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Investigating the Promises and Perils of Generative AI in EFL Learning in Higher Education: A Literature Review

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Abstract

In most disciplines, especially education, the spread of Generative Artificial Intelligence (GenAI) has been a hot topic. Since OpenAI launched ChatGPT (generative pre-trained transformer) in 2022, GenAI has garnered worldwide interest; as a result, the advent of GenAI has had significant applications for a number of fields, including language instruction. The teaching and learning of English as a foreign language (EFL) in higher education could be greatly improved by GenAI. This narrative review provides an overview of GenAI's background, its promising future, and functions in assisting English language learners, after which the difficulties that EFL students may have when using GenAI in their learning process are presented. Finally, the review presents findings on the benefits and limitations of GenAI, followed by a discussion of its implications. This study aims to equip EFL instructors and learners with the knowledge needed to leverage GenAI effectively, fostering more successful and interesting learning environments.

Keywords: *Generative artificial intelligence, GenAI, EFL, benefits, drawbacks*

Introduction

The ambience of learning and acquiring information has seen a significant transformation with the introduction of generative artificial intelligence (GenAI), whose capabilities are to generate texts, visuals, and many other types resembling human language (Walczak & Cellary, 2023, p.72). In academic settings, GenAI has greatly impacted how transformative the role of language teachers and learners can be. Walczak and Cellary (2023) assert that bearing the ability to autonomous artificial intelligence (AI) technologies has reshaped the conventional function of higher education institutions in transferring knowledge and developing skills. Language teachers can reduce their workload by asking GenAI to create exercises or mark students' written works based on their added prompts. Regarding students, they can play a more active role in their own language learning process with the functions of automated question

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generation (Lee et al., 2023) or interact with human-AI characters who can incorporate synthetic faces, bodies, and voices of any person, including historical figures, fictional characters, and even departed members in their families (Pataranutaporn, 2021). Besides, GenAI can help students dealing with many learning obstacles. According to some research, EFL learners have faced many difficulties in learning English (Normawati et al., 2023; AI-Jarrah & Ismail, 2018; Mahmood, 2020). In the study by Normawati et al. (2023), the student participants have trouble pronouncing words correctly and have challenges with grammar and vocabulary. Al-Jarrah and Ismail (2018) find that EFL learners have reading comprehension challenges, particularly in recognizing text genres. EFL learners also have issues with academic writing such as the need for instructors' better proficiency as well as issues with reference, coherence, and cohesiveness (Mahmood, 2020). Therefore, with the always-on assistance and availability of GenAI, EFL learners can maximize their time and opportunities to learn English ubiquitously and on any occasion. That students' personalized learning experiences are boosted aligns with the 4th goal in sustainable development: "ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all" defined by the United Nations. Nevertheless, the potential and constraints of GenAI are sparking key conversations among academics and professionals regarding the combination of education and GenAI (Nugroho, Putro, & Syamsi, 2023).

The present study aims to provide an overview of the background of GenAI, the promising potential as well as the challenges brought by GenAI to EFL learning, and ends with a concluding remark, thereby equipping EFL teachers and learners with comprehensive and critical understanding to optimize the potential of GenAI for improvement while avoiding its drawbacks in order to offer the best possible learning environments to learners.

Rationale

Despite its promised benefits, the practical implications of GenAI for EFL learners have still not been explored well. There is limited research explicitly addressing how GenAI might assist EFL students in learning different language skills and aspects. Furthermore, students' difficulties when utilizing GenAI to learn English have not been comprehensively investigated. Therefore, these gaps must be filled to guarantee that GenAI solutions are used efficiently to improve EFL learning experiences while reducing potential hazards.

Objectives

The objectives of this current study are to conduct a narrative review of the current landscape regarding the use of GenAI in English language learning among tertiary students, identify the gaps in research, suggest the implications as well as the future directions for further investigation.

Research questions

In order to address these gaps, this review aims to answer to following research questions:

1. What are the benefits that GenAI might offer EFL students in learning English?
2. How does GenAI support EFL students in various English language learning skills and aspects?

