JOLLT Journal of Languages and Language Teaching
https://e-journal.undikma.ac.id/index.php/jollt
Email: jollt@undikma.ac.id
DOI: https://doi.org/10.33394/jollt.v13i3.14190

July 2025 Vol. 13, No. 3
p-ISSN: 2338-0810
e-ISSN: 2621-1378
pp. 1432-1444

GENERATIVE ARTIFICIAL INTELLIGENCE IN ENGLISH INSTRUCTION: INDONESIAN EFL VOCATIONAL HIGH SCHOOL TEACHERS' PERSPECTIVES

Tri Wintolo Apoko
English Lecturer, Faculty of Teacher Training and Education, Universitas Muhammadiyah Prof. Dr. Hamka, Indonesia
Corresponding Author Email: triwin_apoko@uhamka.ac.id

Article Info
Article History
Received: December 2025
Revised: April 2025
Published: July 2025
Keywords
EFL teachers;
English instruction;
Generative artificial intelligence;
Vocational high schools;

Abstract

Generative artificial intelligence (Gen-AI) tools have been widely used in English teaching and learning. However, in the context of EFL teachers in vocational high schools, not all the teachers are aware of the potential of Gen-AI for English instruction. This study aims to address the gap identified in previous research by investigating Indonesian EFL teachers' perceptions and challenges of integrating Gen-AI into their classrooms. The participants of this study were 37 EFL teachers from diverse vocational high schools in Eastern Jakarta, Indonesia. This study employed a sequential explanatory mixed-methods design, combining quantitative and qualitative data. A cross-sectional survey was conducted to identify the perceptions of teachers and the challenges they face when integrating Gen-AI in their teaching practices. A semi-structured interview was conducted with a subset of participants to gather qualitative data on their experiences and challenges in utilizing Gen-AI. The results of the survey reveal positive perceptions among EFL teachers regarding the use of Gen-AI in English classes (Mean=4.00, SD=0.53). The findings also reveal that teachers are confident and willing to adopt Gen-AI tools (Mean=3.92, SD=0.49) acknowledging their ease of use and practicality in daily teaching practices (Mean=3.92, SD=0.60) and aligning with industry-specific needs (Mean=3.95, SD=0.52). The study underscores the need for equitable access and professional development to support the effective use of Gen-AI in vocational EFL context, ultimately enabling more innovative and future-ready English instruction.

How to cite: Apoko, T.W. (2025). Generative Artificial Intelligence in English Instruction: Indonesian EFL Vocational High School Teachers' Perspectives, *JOLLT Journal of Languages and Language Teaching*, 13(3), 1432-1444. Doi: https://doi.org/10.33394/jollt.v13i3.14190

INTRODUCTION

The rapid development of generative artificial intelligence (Gen-AI) has brought significant innovations to English teaching and learning. Gen-AI, such as chatbots, text generators, and language models, can produce human-like text, simulate conversations, and generate feedback, offering new ways to increase students' language skills and provide personalized learning experiences. Recent advancements have led to the incorporation of AI-driven tools like OpenAI's ChatGPT, which have transformed classroom dynamics by enabling autonomous learning, supporting language practice, and enhancing teachers' instructional strategies. These AI tools are gaining recognition in English language teaching (ELT) for their potential to boost personalized education and improve learning outcomes (Kovalenko & Baranivska, 2024; Wei, 2023).

Previous studies have explored the use of Gen-AI in language learning, particularly focusing on student perceptions, language proficiency improvements, and AI's role in facilitating individualized instruction. Research has shown that Gen-AI tools can improve students' writing skills, help with grammar corrections, and provide language models for speaking and listening exercises as well as make them enjoyable and motivating (Song & Song,

2023; Tai & Chen, 2024).While much of this research highlights the benefits of AI for students, little attention has been given to English as a Foreign Language (EFL) teachers' perspectives, especially in the context of Gen-AI use in English classrooms. Existing studies have not sufficiently explored how EFL teachers perceive and integrate these technologies into their pedagogical practices in classrooms, particularly in Indonesia, where digital literacy and access to AI-driven tools vary significantly, and the use of AI promotes dynamic learning interactions and language skills (Hartono et al., 2023; Jumpakate, 2024). This gap in the literature underscores the need for more research focusing on EFL teachers' perceptions, experiences, and challenges related to Gen-AI in teaching English in Indonesian schools, particularly in vocational education settings. In Indonesia, vocational high schools play a critical role in preparing students for industry careers, in which English proficiency is increasingly vital. Despite growing interest in digital innovation in education, little is known about how EFL teachers in these schools perceive and adopt Gen-AI tools to support English teaching.

This study aims to address the gap identified in previous research by investigating Indonesian EFL vocational high school teachers' perceptions of Gen-AI applications in English teaching. Specifically, it seeks to understand how teachers perceive and accept the use of these AI tools in their instructional practices and identify the challenges they face when integrating Gen-AI into their classrooms. The findings of this study are expected to contribute to the growing body of knowledge on Gen-AI in language teaching, providing insights that can inform EFL teacher training programs and policy development in Indonesia, where digital tools are increasingly important for educational progress and more teachers in the future to trust in AI-EdTech (Edmett et al., 2023; Nazaretsky et al., 2022). Moreover, the study seeks to offer practical recommendations for overcoming barriers to AI integration in the classroom and enhancing the effectiveness of Gen-AI-assisted English instruction. To achieve the objectives, the study is guided by the research questions: How do Indonesian EFL vocational high school teachers perceive and accept the use of Gen-AI applications in their English teaching? And What challenges do EFL teachers encounter qualitatively in the use of Gen-AI?

