Applying AI to English Speaking and Writing Instruction in Higher Education: A SWOT Analysis

Yiming Wang*

Faculty of Education, Monash University, Clayton, Victoria 3800, Australia

Abstract. As artificial intelligence (AI) becomes more integrated into education, its role in supporting English language learning has drawn increasing attention. This paper explores how AI technologies impact the development of English speaking and writing skills, using a SWOT analysis framework to examine their strengths, weaknesses, opportunities, and threats. The findings show that AI tools provide real-time feedback, personalized guidance, and low-pressure practice environments, which significantly enhance learners' pronunciation accuracy, writing fluency, and self-regulation. However, challenges remain, such as students' over-reliance on AI, reduced critical thinking, lack of creativity, and concerns about data privacy and academic integrity. Despite these issues, AI still holds strong potential for improving immersive learning, cross-cultural communication, and personalized instruction, especially when combined with technologies like VR or data analytics. The study concludes that AI can be a powerful support in English output learning, but its success depends on thoughtful integration, ethical use, and continued teacher involvement to ensure it complements rather than replaces human interaction.

1 Introduction

By applying SWOT analysis framework, this essay explores the strengths, weaknesses, opportunities and threats connect with AI applying in speaking and writing. In order to provide a balanced overview of how AI can be effectively integrated into English language teaching, while taking into account potential risks.

In recent years, the rapid development of artificial intelligence (AI) has brought about considerable changes in various fields, including education. There are some AI tools that can provide students with personalized learning experiences and instant feedback, which are popular in the education field, especially in language learning. AI-based applications such as speech recognition software, writing assistants and chatbots are now widely used to help learners practice pronunciation, writing correction and interactive tasks. These tools can usefully increase the effectiveness of speaking and writing learning, promoting learner autonomy, and reducing the burden on teachers. However, the adoption of AI in language education also raises several concerns. Issues such as data privacy, over-reliance on

*Corresponding author: Ywan0935@student.monash.edu

© The Authors, published by EDP Sciences. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (https://creativecommons.org/licenses/by/4.0/).

technology, academic integrity, and potential impacts on teachers' roles need careful consideration.

This paper focuses on the application of AI in English speaking and writing, rather than listening and reading. Speaking and writing are productive skills, which often require more active use of language and present greater challenges for learners. Unlike receptive skills, they involve language output and self-expression, which can benefit significantly from AI-supported feedback, correction, and practice. Given that most AI tools are designed to provide real-time interaction, automated writing support, and individual guidance, it is especially valuable to examine their effectiveness in these two areas.

2 Advantages

2.1 Advantages in speaking learning

AI tools offer efficient, real-time feedback, providing students with precise pronunciation correction and various topics in their speaking exercises. Applications like Duolingo and ELSA Speak can check pronunciation accuracy in real-time, offering specific suggestions on intonation, speech rate, and stress patterns. Unlike traditional classrooms, where teachers may struggle to correct each student's pronunciation individually, such AI systems provide one-on-one, uninterrupted practice, greatly improving students' correction efficiency and focus [1]. In large class settings, AI-assisted speaking practice effectively addresses the issue of insufficient teacher feedback, offering students more opportunities for independent practice.

Moreover, AI speaking tools create a low-anxiety learning environment, benefiting shy or less confident students. In traditional face-to-face interactions, some students may hesitate to speak due to fear of making mistakes, peer pressure, or teacher judgment. In contrast, AI interactions lack emotional judgment, effectively reducing students' psychological burden and increasing their willingness to practice speaking, leading to more frequent and confident use of the language.

Platforms like Duolingo, one of the world's most downloaded language learning applications, offer comprehensive practice in listening, speaking, reading, and writing, including interactive dialogues with AI chatbots [1]. Such studies show that learners initially rely on the AI in language communication tasks and adjust their own performance according to the AI's feedback. Over time, learners move from dependence on the AI to self-regulation, showing that they can perform language tasks independently. This evolution indicates that AI involvement improves the learner's ability to self-regulate.

Through immediately feedback, a low-anxiety environment, AI effectively improves students' experience, the promotion of learner autonomy and outcomes in speaking practice. These advantages optimize the practice mechanism in oral teaching and provide students with more flexible, efficient and personalized learning opportunities.