3. What challenges do EFL students might face when using GenAI for English language learning?

This study provides an overview of the background of GenAI, its promising potential, and its role in supporting English language learning. The review then explores the challenges EFL students might encounter when integrating GenAI into their learning process, followed by an analysis of the results, discussion, implications, and concluding remarks. Hopefully, this review will offer EFL teachers and learners a comprehensive and critical understanding of how to harness GenAI's potential for enhancing learning outcomes while mitigating its drawbacks, thereby creating a more effective learning environment.

Literature review

Background: Generative AI for Language Learning

Gen AI is made to perform well in natural language processing applications, including text generation, virtual assistants, chatbots, and language translation (Bozkurt, 2023). According to Jeffries and Ahn (2024), GenAI, a branch of AI, is geared toward producing content that looks like humans produce it. It makes use of "machine learning algorithms, specifically deep learning neural networks, to understand patterns and relationships within data sets, based on which the AI is then able to produce new content" (Jeffries & Ahn, 2024, p. 103). Bozkurt (2023) describes GenAI, ChatGPT as an example, as a potent tool that can learn, unlearn, and relearn language, enabling it to change and grow in response to the demands of human communication.

Besides text-to-text AI models such as ChatGPT or Gemini, other models such as DALL-e, Whisper, You, Midjourney, etc. offer text-to-image, text-to-video, text-to-sound, or any other input (Bozkurt et al., 2023). ChatGPT is also integrated into text editing programs (e.g., ProWritingAid's Rephrase function) and internet search engines (e.g. Bing) (Bozkurt et al., 2023).

Nowadays, there have been thousands of Gen AI tools in multiple fields. Below are some collected GenAI tools that can be used in language learning and teaching.

Table 1.
List of some typical Generative AI tools used in language instruction and acquisition

Modalities	**Main functions**	**Description**	**Tool Examples**
Visual	Image generation	Creating entirely new images based on the prompt of the user which can describe a scene, a product, or human beings	DALL-E, adobe.com, Leonardo AI, Midjourney, DreamStudio, Scribble Diffusion, RunwayML, Pictory
	Video generation	Converting written descriptions into full video clips	VideoGen, RunwayML, Pictory, InVideo AI, Descript, aiclip.ai, Sora
Audio	Voice generation	Creating realistic human speech from text to create natural-sounding audiobooks or narrations	Text-to-speech, Lovo.ai
	Music generation	Writing original pieces of music by specifying the genre, tone, ideal instruments, or even the lyrics	MuseNet, Junia.ai, WaveNet
Text	Text generation	Creating creative text structures using various writing styles and language translation	Chat GPT, Gemini, POE, Bing AI, Grammarly, Tome
	Transcribing audio	Text-to-speech conversion from audio or video records that is accurate	Whisper Web

Method

This study employs a narrative review approach to investigate the promises and perils of Generative AI in EFL learning in higher education. A narrative review is a review technique where researchers synthesize several source studies from which conclusions can be formed methodically and holistically, drawing on their own experiences and pre-existing hypotheses (Demiris, Oliver, & Washington, 2019). The researchers started screening the literature in March, 2024.

Search Strategy

The literature search was conducted across multiple academic databases including Google Scholar, ERIC (Education Resources Information Center), Web of Science, Science Direct, and IEEE Xplore Digital Library. The search utilized the following key terms and their combinations:

- "Generative AI" OR "GenAI" OR "ChatGPT" OR "Large Language Models"
- AND "EFL" OR "English as Foreign Language" OR "English Learning"
- AND "Higher Education" OR "University" OR "College"
- AND "Teaching" OR "Learning" OR "Education"

Inclusion and Exclusion Criteria

Table 2

Literature review selection criteria

Inclusion criteria	Exclusion criteria
1. Published between 2018 and 2024	1. Published before 2015
2. Written in English	2. Non-English publications
3. Focus on the application of Generative AI in EFL contexts, and in higher education settings	3. Opinion pieces and non-scholarly articles
4. Peer-reviewed journal articles, conference proceedings, and scholarly books	4. Studies examining AI in general without specific focus on generative AI or language learning
5. Research addressing either benefits, challenges, or both aspects of GenAI implementation in EFL learning	5. Publications without clear methodological approaches or theoretical frameworks