Literature Review

Generative Artificial Intelligence

Generative artificial intelligence (Gen-AI) is a subset of AI technology that generates new data from inputs such as text, images, music, or code. Gen-AI's development dates back to the early 1950s and 1960s when neural networks began to study pattern recognition and data generation (Dissanayake, 2021). Over the past few decades, the emergence of more advanced models such as Generative Antagonistic Networks (GANs) and large-scale language models such as GPTs (Generative Pre-trained Transformers) has marked a major milestone in the evolution of AI (Corchado et al., 2023). These models can now generate more coherent human-like products, enabling extensive applications across the industry. Gen-AI is not just a data processing tool, it actively creates original content based on learned patterns and is an important asset in the fields of media, education and art.

Gen-AI has found applications in various fields, ranging from healthcare to education (Ooi et al., 2023). In the field of healthcare, artificial intelligence models are used to draft responses from healthcare workers to patients and to analyze the medical records looking for trends (Edwards, 2023). In the sector of marketing, Gen-AI is used to design advertising campaigns. Alphabet and Meta are developing technology to improve the efficiency of marketers, and Google is launching advertising campaign services in a machine learning system (Levy, 2023). In the educational field, Gen-AI is increasingly used to support personal learning, fostering inquiry and essential skills as well as students' engagement and interactivity. AI-driven applications can generate adaptive content based on the needs of individuals (Mittal et al., 2024). For example, Squirrel AI Learning, a Chinese company, has used AI to track students' progress and create personalized learning contents, improving learning outcomes

(Imtiaz, 2024). In higher education, AI-generated feedback on student essay writing practice has shown that it provides more descriptive feedback including information about how the essay writing is written and potentially offers AI integration as a feedback source (Banihashem et al., 2024).

The efficacy of Gen-AI depends largely on its implementation and its use context. Studies have shown that AI can improve learning outcomes by providing instant feedback and tailoring learning experiences (Nguyen et al., 2020). However, there are still concerns about excessive dependency on technology and the potential for academic dishonesty of learning experiences (A. Nguyen et al., 2024). Moreover, there are ethical issues, such as data privacy, the risk of persistent biases in the content produced by AI, and the potential for intellectual property problems when creating creative work by AI (Howard & Borenstein, 2020; Ironsi, 2024). Ensured transparency and fairness of Gen-AI systems remains a critical concern, particularly in the fields of education. In addition, the costs and technical expertise required to implement advanced artificial intelligence systems restrict their accessibility in some regions.

Generative AI in English Teaching

The application of Gen-AI in English teaching has seen significant growth in recent years, with AI tools being used to assist both teachers and students in language acquisition. In China, the use of AI speech evaluation program has shown that most students found it useful, pleasant, and easy to use for their speaking practice (Zou et al., 2023). Studies have noted that Gen-AI provides and tailors personalized learning environment as well as helps students improve their English language proficiency and reveals improved linguistic confidence (Liu, 2024; Waluyo & Kusumastuti, 2024). Similarly, Gen-AI such as chatbots, speech recognition systems, and mobile language apps have given instant feedback on English language courses at the university level to help improve speaking fluency and pronunciation (H. A. Nguyen, 2024).

While AI tools are generally viewed positively for their ability to enhance language learning, teachers' perceptions vary based on factors such as technological readiness and familiarity with AI. In a study conducted in Malaysia, ESL teachers found Gen-AI tools easy to use to incorporate in their classroom, not only due to the support provided by the institution but also because of the system interface encouraging them to utilize the tools (Zainuddin et al., 2024). Eleven EFL Teachers in Kazakhstan, who were interviewed about their use of ChatGPT, demonstrated positive attitudes while highlighting the need for structured assistance and extensive training support to effectively integrate Gen-AI tools into their classrooms (Dilzhan, 2024).

Gen-AI offers several advantages in English language teaching, including personalized learning experiences, time efficiency, and increased student engagement. English teachers from two upper secondary schools in Southern Sweden reported that Gen-AI such as ChatGPT was found to significantly decrease grammar errors in students' writing and was believed to be successful for personalized language learning (Mohammad Ali, 2023). Another study conducted by Chung and Jeong (2024) revealed that 134 English preservice teachers in China perceived Gen-AI tools efficient in grammar and writing courses. Moreover, in a study conducted in the US, 147 teachers from diverse groups (US, UK, and Canada) through a survey assumed that Gen-AI tools could enhance their professional development and would be a good tool for student engagement (Kaplan-Rakowski et al., 2023).

Challenges in adopting Gen-AI for English teaching include the excessive dependence on AI tools, lack of teacher confidence, and lack of training to technology. In a study from Thailand, 17 EFL teachers conveyed that, while AI-based platforms were effective in creating lesson and language activity, dependability, trustworthiness, and capacity to increase excessive student dependence posed significant challenges (Ulla et al., 2023). In the context of Hong Kong EFL teachers, most of them believed that they lacked the confidence and competence to effectively address the implementation of Gen-AI tools (Moorhouse & Kohnke, 2024).

Similarly, in Indonesia, through a mixed-methods design, 13 EFL teachers suggested the need for a comprehensive training on Gen-AI tools and adequate technological support to anticipate the technical issues and teacher capacity (Hutauruk & Daulay, 2024). These findings recommend that both technical and human support systems need to be in place for effective Gen-AI.