2.2 Advantages in writing learning

In the field of English writing instruction, artificial intelligence offers a variety of support features that enhance learning. These include writing assistance, real-time feedback on errors, creative content generation, translation, and automated interaction. By providing timely and personalized suggestions, AI helps improve writing efficiency and creates a more interactive and engaging learning experience [2]. Such tools help students identify and correct frequent linguistic issues, including grammatical errors, misspellings, and improper sentence structures. Moreover, they offer targeted advice related to vocabulary precision, syntactic

variation, and the overall coherence of written discourse. This assists learners in gradually improving their writing over time. Some platforms like Grammarly, for instance, not only points out errors immediately but also suggests improvements across multiple dimensions of writing quality. Unlike traditional writing feedback, often delayed due to teachers' time limitations and their workload, AI systems provide instant responses. It allows learners to revise their work independently and repeatedly, thereby increasing both the speed and accuracy of written output [3].

Another notable advantage of AI writing tools is their ability to deliver personalized feedback. In contrast to standardized correction methods, AI can generate individualized suggestions by analyzing each learner's language proficiency, writing patterns, and prior error history. These personal features create more specific and effective learning routine. The form of personalized support not only caters to the diverse needs of learners across different proficiency levels, but also fosters greater motivation and stronger sense of self improvement, encouraging sustained writing development.

AI writing tools do well in enhancing students' writing efficiency, particularly by reducing the load associated with mechanical language errors. Many students, during the English writing process, often focus excessively on low-level errors such as grammar and spelling, diverting attention from content development and logical organization. AI assistance tools automatically detect and correct formal errors, alleviating students' basic language burdens, allowing them to concentrate more on overall structure and thematic expression, thereby improving writing fluency and overall quality.

Through promoting collaboration and communication between students and between students and teachers, AI writing tools foster a positive interactive learning environment. AI platforms can provide teachers with instant correction and feedback mechanisms, reducing teachers' grading workload while offering students more timely and continuous guidance. For students, AI-generated texts and suggestions facilitate peer collaborative learning, encouraging students to enhance critical thinking and writing skills through collaborative writing and peer review processes [4].

3 Weakness

One major issue is the lack of authentic communicative environments. Platforms like Duolingo and ELSA Speak mostly rely on preset dialogues and feedback. While students can receive real-time correction on pronunciation and intonation, they miss the chance to interact with real conversation partners. This affects their ability to handle complex contexts and weakens their pragmatic competence in cross-cultural communication. Godwin-Jones also points out that AI-generated language often lacks cultural and pragmatic authenticity, which makes it harder for students to fully develop real-world communication skills [5].

Another concern is the risk of overdependence on AI tools. Writing and speaking software like Grammarly and QuillBot are effective in quickly correcting grammar mistakes. However, when students rely on them for a long time, they may stop reflecting critically on their own language output, which negatively impacts their autonomous learning abilities. Smith notes that heavy reliance on AI may reduce students' critical thinking skills [6]. In addition, AI writing tools often have limits when it comes to fostering creativity. Hockly argues that many of these platforms, trained on large datasets, tend to produce standardized output, restricting students' personal writing style [7]. Similarly, Baron emphasizes that AI-generated texts are usually formulaic, lacking originality, which might cause learners to overlook developing their own voice [8].

Beyond language ability, the depth and explanatory power of AI feedback still need improvement. Most AI platforms focus on surface-level corrections like grammar and vocabulary but rarely offer meaningful guidance on structure, logical flow, or argumentative

strategies [9]. Furthermore, the widespread use of AI raises data privacy and academic integrity concerns. Johnson points out that many educational platforms collect user data without adequate safeguards [10]. More students are also turning to AI tools to complete entire writing tasks, which not only threatens academic honesty but also increases the burden on teachers who must check for originality.

4 Opportunities

As artificial intelligence technology continues to evolve, AI demonstrates great potential in supporting English speaking and writing learning. It is likely to introduce more innovative learning methods and teaching models in the near future. Advancements in technology and the integration of multiple fields offer new opportunities for both students and teachers.