Data Analysis and Synthesis

The selected literature was analyzed using a thematic analysis approach to identify key themes and patterns. The analysis process involved:

1. Initial screening of titles and abstracts
2. Full-text review of selected articles
3. Data extraction and categorization based on benefits of GenAI in EFL learning; challenges and limitations; pedagogical implications; implementation strategies
4. The findings were synthesised under two major themes: Language skill development (grammar, vocabulary, reading, writing, speaking, listening) and noticeable challenges (institutional policies, technical considerations, and ethical concerns).

Results

Potential Benefits of GenAI for EFL Students

Unlocking Language Skills: Benefits of GenAI for EFL Learners

GenAI presents several advantages, such as individualized instruction, inclusive curricula, improved teamwork and cooperation in learning environments, automated evaluation, increased accessibility, increased time and effort efficiency, language skill, development, and nonstop access to these technologies (Bozkurt et al., 2023). According to Bozkurt et al. (2023), GenAI tools are found to be an efficient education tool for fostering lifelong learning, educational decision-making, a creative source of inspiration, breaking down linguistic barriers, fostering language proficiency, enhancing human knowledge acquisition and development potential, and creating customized learning paths.

In the study by Chan and Hu (2023), the majority of participants believed that GenAI was a useful tool with many advantages and were willing to engage with it, mostly for learning, writing, and research purposes. Firstly, fast and individualized learning assistance is stressed as GenAI can play a role as a virtual tutor for the students who are having difficulty with their tasks, offering them individualized learning support and prompt answers to their inquiries. Secondly, GenAI offers an assistance with writing and thinking because students occasionally struggle to come up with ideas and locate inspiration. The AI output can be used to formulate and expand on their ideas by entering a question pertaining to the writing topic. This virtual assistant is capable of offering technical assistance such as formatting and information retrieval, thereby boosting productivity. After writing, students can use GenAI to improve their writing skills such as grammar, paraphrasing, consulting some questions, and asking them to give feedback on their writing. Thirdly, students can benefit from GenAI's visual and audio multi-media support in producing artwork using text-to-image generation. Similarly, Nugroho, Putro, and Syamsi (2023) also explain an array of plus points that GenAI can offer for learning English, namely promoting vocabulary acquisition, offering learning resources, acting as a conversation partner, encouraging real-world interactions, supporting students' individualized learning (improving their writing skills, such as translation, paraphrasing, outlining, and receiving help with grammar and syntax), and increasing student productivity.

GenAI's support in various aspects of English learning for EFL students

Grammar and Vocabulary Acquisition

Promising outcomes have been observed in the support of grammar and vocabulary learning through the incorporation of GenAI in EFL instruction. The potential of gamified situations and game-based learning, respectively, to improve EFL learners' vocabulary and grammatical understanding is mentioned in the study by Cabrera-Solano (2022). Specifically, this study examines how employing Genially games in EFL training might improve students' academic performance in vocabulary and grammar, as well as their motivation, focus, and language proficiency. Cabrera-Solano (2022) shows that when it comes to the students' understanding of grammar and vocabulary in context, Genially games have the potential to improve the academic performance of EFL learners in online training. Additionally, it was shown that students' impressions of games tailored to their actual learning needs improve motivation, particularly when feedback is given effectively. Teng (2019) highlights the use of technology in vocabulary acquisition even further and recommends using applications like Word Engine, GSL Builder, AWL Builder, Shanbei, CAVOCA, and V-admin. These resources can be successfully integrated into EFL instruction to speed up vocabulary acquisition. The use of GenAI in grammar and vocabulary training is highly beneficial, according to Tsai et al. (2017), as GenAI

can boost motivation and collaboration and significantly affect students' performance. In line with this, CárdenasMoncada et al. (2020) claim that GenAI not only increases students' knowledge but also promotes active and dynamic learning in the EFL classroom. Similarly, Ngo (2024) states that compared to more conventional resources like dictionaries, ChatGPT improves retention, reduces cognitive overload, and encourages students to learn on their own.

