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Revolutionising EFL pedagogy: Innovative strategies for integrating GAI (ChatGPT) into language teaching

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Abstract

The recent emergence of cutting-edge Generative Artificial Intelligence (GAI) technology has gained significant attention across diverse domains, and education has not been shielded from its influence. However, the integration of GAI in education remains nascent, with scant attention paid to offering strategic guidance for its specific application in English language teaching. Employing ChatGPT as an example, this article aims to provide English teachers with innovative strategies for incorporating GAI into their daily teaching practices, encompassing class preparation, in-class and after-class instruction and its utilisation as an academic research assistance tool. Furthermore, it highlights the potential challenges and risks associated with adopting GAI in language education, urging teachers to exert timely intervention and guidance when incorporating this technology. Ultimately, the article strives to revolutionise current English teaching pedagogy and shape the future of educational practices.

Keywords GAI, language teaching, ChatGPT, EFL

1. Introduction

With the iterative advancements and breakthroughs in Artificial Intelligence (AI) technology, Generative Artificial intelligence (GAI) has gradually entered the public eye, attracting widespread attention. GAI can be understood as utilising AI technology to generate explicit, rich content in text, images, audio, and other multimedia formats (Cao et al., 2023). This multimodal, novel human-computer interaction paradigm has the potential to empower intelligent higher education comprehensively and offers possibilities for breaking traditional research and teaching methodologies (Cai et al., 2023). ChatGPT, developed by Open AI, has received significant attention in the GAI industry, marking the advent of the new AI era (Cao et al., 2023; Pack & Maloney, 2023). Employing large language models and natural language process technology, ChatGPT can generate coherent, relevant, and multiple responses based on user queries (Wu et al., 2023; Wan & Moorhouse, 2024). Presently, major technology companies are devoted to developing large models. Google's Bert, Microsoft's Copilot, Baidu's "Ernie", Alibaba's "Qianwen", and the Chinese Academy of Sciences' "ZiDongTaiChu" are among the significant language model software exhibiting notable potential in the field of language education. Like ChatGPT, they also possess the capability for multimodal generation,

effectively processing images and document information, thereby providing English as a Foreign Language (EFL) teachers from different countries with additional teaching assistance tools. As EFL teachers, utilising such software can significantly alleviate workloads on multiple levels (Guo & Wang, 2023), including assistance in pre-class preparation, in-class activity design, and post-class feedback. More importantly, AI digital literacy is a focal point in the current educational environment (Chiu et al., 2023). Guiding English teachers to utilise GAI tools as pedagogical aids fosters more effective classroom interactions and enhances their digital literacy. Hence, this article comprehensively summarises and details teachers' strategies and specific operations utilising such tools for EFL instructional support.

2. The Current State of GAI-Assisted Teaching

Scholars (Guo & Wang, 2023; Wan & Moorhouse, 2024) have summarised that in the realms of listening and speaking, ChatGPT and its derivative, Call Annie, can provide listening materials and oral practice, encompassing listening comprehension, oral expression, and pronunciation exercises. In reading and writing, these tools can offer resources for reading materials and exemplars for writing exercises, along with timely

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assessments and feedback that encompass problem-solving strategies, grammar, and content correction. Additionally, they can assist students in understanding challenging content through translation (Nazir & Wang, 2023). GAI further satisfies students' needs across various learning domains by providing practical learning resources and swift information retrieval, enhancing learning outcomes. However, the powerful text-generating capabilities also give rise to issues of academic plagiarism. Chomsky (2023) argues that the outputs from such software can constitute a form of plagiarism that is difficult to detect and could pose numerous risks to the academic community. Consequently, some schools abroad have banned the use of GAI by students during the writing process (Jimenez, 2023), and many teachers have felt the professional threats posed by the array of GAI software (Sun & Hoelscher, 2023; Wang et al., 2023).

When confronted with the opportunities and challenges arising from the advent of AI in the educational domain, English teachers find that mere proficiency in language is insufficient. It becomes imperative to grasp AI's underlying working principles and algorithms, employing them critically to achieve a harmonious coexistence between teachers and AI (Hu & Qi, 2023). The following section expounds upon how EFL teachers can better utilise GAI (ChatGPT Web version as the example) to improve teaching strategies before, during, and after class and input prompts more intelligently and efficiently.

3. Instruction of GAI-assisted Language Teaching

3.1. Class Preparation

3.1.1. Curriculum Design

When preparing a lesson through GAI software, teachers can use appropriate prompts to ask questions and obtain suggestions and guidance regarding curriculum design. Key terms should include the main content and objectives of the curriculum, primary skills to be enhanced, student background, class duration, etc. (see Figure 1). If dissatisfied with the results or seeking further elaboration on a specific aspect addressed earlier, teachers can continue questioning. For instance, they may inquire, "Please elaborate on the second point mentioned earlier, providing additional examples and detailing time allocation."
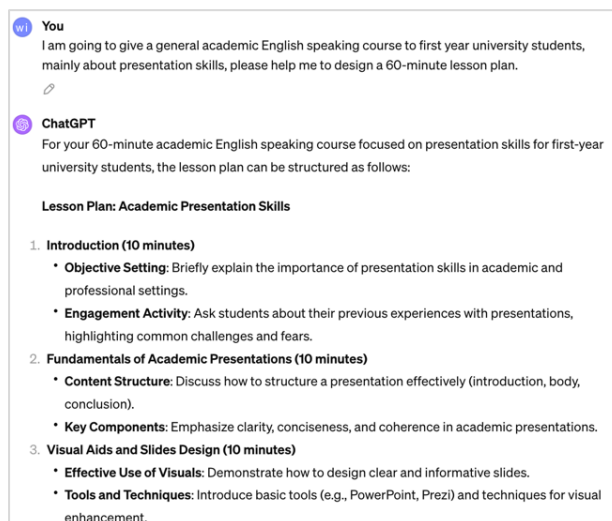