RESEARCH METHOD

Research Design

This study employs a sequential explanatory research design, a mixed-methods approach that combines quantitative and qualitative phases to provide a more comprehensive understanding of the research problem. In this design, quantitative data are collected and analyzed first, followed by qualitative data to further explain or expand on the initial findings (Creswell & Plano Clark, 2018). This approach is particularly suited to exploring Indonesian EFL teachers' perceptions and challenges in using Gen-AI, as it allows for broad statistical trends to be identified through surveys and then deepened through qualitative insights from interviews. This design is beneficial for exploring both the breadth and depth of the issues, enabling researcher to capture a holistic picture of teachers' experiences and concerns regarding Gen-AI adoption (Ivankova et al., 2006). By incorporating survey data with follow-up interviews, this study offers both quantifiable patterns and rich, contextualized narratives.

Context and Participants

The study was conducted to 30 vocational high schools in Eastern Jakarta, Indonesia, including public and private institutions, to ensure a representative sample of diverse teaching contexts. The participants were 37 EFL teachers from all grades (grades 10, 11, 12) who have experience or are currently using Gen-AI tools in their teaching practice. Teachers were invited to participate in the study based on their willingness and their availability to provide detailed insights into the use of Gen-AI in their classrooms. To ensure the sample represents various levels of experience with technology, participants were stratified based on the genders, ages, school status, their years of teaching experience and prior exposure to AI technologies where most EFL teachers use ChatGPT, Grammarly, and Canva. The following is the participant demography.

Table 1
Demographics of the Participants

No	Categories	Sub-categories	Participants (37)	%
1	Gender	Female	28	75.68
		Male	9	24.32
2	Age	25-30 years old	8	21.62
		31-35 years old	7	18.92
		36-40 years old	6	16.22
		40-45 years old	8	21.62
		> 45 years old	8	21.62
3	School status	Public	9	24.32
		Private	28	75.68
4	Teaching grade	10	15	40.54
		11	8	21.62
		12	14	37.84
5	Teaching experience	< 5 years	11	29.73
		5-10 years	15	40.54
		11-15 years	4	10.81
		16-20 years	3	8.11
		> 20 years	4	10.81

Instruments and Measures

In conducting this study, a survey and semi-structured interview are employed. The first phase of data collection involves administering a structured survey to gather quantitative data on EFL teachers' perceptions and acceptance of Gen-AI. The survey was developed based on the Technology Acceptance Model (TAM), which assesses perceived ease of use, perceived usefulness, and intention to use (Davis, 1989). Additional items were designed to capture demographic information and teachers' general attitudes toward Gen-AI in English instruction. The survey uses a 5-point Likert scale ranging from Strongly Disagree to Strongly Agree. Following the survey, a semi-structured interview was conducted with a subset of participants to gather qualitative data on the challenges they encounter when using Gen-AI in their classrooms. The interview questions were semi-structured, allowing participants to provide detailed responses while enabling the researcher to explore emerging themes. The interviews focus on specific issues such as perceived use of Gen-AI, technical difficulties, and its roles. The following is the questions addressed to the participants:

(1) What is your opinion on the use of generative AI tools in teaching English in vocational high schools?
(2) What challenges or barriers do you face when implementing generative AI in English instruction?
(3) How do you describe the role of generative AI in improving teaching and learning in vocational high schools?

Data Collection

Data collection occurs in two phases, reflecting the sequential explanatory design. In the first phase, the survey was distributed to EFL teachers across the selected vocational high schools in Jakarta. The survey was administered online using a digital platform (Google Forms) to facilitate access and responses. In the second phase, after the quantitative data have been collected, a smaller group of 6 EFL teachers were invited to participate in the semi-structured interviews. The selection of the participants was based on the representation of the gender, the teaching grade, and the school status. The purpose of this phase is to expand on the survey results by exploring the specific experiences and challenges of EFL teachers when incorporating Gen-AI into their English classrooms. The interviews were conducted via either face-to-face or online meetings within 10-15 minutes for each participant to respond, allowing the teachers to provide thoughtful, oral responses at their convenience.

Data Analysis

The quantitative data from the survey were analyzed using descriptive statistics, including means and standard deviations, to summarize teachers' perceptions of Gen-AI. The results from this phase provide an overview of how Gen-AI is perceived and accepted in Indonesian vocational high schools. The qualitative data from semi-structured interviews were analyzed using a thematic analysis (Braun & Clarke, 2006), involving familiarization with the data, generation of initial codes, searching for the themes, reviewing themes, defining and naming the thmes, and producing the final report. Thematic analysis is well-suited to exploring the nuances of teachers' experiences and challenges with Gen-AI, as it allows for in-depth exploration of participants' perspectives. The qualitative findings are used to contextualize and explain the quantitative results, providing a more comprehensive understanding of the research questions. To ensure the trustworthiness of the analysis, two independent coders initially coded a subset of transcripts and discussed discrepancies to reach consensus, thereby enhancing inter-coder reliability. Member checking was also employed, allowing participants to review and confirm the accuracy of the interpreted data. This rigorous analytical process helped to strengthen the credibility of the qualitative findings.

RESEARCH FINDINGS AND DISCUSSION

Research Findings

The survey results reveal positive perceptions among EFL teachers regarding the use of generative AI (Gen-AI) in English classes (see Table 2 and Figure 1). Teachers generally agree that Gen-AI tools can enhance students' learning outcomes (Mean = 4.00, SD = 0.53), with a high percentage (72.97%) selecting "agree" and an additional 13.51% choosing "strongly agree." Similarly, the alignment of Gen-AI with vocational high school curricula and learning objectives is strongly affirmed (Mean = 3.95, SD = 0.52), indicating that most respondents perceive Gen-AI as relevant and compatible with their instructional goals. Moreover, the ability of Gen-AI to foster student motivation and engagement also received favourable feedback (Mean = 3.78, SD = 0.58), though slightly lower levels of "strongly agree" responses (8.11%) suggest room for further exploration.