Boosting Reading and Writing Skills

GenAI revolutionizes the landscape of English language learning by offering personalized and adaptive support for developing reading and writing skills. GenAI provides interactive exercises, writing assistance, reading comprehension practice, vocabulary building, and cultural context insights through its advanced capabilities. By tailoring learning paths to individual learners and offering instant feedback, GenAI creates an immersive and effective learning experience. For example, according to Ghufron and Rosyida (2018), and Qassemzadeh and Soleimani (2016), using Grammarly effectively assists students in lowering the mistakes that appear in their EFL writing because it may point out the mistakes that they make and suggest several solutions.

> *It can be inferred that the use of Grammarly software in EFL writing gives a positive contribution in reducing errors made by the students in terms of vocabulary usage (diction), language use (grammar), and mechanics (spelling and punctuation). It also encourages the students to be autonomous and independent learners as it requires the students to independently evaluate their own works with the help of feedback provision given by the syst em.* (Ghufron & Rosyida, 2018, p.401)

AI-based learning activities encourage students to advance their writing and reading abilities. EFL students find compelling aspects such as an appealing user interface and simple access through an interactive virtual platform such as Genially games for learning. These characteristics, thus, encourage involvement and dedication from learners.

Because students may practice recognizing key ideas, supporting details, and other parts of a reading passage while playing games, EFL learners have good opinions of using AI-based activities to boost reading comprehension abilities. While playing games, students may get better at reading and other language abilities (Castillo-Cuesta, 2022). In general, games adopted by GenAI can be helpful in helping them improve their writing abilities. Therefore, utilizing proper grammar, detecting suitable transitions, structuring thoughts inside paragraphs, and exhibiting an understanding of essay arrangement are all important.

A few studies have explored how GenAI language models may be used to assess writing assignments, offer instant feedback, and transform writing assessment techniques. For example, Mohamed (2024) explores how ChatGPT might supplement traditional pedagogies and increase EFL instructors' efficiency in grading while offering more precise and meaningful feedback. According to Koraishi (2023), instructors can save time and effort by streamlining the assessment process and use ChatGPT for grading. Barrett and Pack (2023) agree that GenAI can facilitate both teachers and students in all stages of writing, namely, brainstorming, outlining, writing, revision and feedback.

Speaking and Listening Skill Enhancement

Divekar et al. (2021) argue that the popular method for learning other languages as conversational role-play in the classrooms has some shortcomings pertaining to finding conversation partners outside their friend groups. This limits the learners' practice opportunities and leaves them wondering where they can use their new skills in real-life situations (Divekar

et al., 2021). As a result, "interactive conversational AI agents can uniquely expose students to authentic spoken conversations" (Divekar et al., 2021, p.2352).

Wu and Wang (2021) shed light on the usefulness of GenAI that can help students master the process of absorbing a lot of knowledge and build critical thinking abilities by involving students in an active learning process. They conducted an experiment on 31 English-majored students. The result shows that by the use of GenAI-based practices in the classrooms, students have developed their capacity to look for relevant speaking materials, carry out, and evaluate their own learning as well as their ability to self-manage their speaking and listening skills efficiently. Zhou (2020), in the same vein, presents that certain GenAI tools offer a large exercise database, several learning channels, and rich learning materials of listening skill. He mentions one GenAI-based self-learning platform uses a three-layer operating concept to help students become more proficient listeners of English, namely service layer, technical layer, and data layer (p.546). It improves the learning environment for English language learners and offers promptly learning support, recommendations, and assessments of students' daily performance.