In speaking learning, AI speech recognition and natural language processing technologies are progressing toward higher accuracy and more natural interactions. While current systems can detect basic pronunciation errors, they still face challenges in recognizing intonation and understanding context. With continuous training and optimization of machine learning models, AI is expected to provide more nuanced feedback and improved dialogue strategies, allowing learners to experience conversations that are closer to real-life scenarios [7]. Additionally, combining AI with immersive technologies such as virtual reality (VR) and augmented reality (AR) can create simulated communication environments. These immersive spaces give students practical opportunities to apply language skills in lifelike settings, improving their real-world communication abilities [5].

In writing learning, generative AI tools have the potential to offer even more personalized feedback and support for higher-order writing skills. At present, AI writing assistants mainly focus on basic issues like grammar and spelling. However, by utilizing big data analysis and tracking learners' writing history, future systems could provide targeted guidance on critical thinking, text structure, and logical argumentation [9]. This would not only help students improve writing quality but also develop their logical reasoning and academic writing skills.

Furthermore, AI opens up new possibilities for cross-cultural and multilingual learning, especially for students who may not have the chance to experience different cultures firsthand. Thanks to advancements in natural language processing, AI platforms can quickly adapt to various language environments, offering diverse input and output opportunities to students from different backgrounds. This trend is likely to promote the sharing of global learning resources, improve access to quality education, and support educational equity by ensuring that students from various regions benefit equally from AI-supported language learning.

5 Threats

Although artificial intelligence offers many advantages in speaking and writing education, its application also brings several potential threats.One of the main concerns is the challenge it presents to academic integrity. As generative AI tools like ChatGPT and Gemini become more widely used, students are increasingly relying on AI-generated content to complete writing tasks. Surveys show that more students now use AI tools to write essays or solve academic problems, often without being detected by teachers [11]. This trend certainly will weaken the skill of writing in critical thinking and original expression, and further increasing the risk of academic dishonesty.

Concerns about data privacy have grown increasingly with the expanding use of artificial intelligence tools in education. There are too many platforms that will collect the of personal data such as written texts, voice inputs, and usage patterns—to deliver customized learning experiences. While these features enhance personalization and learning experience, existing

frameworks for data security and user privacy still underdeveloped. As a result, students may unintentionally disclose sensitive personal information, raising serious concerns about potential data breaches, unauthorized access, or misuse of stored content [11]. This growing risk highlights the urgent need for strict regulation in data privacy. In addition, educational institutions and AI developers are under greater obligation to implement strict privacy policies and protection mechanisms.

Another important concern is the presence of bias in AI systems that process language. These systems sometimes treat different types of writing unfairly because of how their algorithms are designed. In today's global and multilingual education environment, it is especially important to assess students' work in a way that is both fair and accurate. However, recent research suggests that current AI detection systems are prone to misidentifying texts written by non-native English speakers as artificially generated. In contrast, texts composed by native speakers are less likely to be flagged [12]. This kind of systemic bias threats the equity of academic assessment processes. Moreover, it poses additional challenges for non-native English learners, who may already face linguistic barriers in academic writing and now risk being unfairly treated due to the limitations of AI-based evaluation tools.

The changing role of teachers amid the rise of AI tools is also a point of concern. While AI reduces teachers' workload in tasks like grading and feedback, some educators argue that the use of AI prevents students from engaging deeply with writing tasks. This limits the development of higher-order cognitive skills in class. In fact, a few teachers have chosen to leave their teaching positions, partly because they worry about AI's influence on students' learning processes [13].

6 Discussion and Recommendations

Artificial intelligence has already shown clear advantages in English speaking and writing education, but its successful integration requires careful planning. To fully leverage AI's strengths while minimizing risks, several strategies should be considered.

One key area is fostering students' critical AI literacy. While AI writing and speaking tools offer valuable support, students need to understand how to use them ethically and avoid over-reliance. Godwin-Jones emphasizes that although AI can effectively assist learners by providing practice and feedback, it often lacks deep cultural and pragmatic understanding [5]. Therefore, teachers should help students critically evaluate AI-generated content, encouraging them to treat these tools as additional one rather than replacing their own thinking and creativity.