The data also highlight EFL teachers' confidence and willingness to integrate Gen-AI tools into their English instruction. Most participants feel confident in using Gen-AI (Mean = 3.92, SD = 0.49) and consider these tools practical and easy to use in daily teaching activities (Mean = 3.92, SD = 0.60). Importantly, teachers are optimistic about the long-term value of Gen-AI, as the majority (78.38%) expressed their intention to continue or start using these tools regularly (Mean = 3.95, SD = 0.47). Teachers also believe that Gen-AI supports the development of critical thinking and creativity in students (Mean = 3.84, SD = 0.60) and contributes positively to their career readiness (Mean = 3.89, SD = 0.46).

Despite these strengths, the responses indicate some challenges that need to be addressed. While professional development opportunities for utilizing Gen-AI tools are considered sufficient (Mean = 3.92, SD = 0.60), issues such as limited access to technology and lack of expertise still hinder effective implementation (Mean = 3.78, SD = 0.48). This suggests the need for targeted interventions to ensure equitable access and further build EFL teachers' technical proficiency. Overall, the findings underscore the transformative potential of Gen-AI in vocational EFL teaching while stressing the importance of ongoing support to overcome existing barriers.

Table 2
EFL teachers' voices on the use of Gen-AI in English instruction

No	Questions	SD	D	N	A	SA	Mean	STDV
1	Gen-AI tools increase students' learning outcomes in English classes.	0	0	13.51	72.97	13.51	4.00	0.53
2	Using Gen-AI in English instruction aligns with vocational high school curriculum and learning objectives.	0	0	16.22	72.97	10.81	3.95	0.52
3	Gen-AI tools promote students' motivation and engagement in English learning activities.	0	0	29.73	62.16	8.108	3.78	0.58
4	I feel confident integrating Gen-AI tools into my English teaching practices.	0	0	16.22	75.68	8.108	3.92	0.49
5	The use of Gen-AI helps students develop critical thinking and creativity in English learning.	0	0	27.03	62.16	10.81	3.84	0.60
6	Gen-AI applications are easy to use and practical in daily teaching practices.	0	0	21.62	64.86	13.51	3.92	0.60
7	Training and professional development opportunities for utilizing Gen-AI in teaching are sufficient.	0	2.70	13.51	72.97	10.81	3.92	0.60

No	Questions	SD	D	N	A	SA	Mean	STDV
8	Challenges such as limited access to technology or lack of expertise hinder the effective use of Gen-AI in English teaching.	0	0	24.32	72.97	2.703	3.78	0.48
9	The integration of Gen-AI tools in teaching will positively impact students' readiness for future careers.	0	0	16.22	78.38	5.405	3.89	0.46
10	I am likely to continue or start using Gen-AI tools regularly in my teaching practices.	0	0	13.51	78.38	8.108	3.95	0.47