In terms of pronunciation, some researchers conducted their studies to confirm the benefits of using GenAI. Take Hoang et. al. (2023), and Amin (2022) as examples, they all agree that GenAI plays a significant role in facilitating students' pronunciation learning, making them engage in the pronunciation classes. Specifically, a GenAI tool called AI TTS App "was beneficial and helped them [students] in learning pronunciation, encompassing segments (speech sounds), suprasegmental aspects" (stress, intonation, and rhythm) and connected speech rules" (Amin, 2022, p.898). The findings in Hoang et. al.'s study show that vocational students' English pronunciation skills were considerably enhanced by MissionFluent. When compared to the control group, the experimental group, which used the Chatbot on a regular basis, demonstrated statistically significant improvement. They demonstrated progress in stress, intonation, and vowel sounds, among other areas of speech. Likewise, a paper of Nguyen (2024) also mentions pronunciation, fluency, and learner autonomy were the main areas where the AI technologies were successful in improving speaking skills. The author also explains how AI-assisted practice can boost motivation and reduce worry by offering a stress-free setting where question complexity adjusts to each learner's aptitude. The results show that when AI chatbots are included into regular classes, they can improve students' language fluency by giving them more practice and instant feedback.

Challenges of integrating Gen AI into language learning

There are a number of drawbacks that generative AI can bring to language learners. The most dominant challenge that can be found in many research is unethical behavior in the classroom such as the issues of "academic honesty and integrity" (Bozkurt et al., 2023, p.58), plagiarism, and cheating (Nugroho et al., 2023). Plagiarism has long been a serious problem in academics. Still, since the advent of Gen AI technologies which advance quickly, it has been getting harder to spot content that has been copied (Chan & Hu, 2023). Besides, despite the fast development and widespread use of Gen AI in education, the policies of utilizing these technological tools in academic institutions remain ambiguous (Chan & Hu, 2023). There has been a lack of institutional guidelines around the application of Gen AI. Regulations that lack clarity may lead to the abuse or unexpected effects of Gen AI, which is dangerous for individuals and society. Without institutional supervision, students might not know how to use GenAI in institutions in a responsible manner (Chan & Hu, 2023).

Secondly, overreliance on technology is another challenge to language learners (Bozkurt et al., 2023; Nugroho, et al., 2023). According to Chan and Hu (2023), learners' holistic competencies are influenced because of such dependence on technology, especially ChatGPT, which over time may impede people's ability to grow, acquire new skills, and advance intellectually, leading to a decrease in critical thinking and make decisions only based on the information that AI provides to them as well as lose the ability or motivation to think independently. In line with this, Bozkurt et al. (2023) identify that the absence of creativity and critical thinking and a potential decline in creativity or originality are caused by AI influence. Human agency, therefore, is disregarded in the educational process (Bozkurt et al., 2023). These scholars also find that the process used to make decisions is the outcome of multiple elements interacting and relying on reasoning, empathy, imagination, and introspection, but the use of AI models in decision-making processes runs the risk of "being formularized" (p. 61), perhaps as a result of model manipulation.

An additional peril faced by language learners when using Gen AI in learning a language is its inaccuracy (Chan & Hu, 2023), erroneous answers (Nugroho et al., 2023), and "truth-relevant and truth-irrelevant content" (Walczak & Celery, 2023, p. 79). According to Chan and Hu (2023), the accuracy of the generated texts cannot always be guaranteed, so their false information may lead to the deception of some people. This finding aligns with the work of Nugroho et al. (2023) who also find that students run into a few difficulties including false or unclear information causing misunderstandings when using ChatGPT for language study. Further corroborating this finding, Walczak and Celery (2023) state that Gen AI has the ability to produce accurate or inaccurate responses to queries in various domains, which could be especially risky for decision systems. One reason for this, mentioned by Bozkurt et al. (2023) is algorithmic bias, suggesting that the reliability of the sources and credibility of the knowledge can be questioned.

Issues on human values such as inequality and unfairness are also considered challenges in some research (Bozkurt et al., 2023; Chan & Hu, 2023). Chan and Hu (2023) assert that Gen AI can exacerbate social injustice and inequality. Bozkurt et al. (2023) agree that not everyone has access to these technologies, thereby forming or deepening a digital divide between the privileged and the underprivileged. These scholars state that as ChatGPT develops, premium capabilities are now being made available at different price points, which could be prohibitive for certain users. Therefore, inequality and unfairness seem unavoidable until an equitable distribution is guaranteed.

