

Brief Report

# Navigating the impact of generative AI in English language education

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**Abstract:** The incorporation of generative AI, especially tools like ChatGPT, into English language teaching signifies a profound transformation in educational strategies. This paper examines the dual impact of GenAI on teaching and learning, emphasizing both its potential benefits and inherent challenges. GenAI provides tailored learning opportunities, flexibility, and increased independence for students, thereby enriching the educational experience. However, it also poses significant challenges, including issues of academic integrity, the risk of reducing human interaction in learning, and the need for strong digital skills. The study highlights the irreplaceable value of interpersonal engagement and empathetic understanding in human-teacher interactions, which remain central to effective education. Key factors such as ease of use, frequent usage intentions, acceptance, and information verification intentions are identified as crucial for the responsible adoption of GenAI tools like ChatGPT and DeepSeek. The paper also underscores teachers' cautious perceptions of AI, advocating for a focus on critical thinking and problem-solving skills rather than mere cognitive replacement. This paper emphasizes the importance of ethical guidelines, digital literacy, and the preservation of human-centric teaching practices; it presents a roadmap for the responsible integration of AI in education, ensuring that technological advancements enhance rather than undermine the educational experience.

**Keywords:** generative artificial intelligence (GenAI); ChatGPT; academic integrity; digital literacy; ethical AI guidelines

## 1. Introduction

The adoption of generative AI in education, especially for English language instruction, signifies a major change in teaching methods and has led to substantial reforms in the educational landscape. This integration offers numerous exciting opportunities but also presents considerable challenges due to its nascent nature. In the context of this study, the scope of AI is specifically defined within the realm of English language education, with a particular focus on the integration and impact of generative artificial intelligence (GenAI) tools, such as ChatGPT and DeepSeek. This scope encompasses the exploration of how GenAI can enhance teaching and learning processes by providing personalized learning experiences, adaptive feedback, and fostering student autonomy.

Artificial intelligence systems have inherent constraints, including ingrained biases and errors. Though ChatGPT can enhance students' autonomy and competence by offering adaptability, tailored feedback, and a secure environment for practice, research also highlights the significance of interpersonal engagement and empathetic understanding in human-teacher interactions [1]. Key factors like user-friendliness, regular usage, acceptance, and the intent to verify information influence the responsible use of ChatGPT, providing valuable insights for universities to improve their programs and promote AI literacy [2].

The complex landscape of education requires a deep understanding of how to integrate generative AI into teaching methods effectively. This integration should maximize the benefits of AI while maintaining the essential human elements of learning. As we explore the evolving relationship between technology and education, it is crucial to consider both the positive impacts and the inherent challenges. This reflection is essential for charting a balanced strategy that accommodates the needs of both learners and educators within this emerging educational paradigm.

## **2. Navigating challenges and opportunities**

The advent of GenAI, particularly tools like ChatGPT, has introduced a paradigm shift in the field of English language education. These tools offer personalized, contextualized, and interactive responses. One promising application is its role in facilitating personalized learning. By analyzing learner data, GenAI can adapt content and feedback to individual learning styles and progress, thereby improving engagement and outcomes [3]. Additionally, GenAI can support language acquisition by providing instant translations, vocabulary definitions, and conversational practice, making language learning more accessible and interactive [4]. Another opportunity lies in its potential to reduce educators' workload by automating routine tasks such as grading and feedback provision, allowing teachers to focus on more complex instructional activities [5]. Moreover, GenAI can serve as a complementary feedback source, working alongside peer feedback to provide a more comprehensive evaluation of student work [6].

GenAI is perceived as a groundbreaking yet disruptive force in education, offering significant benefits while presenting new challenges and potential disruptions, which compels educational stakeholders to hastily integrate this technology without ample opportunity for thorough comprehension and literacy development [7]. The potential of GenAI to facilitate learning and provide individualized experiences for students is well-documented [8,9].

GenAI tools, such as ChatGPT and DeepSeek, have demonstrated significant strengths in English language education. One of the most notable advantages is their ability to provide personalized and real-time feedback to learners. For instance, ChatGPT can generate tailored responses based on individual student inputs, offering constructive feedback on essays and language exercises [5]. This capability aligns with the growing demand for adaptive learning environments that cater to diverse learner needs. Additionally, GenAI tools can facilitate complex learning tasks, such as argumentative essay writing, by providing scaffolding and feedback on structure, coherence, and argumentation [6]. Moreover, GenAI's ability to increase accessibility to information and reduce teaching workload makes it a valuable resource for educators, particularly in large classes where personalized feedback is often challenging to provide [5].