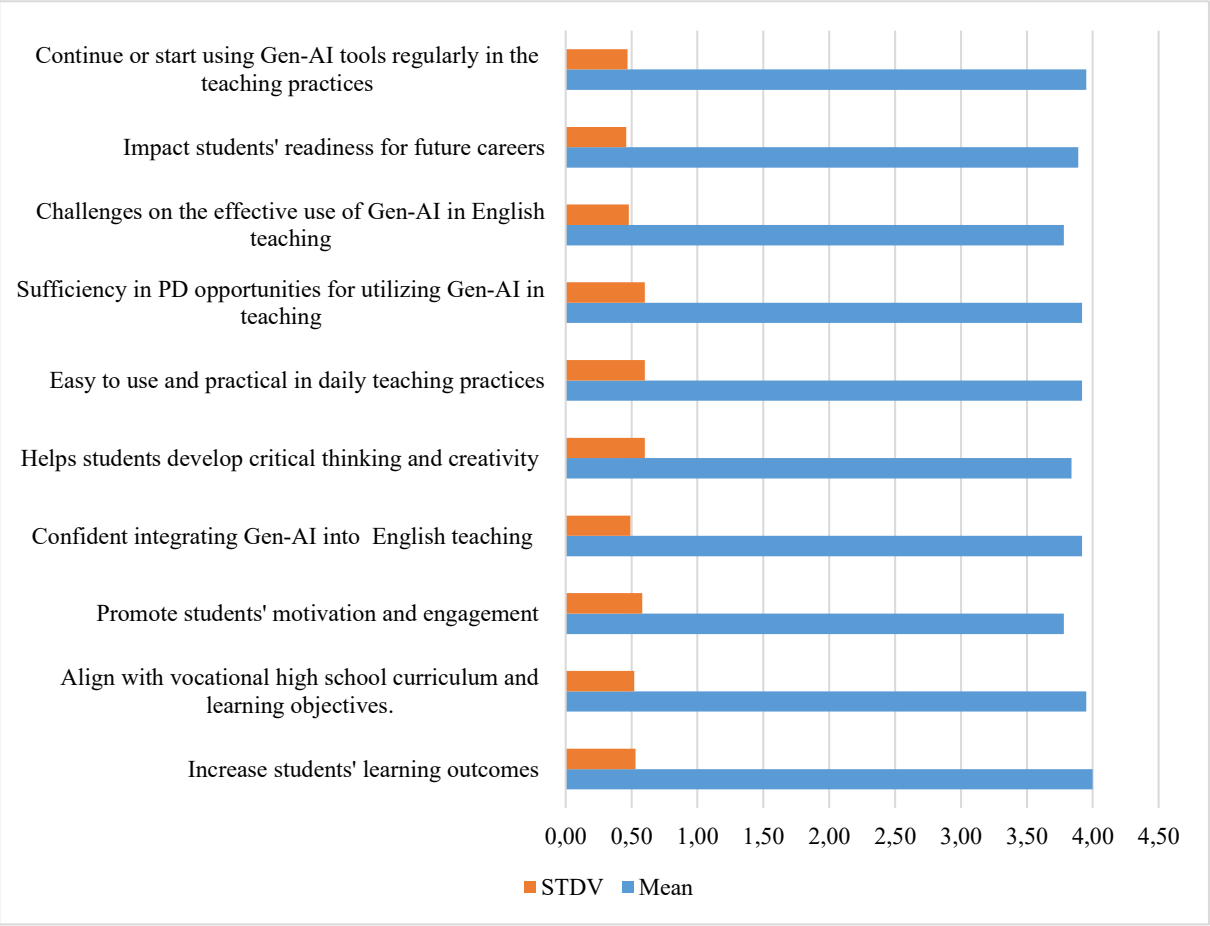

Figure 1. The EFL teachers' perceived use of Gen-AI in English instruction

The qualitative data further enriches this perspective by showcasing how Gen-AI tools enable EFL teachers to innovate in their teaching practices. Respondents emphasize the tools' benefits in generating diverse resources, such as fresh texts, dialogues, and animations, which make lessons more dynamic and suited to students' vocational needs. One teacher noted that these tools not only enhance creativity but also provide confidence in delivering lessons aligning with the demands of the modern era. Below are the excerpts from the interview.

"The use of Generative AI in teaching English Vocational High School is really helpful for me to teach. The AI tools really help me to create a learning material to be more creative and effective." (Respondent 1)

"Generative AI tools are very helpful for me as it provides assistance in English teaching and learning process, especially with specific purpose accordingly with vocational school where I teach." (Respondent 2)

"It helps me to create learning materials and assessment. I can be a creative teacher because I can give my students a fresh or new text, dialogue, and any other. AI can help me to create an animation video for learning, so I can make our class more interactive." (Respondent 4)
"By using AI tools or one of them, I will be fully confident in teaching in front of my students, because I can suit a way of my teaching in recent era in order to take my students successful in the future." (Respondent 5)

Despite the benefits, both the quantitative and qualitative data indicate certain challenges in implementing Gen-AI tools. Limited access to advanced features due to the cost of premium versions and inadequate technology infrastructure, such as low-specification devices, were commonly reported obstacles. Additionally, some respondents noted the lack of user-friendly instructions as a barrier, which hindered the seamless integration of these tools into their teaching practices. This reflects the quantitative finding that includes limited access and lack of expertise hindering the efficacy of using Gen-AI. Below are the excerpts from the interview.

"The paid application sometimes become a challenge because there are limits for the free access, so sometimes I must use several others free applications. The other barrier is my laptop specification. When I use the Gen-AI tools, I need to have adequate memory, and then it can be properly used." (Respondent 2)
"Implementing generative AI in English instruction faces several challenges, particularly around accessibility and usability. Some AI tools require me to upgrade to premium versions to access advanced features, creating barriers for those with budget constraints. Additionally, the lack of clear, user-friendly instructions on how to use these tools can make it difficult for me as an English teacher." (Respondent 3)

In the meantime, qualitative feedback regarding the role of Gen-AI in improving teaching and learning at vocational high schools, it is highly valued. EFL teachers report that AI tools enable the creation of diverse, industry-relevant content and foster engaging learning experiences. Respondents emphasize how these AI tools make lessons more efficient and interactive, shifting away from traditional methods and encouraging active participation. For students, AI-driven resources contribute to an enriched learning environment, helping them develop practical skills, critical thinking, and creativity. One respondent also highlighted how Gen-AI helps tailor content to specific vocational fields, such as pharmacy, graphic design, and technology, facilitating better communication of complex concepts and aligning learning materials with industry-specific applications. This perspective aligns with quantitative findings, where teachers believe Gen-AI tools prepare students for future careers and support continuous use of AI in teaching. Below are the excerpts from the interview.

"The role of generative AI in improving teaching and learning in vocational high school is really good because by using AI I have chances to create the lesson in many creative ways and also it is really efficient. For the students, by learning with AI tools, the learning situation will be more interesting instead of just focusing on their notebook or package book." (Respondent 1)
"Generative AI plays a significant role in improving teaching and learning in vocational high schools by providing valuable support for teachers who may not have expertise in specialized fields such as technology, pharmacy, and graphic design. It helps me to create relevant and engaging content tailored to specific vocational subjects, facilitating better communication of complex concepts. AI tools can also assist me in designing exercises, quizzes, and lesson plans that align with industry-specific vocabulary and real-world applications." (Respondent 3)
"As an English teacher in vocational high school, I need many kinds of English texts based on the majority that I teach, and when I use Gen-AI, it helps me so much. I can make many kinds of texts and sources for learning." (Respondent 6)

Thus, the findings underscore the transformative potential of Gen-AI in vocational English teaching, particularly in enhancing creativity, efficiency, and engagement. While EFL teachers recognize its benefits and express confidence in its use, challenges such as

accessibility, affordability, and usability highlight the need for targeted professional development and infrastructure improvements. Addressing these challenges would not only maximize the tools' effectiveness but also ensure equitable access, enabling all EFL vocational high school teachers to fully harness the potential of Gen-AI in English instruction.