Last but not least, there have been concerns about privacy and morality in the age of Gen AI (Bozkurt et al., 2023; Chan & Hu, 2023). Some participants in Chan and Hu's study (2023) worried that AI would use their messages to gather personal data, explaining that their messages would be utilized for the GenAI system development and would be likely to be leaked if they were not adequately safeguarded.

Discussion

Interpretation of the results

The literature demonstrates that GenAI is fundamentally transforming traditional EFL teaching and learning approaches. As highlighted by Bozkurt (2023) and Chan and Hu (2023), GenAI tools are reshaping the conventional knowledge transfer model in higher education. This review underscores that GenAI can substantially aid EFL learners by providing individualized instruction, fostering motivation, and enhancing various language skills such as grammar,

vocabulary (Cabrera-Solano, 2022; Tsai et al., 2017), reading (Ghufron & Rosyida, 2018; Qassemzadeh & Soleimani, 2016), writing (Barrett & Pack, 2023; Mohamed, 2024) , speaking (Divekar et al., 2021); Wu & Wang, 2021) , and listening (Hoang et al., 2023). Tools like ChatGPT, Grammarly, and AI-based games have shown potential in creating more interactive and engaging learning experiences. For instance, the integration of AI-powered feedback systems like Grammarly has been shown to reduce errors in writing and encourage autonomous learning, promoting a deeper understanding of language structures.

Moreover, GenAI's capability to simulate conversational partners and provide real-time corrections enhances learners' speaking and listening skills, creating opportunities for practice that were previously limited in traditional classroom settings. The use of AI in vocabulary acquisition through gamified applications further supports the notion that technology can make language learning more effective and accessible. This ability of GenAI to provide immediate, personalized feedback and create interactive learning experiences aligns with modern pedagogical needs for individualized instruction.

Despite these benefits, the review also identifies critical challenges associated with the use of GenAI. Issues such as academic dishonesty (Bozkurt et al., 2023; Chan & Hu, 2023), including plagiarism and over-reliance on AI tools, can potentially hinder the development of critical thinking and independent learning skills among students. Furthermore, the accuracy of AI-generated content is a concern, with instances of misinformation leading to confusion and misinterpretation.

Institutional challenges, such as unclear policies and the digital divide, exacerbate these issues. The absence of comprehensive guidelines on the use of GenAI in academic settings leaves room for misuse and ethical dilemmas, particularly regarding data privacy and equality of access.

Limitations

This study's reliance on a narrative review method limits its ability to provide a systematic and exhaustive synthesis of existing research. The inclusion criteria, while broad, may have excluded some relevant studies that could offer additional insights. Furthermore, the rapidly evolving nature of GenAI technologies means that new developments may not be fully captured in this review, potentially leading to an underestimation of both benefits and challenges.

Implications

The findings suggest that educators should integrate GenAI tools thoughtfully into their teaching practices, ensuring that they complement rather than replace traditional pedagogical approaches (Nugroho et al., 2023). Developing digital literacy among both teachers and students is crucial to maximize the benefits of GenAI while mitigating its drawbacks. Educators should also foster environments that encourage critical thinking and ethical use of technology, guiding students to use GenAI as a supplementary tool rather than a crutch (Bozkurt et al., 2023).

Policy makers should consider establishing clear guidelines and ethical standards for the use of GenAI in education. These policies should address issues of academic integrity, data privacy, and equitable access to technology to prevent the exacerbation of existing inequalities.

Conclusion

Research on the use of GenAI in language learning and teaching is exciting and has the potential to revolutionize language instruction. The goal of this literature review has been accomplished by providing answers to a number of review questions about the literature, identifying important terms associated with GenAI in language education, the most extensively studied language studies and educational levels, research areas, attitudes toward the use of GenAI, and potential advantages and difficulties of applying GenAI in this situation. This will either directly or indirectly create a genuine English communication environment for English language learners, and GenAI tools may offer precise feedback on the user's expression, grammar, syntax, pronunciation, and other basic issues. Through its linguistic form, it may even go deeply into the most sophisticated phases of semantic logic, context analysis, emotional processing, and avoiding sensitive topics (Liao, 2023).