Nevertheless, the integration of these tools also presents challenges, such as the need for a policy landscape, institutional governance, pedagogical culture, technological infrastructure, and social support mechanisms; Also, concerns about the dehumanization of learning and the potential for AI to replace human interactions, which are crucial for the development of social competence and

emotional intelligence, have been raised [10]. One significant weakness is its lack of deep contextual understanding. While ChatGPT can generate plausible responses, it often fails to grasp nuanced meanings or cultural contexts, which are critical in language learning [5]. This limitation can lead to superficial feedback that lacks depth and insight, particularly in tasks requiring higher-order thinking skills. Furthermore, GenAI tools are prone to biases and inaccuracies, as they rely on pre-existing datasets that may contain outdated or biased information [6]. Another concern is the difficulty in evaluating the quality of responses, as GenAI lacks the human ability to assess the credibility of its outputs, potentially leading to the dissemination of incorrect or misleading information [5].

Additionally, the risk of overreliance on AI tools and the need for digital literacy among students to critically evaluate the content generated by AI are significant challenges that need to be addressed [1]. Support from schools and technological pedagogical content knowledge, along with teacher agency and autonomy, positively influence teachers' intentions to create AI-assisted learning experiences [11]. Furthermore, despite the potential benefits of AI in enhancing learning outcomes, there remains a gap in empirical studies that investigate how these technologies can be effectively incorporated into educational practices [2]. These findings indicate that while AI offers innovative learning possibilities, effective implementation requires addressing teachers' readiness and support systems to navigate the integration challenges.

### **3. Students' use and perceptions of generative AI**

Understanding students' attitudes towards generative AI is crucial for its effective implementation in educational settings. Factors such as gender, age, academic major, type of educational institution, and institutional policies significantly influence the use of ChatGPT for various tasks, with older students in their 30s to 40s and non-native English speakers demonstrating a greater likelihood of frequent use, which underscores its potential as a tool for language acquisition; however, concerns about job displacement among computer science majors and differing attitudes toward institutional punishment for ChatGPT use, along with varying perceptions based on income level, also affect its adoption [12]. Research that investigates undergraduate students' perceptions and awareness of using ChatGPT, reveals that students are eager to leverage this tool for academic assignments and general information, indicating a significant influence of external factors such as privacy, security, social influence, and trust on their acceptance of ChatGPT [13] [14]. One major concern is the potential decline in higher-order cognitive skills, such as critical thinking and creativity, as students may become overly reliant on AI-generated content [5]. This over-reliance could lead to a superficial understanding of language and a lack of independent problem-solving skills.

Students value the tool for its capacity to offer prompt responses and advice for academic assignment enhancement, which boosts their perceived competence and self-assurance in language-related activities; however, there are mixed feelings regarding the impact on relatedness needs, with some students experiencing a sense of companionship and others expressing concerns about reduced human

interaction [1]. Students employing ChatGPT to generate responses for their tasks has rendered the summative assessment of completed assignments unreliable [7]. While students find ChatGPT beneficial for learning languages, particularly in writing and speaking, there is a notable barrier to its use among teaching staff [15]. Another significant threat is the democratization of plagiarism, as GenAI tools can generate essays and assignments that mimic human writing, making it difficult to detect academic dishonesty [6]. Ethical concerns also arise regarding data privacy and the perpetuation of biases in AI-generated content, which could reinforce existing inequalities in education [3]. Furthermore, the lack of clear ethical guidelines for the use of GenAI in education exacerbates these concerns, highlighting the need for robust frameworks to govern its application [5].

#### **4. Teachers' perceptions and concerns of AI**

The need for AI tools to encourage critical thinking and problem-solving skills, rather than simply replacing human cognitive competencies, remains the teachers' biggest concern [10]. Research delves into the profiles of teacher educators, identifying two distinct groups: Technoskeptics, who lack confidence in technology use and see it as inefficient, and technophiles, who actively engage with educational technologies and stress the importance of technological-pedagogical content knowledge in designing technology-enriched learning environments [16].