Discussion

The findings of this study are in line with previous research that highlights the potential of Gen-AI in enhancing English language teaching by improving learning outcomes, fostering engagement, and promoting creativity. Studies have demonstrated that Gen-AI-based tools like ChatGPT and chatbots offer innovative ways to facilitate language learning, making lessons more interactive and increase students' learning outcomes and engagement (Kaplan-Rakowski et al., 2023; Liu, 2024; H. A. Nguyen, 2024). However, a study conducted in the United States showed that there was a minor disagreement of 68 teachers on the acceptable use of Gen-AI tools in the writing process such as brainstorming, outlining, writing, revising, feedback, and evaluating (Barrett & Pack, 2023).

In the vocational high school context, the ability of Gen-AI to align with industry-specific objectives, as highlighted by the respondents, mirrors the findings of Shelton (2024), who emphasized that AI tools can bridge the gap between academic and workplace competencies. This alignment enables teachers to prepare students effectively for real-world applications, reinforcing the role of AI as a transformative tool in education.

EFL Teacher confidence and willingness to use Gen-AI tools are also consistent with the literature. Research by Kong et al. (2024) conducted to 367 primary and secondary school teachers in Hong Kong highlights that professional development and user-friendly tools promote teacher confidence in using Gen-AI for their teaching. The respondents' enthusiasm for adopting Gen-AI reflects the broader trend of increasing teacher receptivity to AI integration, as noted by Zainuddin et al. (2024). However, confidence alone is not sufficient without adequate infrastructure and access to resources. The challenges of EFL teachers' limited access and technological barriers identified in this study are in line with findings by Duran & Ermiş (2024), who emphasized that the digital divide and inadequate technical infrastructure hinder the full adoption of AI in education as qualitatively shown by some school and vice principals in Turkey.

The qualitative feedback on the creative possibilities of Gen-AI reinforces the findings of Anis's (2023), who argued that AI tools foster innovative teaching methods by enabling teachers to develop interesting and interactive, and engaging materials that meet the diverse demands of students. Respondents highlighted their ability to create good contents such as fresh texts, dialogues, and animations, aligning with Majeed's et al. (2024) assertion that teachers integrating Gen-AI tools in developing contents can make classroom more interactive and engaging. However, the role of Gen-AI in fostering critical thinking and creativity, as observed in this study, is in contrast with a report by Hoernig et. (2024), who found that students who were too dependent on Gen-AI for the answers would lead to a passive learning attitude, in which they might accept AI-generated solutions without questioning, especially under time pressure.

However, the challenges related to affordability, usability, and professional development underscore the importance of addressing barriers to Gen-AI adoption. As highlighted by Hutauruk & Daulay (2024) and Duran & Ermiş (2024), insufficient training and financial constraints limit teachers' ability to leverage AI tools effectively. The need for professional development programs such as workshops, seminars, and other training on Gen-AI applications, as suggested by respondents, resonates with Anis's (2023) findings of who advocate for comprehensive teacher training programs to ensure effective implementation of

AI in classrooms. These programs should not only focus on technical skills but also on integrating AI into pedagogical practices to maximize its impact on student learning.

Ultimately, the findings of this study support the growing consensus in the literature that Gen-AI holds transformative potential for English instruction in vocational high schools. While its ability to enhance creativity, engagement, and industry-specific skills is evident, challenges such as accessibility and usability must be addressed to ensure equitable access. Studies by Eden at al. (2024) emphasize that policy interventions and investments in digital infrastructure are critical to overcoming these barriers. By addressing these challenges, educational institutions in the longer term can fully harness the potential of Gen-AI, enabling EFL teachers to deliver high-quality, innovative, and more personalized, industry-relevant learning in vocational ELT settings.

CONCLUSION

Based on the findings, this study highlights the transformative potential of Gen-AI in English teaching at vocational high schools, emphasizing its ability to enhance learning outcomes, foster student engagement, and align with industry-specific needs. EFL Teachers overwhelmingly perceive Gen-AI as a valuable tool for creating dynamic, tailored content that promotes creativity, critical thinking, and career readiness. The findings also reveal that teachers are confident and willing to adopt Gen-AI tools, acknowledging their ease of use and practicality in daily teaching practices. However, challenges such as limited access to advanced features, inadequate technology infrastructure, and insufficient user-friendly instructions hinder the full implementation of these tools. Addressing these barriers is essential to ensure equitable access and to maximize the benefits of Gen-AI in transforming vocational English instruction.

This study is limited by its relatively small sample size and focus on vocational high schools in a specific context, which may restrict the generalizability of the findings to other educational settings. Additionally, the study primarily captures teachers' perspectives without exploration of students' experiences and learning outcomes. Future research should expand the sample size, include diverse educational contexts, and investigate the direct impact of Gen-AI on student learning. The study highlights the importance of ongoing professional development tailored to emerging Gen-AI tools, equipping EFL teachers not only with technical skills but also with pedagogical strategies for effective implementation. Additionally, ensuring digital equity through infrastructure investment and inclusive access to advanced Gen-AI features remains vital to supporting all EFL teachers to use these tools effectively.

ACKNOWLEDGEMENT

The author would like to address his thank to the institute of Research, Community Service, and Publication, Universitas Muhammadiyah Prof. Dr. Hamka, which has fully funded this research with Grant Number: 295/F.03.07/2024.

