: Ethical considerations relating to generative artificial intelligence in education. Asia Pacific Journal of Education, 1-14.

Zrekat, Y., & Al-Sohbani, Y. (2022). Arab EFL University learners' perceptions of the factors hindering them to speak English fluently. Journal of Language and Linguistic Studies, 18(1), 775-790.