Teachers' perceptions of AI significantly influence its adoption in classrooms. Though teachers generally recognize the benefits of AI, they express concerns regarding their competence in using such technologies effectively [17]. Therefore, teachers worry about AI's disruptive potential in the classroom, which can lead to resistance against adopting such innovations [18]. In addition, technostress, namely, stress stemming from the use of technology, plays a pivotal role in shaping teachers' attitudes toward AI adoption [11]. The interplay of these factors underscores the intricacy of incorporating generative AI into educational contexts, thereby highlighting the necessity for supportive initiatives to mitigate educators' apprehensions. Teachers exhibit a cautious stance towards AI in education, concerned about its effects on assessment practices and the risk of academic integrity breaches through the misuse of AI-generated content, while acknowledging the potential for AI tools like ChatGPT to alleviate their workload and enable a focus on more complex educational tasks, yet also fearing that these tools might not accurately assess student learning [15].

#### **5. Conclusion**

Students generally view AI tools such as ChatGPT as advantageous for improving their language learning, especially in fostering independence and skill development. However, concerns remain about the effects on social interaction and the risk of becoming overly dependent on AI [1]. Educators recognize the potential of AI to improve teaching methods but encounter obstacles like technology-related stress and a lack of proficiency in using these tools. Teachers are cautious about the implications of AI on teaching and learning, with a focus on maintaining academic

integrity and promoting critical thinking. The significant challenges faced by educators—including risks to academic integrity, response errors and bias, over-dependence, the widening digital divide, and concerns about privacy and security—highlight the need for educational organizations to establish guidelines for the ethical use of AI in education, encouraging educators to embrace emerging trends rather than reject them and guiding students to view AI as a supportive tool and reference rather than a complete solution [18]. To stay ahead of the curve, it is essential to adjust the assessment of student work to emerging needs, enhance data and AI literacy among educators and students, and refine existing frameworks and principles for research, practice, and policy [7]. As the field navigates these challenges, it is crucial to consider the long-term implications of AI on human competencies and the need for a balanced approach that leverages the strengths of AI while addressing the challenges and concerns raised by both students and educators. Future research should focus on developing comprehensive support systems that empower educators and students alike to leverage AI effectively while addressing the inherent challenges.

The practical implementation of GenAI tools like ChatGPT in diverse educational contexts requires a nuanced approach that considers the varying needs and resources of different learning environments. In resource-rich settings, such as universities in developed countries, the integration of AI can be facilitated through comprehensive training programs for educators, the development of AI-enhanced curricula, and the establishment of institutional policies that promote ethical AI use [10]. In contrast, in resource-constrained environments, such as rural schools or underfunded institutions, the focus should be on providing basic digital infrastructure and fostering digital literacy among both teachers and students. Additionally, cross-cultural considerations must be addressed to ensure that AI tools are culturally sensitive and linguistically appropriate for diverse student populations. Collaborative efforts between educational institutions, technology providers, and policymakers are essential to create scalable and sustainable models for AI integration. By tailoring AI implementation strategies to the specific needs of each context, educators can maximize the benefits of AI while minimizing potential disruptions to the learning process.

Future research should prioritize the development of comprehensive support systems that empower educators and students to effectively leverage AI tools in education. This includes the creation of standardized ethical guidelines for AI usage, the design of professional development programs to enhance teachers' technological proficiency, and the implementation of AI literacy curricula for students [4]. Additionally, longitudinal studies are needed to assess the long-term impact of AI on learning outcomes, particularly concerning critical thinking and problem-solving skills [3]. Policymakers should collaborate with educators and technologists to establish frameworks that ensure equitable access to AI tools across diverse educational settings. Furthermore, interdisciplinary research that bridges the fields of education, technology, and ethics is essential to address the complex challenges posed by AI in education. By adopting a proactive and collaborative approach, the educational community can harness the potential of AI to enhance teaching and learning while addressing the ethical, social, and pedagogical concerns associated with its use.

Addressing the implications of generative AI in English language education requires a multidisciplinary framework that draws on insights from linguistics, pedagogy, and technology studies to ensure both theoretical depth and practical relevance. A comprehensive research agenda should prioritize examining the effectiveness of generative AI tools in fostering key language competencies, such as writing proficiency, lexical development, and analytical thinking, while concurrently addressing ethical challenges, including algorithmic bias, academic integrity, and data security [5]. In parallel, the development of practical instructional frameworks is critical to support educators in integrating AI into teaching practices, focusing on scaffolded learning approaches, synergistic human-AI interactions, and the promotion of digital literacy. Longitudinal research is necessary to evaluate the sustained impact of AI on educational outcomes, complemented by targeted professional development initiatives to empower educators in critically assessing and leveraging AI technologies. By aligning empirical inquiry with actionable pedagogical strategies, stakeholders can harness generative AI as a transformative tool in English language education, ensuring its responsible and equitable application.

**Conflict of interest:** The author declares no conflict of interest.

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