REFERENCES

Anis, M. (2023). Leveraging artificial intelligence for inclusive English language teaching: Strategies and implications for learner diversity. *Journal of Multidisciplinary Educational Research*, *12*(6), 54–70. http://ijmer.s3.amazonaws.com/pdf/volume12/volume12-issue6(5)/9.pdf

Banihashem, S. K., Kerman, N. T., Noroozi, O., Moon, J., & Drachsler, H. (2024). Feedback sources in essay writing: peer-generated or AI-generated feedback? *International Journal of Educational Technology in Higher Education*, *21*(1), 23. https://doi.org/10.1186/s41239-024-00455-4

Barrett, A., & Pack, A. (2023). Not quite eye to A.I.: student and teacher perspectives on the use of generative artificial intelligence in the writing process. *International Journal of*

Educational Technology in Higher Education, *20*(1), 59. https://doi.org/10.1186/s41239-023-00427-0

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

Chung, J. Y., & Jeong, S.-H. (2024). Exploring the perceptions of Chinese pre-service teachers on the integration of generative AI in English language teaching: Benefits, challenges, and educational implications. *Online Journal of Communication and Media Technologies*, *14*(4), e202457. https://doi.org/10.30935/ojcmt/15266

Corchado, J. M., López F., S., Núñez V., J. M., Garcia S., R., & Chamoso, P. (2023). Generative artificial intelligence: Fundamentals. *ADCAIJ: Advances in Distributed Computing and Artificial Intelligence Journal*, *12*(1), e31704. https://doi.org/10.14201/adcaij.31704

Creswell, J. W., & Plano Clark, V. L. (2018). Conducting mixed methods research. *Beyond Bullying*, 74–82. https://doi.org/10.4324/9781315858555-16

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319. https://doi.org/10.2307/249008

Dilzhan, B. (2024). Teaching English and artificial intelligence: EFL teachers' perceptions and use of ChatGPT. *SDU University (Dissertation)*.

Dissanayake, D. M. C. (2021). Artificial intelligence: A brief overview of the discipline. https://www.researchgate.net/profile/Chandeepa-Dissanayake-2/publication/368852628_Artificial_Intelligence_-_A_Brief_Overview_of_the_Discipline/links/63fe13550d98a97717c5ba9d/Artificial-Intelligence-A-Brief-Overview-of-the-Discipline.pdf

Duran, A., & Ermiş, U. F. (2024). A qualitative focus on school leaders' perceptions of roles, responsibilities, and expectations in enhancing equitable access to educational technology In the era of gen-AI. *Ahi Evran Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *10*(1), 208–227. https://doi.org/10.31592/aeusbed.1440249

Eden, C. A., Chisom, O. N., & Adeniyi, I. S. (2024). Integrating AI in education: Opportunities, challenges, and ethical considerations. *Magna Scientia Advanced Research and Reviews*, *10*(2), 6–13. https://magnascientiapub.com/journals/msarr/sites/default/files/MSARR-2024-0039.pdf

Edmett, A., Ichaporia, N., Crompton, H., & Crichton, R. (2023). Artificial intelligence and English language teaching: Preparing for the future. *British Council*, 2008–2024. https://www.teachingenglish.org.uk/sites/teacheng/files/2024-08/AI_and_ELT_Jul_2024.pdf

Edwards, B. (2023). *GPT-4 will hunt for trends in medical records thanks to Microsoft and Epic. Ars Technica*. https://arstechnica.com/information-technology/2023/04/gpt-4-will-hunt-for-trends-in-medical-records-thanks-to-microsoft-and-epic/

Hartono, W. J., Nurfitri, N., Ridwan, R., Kase, E. B. S., Lake, F., & Zebua, R. S. Y. (2023). Artificial intelligence (AI) solutions In English language teaching: Teachers-students perceptions and experiences. *Journal on Education*, *6*(1), 1452–1461. https://jonedu.org/index.php/joe/article/view/3101

Hoernig, S., Ilharco, A., Pereira, P. T., & Pereira, R. (2024). *Generative AI and higher education: Challenges and opportunities*. https://www.ipp-jcs.org/wp-content/uploads/2024/09/Report-AI-in-Higher-Education-IPP-1.pdf

Howard, A., & Borenstein, J. (2020). AI, robots, and ethics in the age of COVID-19. *MIT Sloan Management Review*, *12*. https://sloanreview.mit.edu/article/ai-robots-and-ethics-in-the-age-of-covid-19/

Hutauruk, D. R., & Daulay, S. H. (2024). Teachers' perception of generative AI tools for English language instruction. *Conference on English Language Teaching*, 69–78. https://proceedings.uinsaizu.ac.id/index.php/celti/article/view/1012/898

Imtiaz, Q. (2024). Artificial intelligence: A double-edged sword for the education and environment of the global market. *Educational Administration Theory and Practice*, *30*(6), 3181–3193. https://doi.org/10.53555/kuey.v30i6.6013

Ironsi, C. S. (2024). Exploring the potential of generative AI in English language teaching. In *Facilitating global collaboration and knowledge sharing in higher education with generative AI* (pp. 162–185). IGI Global. https://doi.org/10.4018/979-8-3693-0487-7.ch007

Ivankova, N. V, Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods*, *18*(1), 3–20.