Studies demonstrate GenAI's effectiveness in grammar and vocabulary learning. Cabrera-Solano (2022) discusses how Genially games improve academic performance in vocabulary and grammar. Teng (2019) recommends various applications for vocabulary acquisition. Tsai et al. (2017) and Cárdenas-Moncada et al. (2020) highlight GenAI's motivational and collaborative effects on student performance. GenAI enhances reading and writing skills through personalized support and interactive exercises. Ghufron and Rosyida (2018) and Qassemzadeh and Soleimani (2016) demonstrate Grammarly's effectiveness in reducing errors. Castillo-Cuesta (2022) finds that AI-based activities improve reading comprehension. Mohamed (2023) and Barrett and Pack (2023) discuss GenAI's role in grading and feedback, streamlining the assessment process. Besides, GenAI facilitates conversation practice, pronunciation correction, and listening comprehension. Divekar et al. (2021) highlight its use in exposing students to authentic conversations. Wu and Wang (2021) emphasize its role in active learning and self-management of skills. Zhou (2020) discusses its contribution to listening skill improvement. Hoang et al. (2023) and Amin (2022) confirm its benefits for pronunciation learning.

Despite its benefits, GenAI presents challenges in language learning. Issues include unethical behavior, such as plagiarism and cheating, as well as ambiguity in institutional policies (Bozkurt et al., 2023; Chan & Hu, 2023). Overreliance on technology can hinder holistic competencies and critical thinking (Bozkurt et al., 2023; Chan & Hu, 2023). Accuracy concerns arise due to algorithmic bias and the potential for false information (Chan & Hu, 2023; Nugroho et al., 2023; Walczak & Celery, 2023). Additionally, GenAI may exacerbate inequality and privacy concerns (Bozkurt et al., 2023; Chan & Hu, 2023). Ignoring the problems that the students themselves have created would be implausible. In other words, learners who rely too much on supporting GenAI materials may tend to develop laziness, become unable to sharpen language skills, and are even less able to absorb language naturally and effectively. As a result, teachers had better instruct their students to use GenAI tools wisely so that they would become additional tools to help them learn languages better, rather than become AI addicts. Law (2023) states that developing GenAI literacy is extremely vital in this digital age, especially for both educators and learners. The paper does also highlight a few significant obstacles and problems with using GenAI in education. The research findings indicate that deployment challenges of AI-based learning systems are caused by both objective and subjective variables. In terms of the objective part of AI-based learning tools, a few significant flaws, including repetitious website input forms or erroneous application suggestions, might disinterest pupils. Furthermore, the subjective aspect of AI-based language teaching programs encompasses users' personal experiences and perceptions, including their feelings, preferences, and engagement with the technology. This involves factors such as user experience, personalization, feedback,

emotional engagement, cultural sensitivity, trustworthiness, and perceived effectiveness. Users' interactions with these programs are influenced by how well the technology aligns with their learning preferences, the effectiveness of personalized features, the quality of feedback provided, emotional connections with the content, cultural considerations, trust in the technology's reliability, and overall satisfaction with learning outcomes. Understanding and addressing these subjective elements are essential for developers and educators to create AI-based language teaching programs that effectively support students' learning journeys.

The results of this study show that, in addition to building AI in education on the foundation of thorough research on education, it is critical to fortify regulations, uphold fair treatment, and guarantee consistency. Also, building teachers' abilities to use AI in the classroom should go hand in hand with that. We expect that our research will serve as an important starting point, creating the framework for further investigation and development to precisely and effectively construct the appropriate models and methods for integrating AI into academic training.

Future directions

There are several ways that future language learning research might investigate to incorporate GenAI models. These could include creating dynamic curriculum generation systems that customize learning experiences to each learner's preferences and proficiency levels, putting in place dialogue systems for immersive language practice, using generative models to help students with their creative writing assignments, creating multimodal learning environments that make use of AI-generated interactive content, and researching methods for transferring knowledge across languages through bilingual or multilingual instructional materials. By utilizing the power of GenAI models to create individualized, engaging, and productive learning environments, these approaches show potential future investigations into improving particular language learning and teaching experiences.

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