Data privacy and fairness are fundamental to the proper use of AI which needs to be taken seriously. AI platforms collect large amounts of user data to personalize feedback, but concerns about data security and algorithmic bias remain. Hockly points out that despite AI's ability to offer personalized learning, there are challenges regarding the fairness of access and potential standardization of language outputs [7]. Schools and universities should create clear rules to protect students' personal information. They should make sure that students from different countries have equal access to AI tools. It can help avoid unfair differences that caused by unequal access to technology.

Teacher training is an important part in the AI supporting learning process. Educators need to know how to use AI tools properly in the classroom which means they should learn not just how the technology works, but also how to combine AI support with their own teaching. Finding the right balance between technology and human guidance is key. Mathew highlights that teachers should be prepared to manage both the affordances and limitations of AI, ensuring students benefit from immediate feedback while still receiving personalized, human support in more complex areas like writing structure or oral argumentation [14]. What is more, close teacher-student interaction must be maintained. While AI can process routine

correction students' daily work, factors such as emotional support, contextualization according to culture, promoting learner autonomy still depend on teachers' instruction. Teachers must place AI in a supportive role with themselves being central to the process of learning.

By concentrating on these strategies, society, institutions and educators can make sure that AI technology enriches English language learning with less negative consequences, leading to a better and balanced learning environment.

7 Conclusion

The integration of artificial intelligence into English language learning, particularly in speaking and writing, has introduced new opportunities for educational development. As shown in this essay, AI tools help learners improve their pronunciation with greater accuracy and enhance their writing fluency. This is achieved through immediate feedback, personalized suggestions, and more efficient learning processes.

However, the use of artificial intelligence raises many issues. The overuse of artificial intelligence by students, gaps in the development of critical thinking and creativity, data protection issues, and the erosion of the teacher's role are just some of the issues that need to be carefully examined.

In the future, with the development of AI technology, there is immense potential in immersive speech training, individual writing assistance, and intercultural language acquisition. Ensuring fair access to technology, protecting data privacy, and addressing ethical concerns will be essential in this evolving educational environment. While AI can support learning, teachers should remain at the center of the classroom. Meaningful collaboration among educators, developers, and institutions is necessary to ensure that AI enhances skill development without becoming a barrier to genuine educational progress.

References

1. Z. Li, C.J. Bonk, Self-directed language learning with Duolingo in an out-of-class context. Comput. Assist. Lang. Learn. 1–23 (2023)
2. A.-M.M. Gasaymeh, M.A. Beirat, A.A. Abu Qbeita, University Students' Insights of Generative Artificial Intelligence (AI) Writing Tools. Educ. Sci. **14**(10), 1062 (2024)
3. R. Raja, P.C. Nagasubramani, Impact of modern technology in education. J. Appl. Adv. Res. **3**(S1), 33–35 (2018)
4. N.K. Thi, M. Nikolov, K. Simon, Higher-proficiency students' engagement with and uptake of teacher and Grammarly feedback in an EFL writing course. Innov. Lang. Learn. Teach. **17**(3), 690–705 (2023)
5. R. Godwin-Jones, Generative AI, pragmatics, and authenticity in second language learning. arXiv preprint arXiv:2410.14395 (2024)
6. J. Smith, Advantages and disadvantages of AI in the EFL classroom, in Proc. Asian Conf. Educ. (ACE 2023), 73896 (2023)
7. N. Hockly, AI and English language teaching: Affordances and challenges. Br. J. Educ. Technol. **53**(6), 1502–1513 (2022)
8. N.S. Baron, Who Wrote This?: How AI and the Lure of Efficiency Threaten Human Writing (Stanford University Press, 2023)
9. D. Tafazoli, Critical appraisal of artificial intelligence-mediated communication. arXiv:2305.11897 (2023)

10. L. Johnson, Benefits and challenges of artificial intelligence in education. Knowl. Int. J. **4**(2), 78–85 (2023)
11. L. Grossman, Students are using ChatGPT to cheat. Should we be worried? Wall Street (2025)
12. P. Liang, W. Lee, S. Tan, M. Li, Detecting AI-generated text in non-native English writing: Biases and challenges. arXiv preprint arXiv:2304.02819 (2023)
13. L. Burke, Why a longtime professor quit teaching because of AI. Time (2024)
14. B.P. Mathew, Affordances and challenges of integrating artificial intelligence into English language education: A critical analysis. Engl. Stud. Beyond Borders **10**(1), 34–49 (2024)