Jumpakate, T. (2024). Teachers' perceptions and experience in using technology for the classroom. In *Computer-Assisted Language Learning Electronic Journal* (Vol. 22, Issue 1, pp. 1–24). https://doi.org/10.26686/wgtn.25909804

Kaplan-Rakowski, R., Grotewold, K., Hartwick, P., & Papin, K. (2023). Generative AI and teachers' perspectives on its implementation in education. *Journal of Interactive Learning Research*, *34*(2), 313–338. https://www.learntechlib.org/p/222363/

Kong, S. C., Yang, Y., & Hou, C. (2024). Examining teachers' behavioural intention of using generative artificial intelligence tools for teaching and learning based on the extended technology acceptance model. *Computers and Education: Artificial Intelligence*, *7*, 100328. https://doi.org/10.1016/j.caeai.2024.100328

Kovalenko, I., & Baranivska, N. (2024). Integrating artificial intelligence in English language teaching: Exploring the potential and challenges of AI tools in enhancing language learning outcomes and personalized education. *European Socio-Legal & Humanitarian Studies*, *1*, 86–95. https://doi.org/10.61345/2734-8873.2024.1.9

Levy, A. (2023, May 10). 2 companies are using generative AI to supercharge revenue. *Motley Fool*. https://www.fool.com/investing/2023/05/10/companies-using-generative-ai-supercharge-revenue/

Liu, J. (2024). Enhancing English language education through big data analytics and generative AI. *Journal of Web Engineering*, *23*(2), 227–250. https://doi.org/10.13052/jwe1540-9589.2322

Majeed, S., Khan, A. Y., Munir, M., Tariq, N. ul S., Rafiq, F., Khan, K., & Shan, R. ul. (2024). *Role of Generative Artificial Intelligence (Gen AI) in Academia: University Teachers' Perspective within Pakistani Higher Education Context*. https://doi.org/10.21203/rs.3.rs-5016419/v1

Mittal, U., Sai, S., Chamola, V., & Sangwan, D. (2024). A comprehensive review on generative AI for education. *IEEE Access*, *12*, 142733–142759. https://doi.org/10.1109/ACCESS.2024.3468368

Mohammad Ali, A. (2023). An intervention study on the use of artificial intelligence in the ESL classroom: English teacher perspectives on the Effectiveness of ChatGPT for personalized language learning. https://www.diva-portal.org/smash/record.jsf?pid=diva2%3A1774035&dswid=8837

Moorhouse, B. L., & Kohnke, L. (2024). The effects of generative AI on initial language teacher education: The perceptions of teacher educators. *System*, *122*, 103290. https://doi.org/10.1016/j.system.2024.103290

Nazaretsky, T., Ariely, M., Cukurova, M., & Alexandron, G. (2022). Teachers' trust in AI-powered educational technology and a professional development program to improve it. *British Journal of Educational Technology*, *53*(4), 914–931. https://doi.org/10.1111/bjet.13232

Nguyen, A., Kremantzis, M., Essien, A., Petrounias, I., & Hosseini, S. (2024). Enhancing student engagement through artificial intelligence (AI): Understanding the basics, opportunities, and challenges. *Journal of University Teaching and Learning Practice*,

21(06). https://doi.org/10.53761/caraaq92

Nguyen, H. A. (2024). Harnessing AI-based tools for enhancing English speaking proficiency: Impacts, challenges, and long-term engagement. *International Journal of AI in Language Education*, *1*(2), 18–29. https://doi.org/10.54855/ijaile.24122

Ooi, K.-B., Tan, G. W.-H., Al-Emran, M., Al-Sharafi, M. A., Capatina, A., Chakraborty, A., Dwivedi, Y. K., Huang, T.-L., Kar, A. K., Lee, V.-H., Loh, X.-M., Micu, A., Mikalef, P., Mogaji, E., Pandey, N., Raman, R., Rana, N. P., Sarker, P., Sharma, A., … Wong, L.-W. (2023). The potential of generative artificial intelligence across disciplines: Perspectives and future directions. *Journal of Computer Information Systems*, 1–32. https://doi.org/10.1080/08874417.2023.2261010

Shelton, P. (2024). Redefining readiness: Higher education's role in an AI world how higher education can bridge the gap between human talent and machine intelligence for the workforce of tomorrow. https://scholarworks.umf.maine.edu/cgi/viewcontent.cgi?article=1020&context=honors_theses

Song, C., & Song, Y. (2023). Enhancing academic writing skills and motivation: assessing the efficacy of ChatGPT in AI-assisted language learning for EFL students. *Frontiers in Psychology*, *14*, 1260843. https://doi.org/10.3389/fpsyg.2023.1260843

Tai, T.-Y., & Chen, H. H.-J. (2024). Improving elementary EFL speaking skills with generative AI chatbots: Exploring individual and paired interactions. *Computers & Education*, *220*, 105112. https://doi.org/10.1016/j.compedu.2024.105112

Ulla, M. B., Perales, W. F., & Busbus, S. O. (2023). ' To generate or stop generating response' : Exploring EFL teachers' perspectives on ChatGPT in English language teaching in Thailand. *Learning: Research and Practice*, *9*(2), 168–182. https://doi.org/10.1080/23735082.2023.2257252

Waluyo, B., & Kusumastuti, S. (2024). Generative AI in student English learning in Thai higher education: More engagement, better outcomes? *Social Sciences & Humanities Open*, *10*, 101146. https://doi.org/10.1016/j.ssaho.2024.101146

Wei, L. (2023). Artificial intelligence in language instruction: impact on English learning achievement, L2 motivation, and self-regulated learning. *Frontiers in Psychology*, *14*, 1261955. https://doi.org/10.3389/fpsyg.2023.1261955

Zainuddin, N. M., Bukhari, N. A., & Mohamad, M. (2024). Implementation of artificial intelligence (AI) as a pedagogical tool in tertiary ESL classroom: Teachers' perspectives. *International Journal of Academic Research in Business and Social Sciences*, *14*(8). https://doi.org/10.6007/IJARBSS/v14-i8/22456

Zou, B., Lyu, Q., Han, Y., Li, Z., & Zhang, W. (2023). Exploring students' acceptance of an artificial intelligence speech evaluation program for EFL speaking practice: an application of the Integrated Model of Technology Acceptance. *Computer Assisted Language Learning*, 1–26. https://doi.org/10.1080/09588221.2023.2278608