Figure 1. Part of ChatGPT generated lesson plan

3.1.2. Student Questions Simulation

ChatGPT can role-play as a student with assigned background information during lesson preparation, enabling it to pose questions from the student's perspective. For instance, by using a prompt such as: "You are a third-year English major student with a basic proficiency level, having scored 6.0 on the IELTS exam. I am your linguistics teacher, and today's lesson focuses on the phonetics section. I have just explained English pronunciation positions. Now, based on the lecture content, please ask some questions." As illustrated in Figure 2, ChatGPT can swiftly generate questions, allowing educators to brainstorm and prepare classroom materials more comprehensively before class. These questions can also be incorporated as part of in-class quizzes.
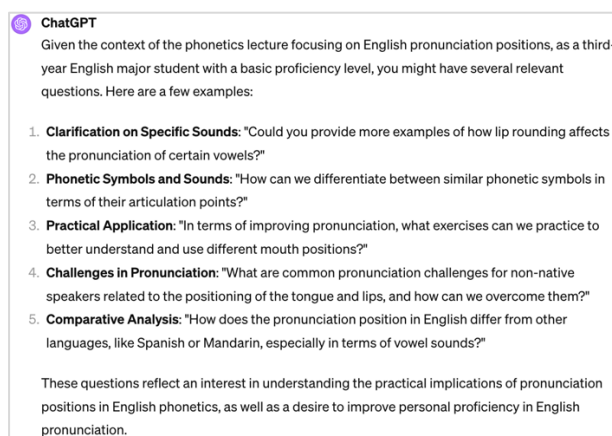

Figure 2. ChatGPT response page

3.1.3. Assisting in Students' Need Analysis

Teachers must be able to understand students' variety of learning needs and implement differentiated instruction tailored to individual capabilities (Pozas et al., 2020). Utilising ChatGPT to gather background information from students and conduct fundamental questionnaire analysis can swiftly aid educators in determining the difficulty level of instructional content and offering suggestions. Teachers can follow the steps depicted in Figure 3 by first using a

prompt such as 'I am an academic English teacher and would like to evaluate my students' familiarity with academic English and their current English proficiency level. Could you help me design a simple questionnaire?'. As shown in Figure 4, the responses present a questionnaire developed by ChatGPT, comprising multiple-choice and open-ended questions about students' background information, English proficiency, and academic English proficiency. Subsequently, a preliminary analysis of the results, such as English proficiency levels, can be conducted, and feedback can be provided to ChatGPT for classroom design guidance (see Figure 5).
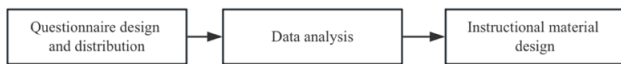
Figure 3. Flowchart of need analysis

Figure 4. The questionnaire developed by ChatGPT

Figure 5. The class design developed by ChatGPT

3.1.4. Other Before-class Preparation

Additionally, during lesson preparation, teachers can utilise the software to generate corresponding course outlines, establish specific learning objectives and teaching principles, develop post-class learning plans, design classroom interactive activities, structure in-class Q&A sessions, group discussions, and activities, create lecture notes, design whiteboard layouts, and establish grading criteria. For instance, creating a grading rubric for university academic English oral presentations (see Figure 6) (Skrabut, 2023).

Figure 6. Parts of the grading rubric generated by ChatGPT

3.2. During Instruction

3.2.1. ChatGPT as a Speaking Practice Partner

In terms of English-speaking practice, students can first interact with ChatGPT to understand relevant exam backgrounds, content, and techniques. For instance, in IELTS speaking or academic speaking classes, using a prompt such as "I am practising Part 1 of the IELTS speaking test. Could you provide me with some tips and techniques?" can elicit corresponding feedback, swiftly aiding students in understanding the exam framework. The prompt should include the exam name, specific exam section, and specific requirements (see Figure 7). If learners want to realise voice-based communication with ChatGPT, a Voice Control plugin can be added to the website. Alternatively, a ChatGPT-based chatbot, 'Call Annie' (Figure 8), can also be adopted in speaking activities. The human-like appearance of the chatbot and its coherent, multi-turn question-and-answer format can mitigate students' feelings of intimidation, making them more willing to engage in English communication (Jeon et al., 2023; Wan & Moorhouse, 2024).
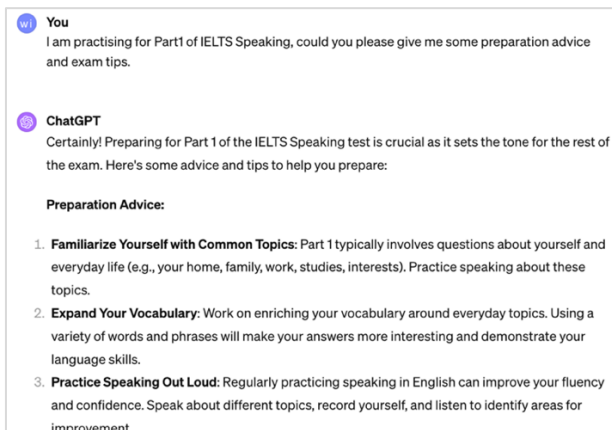
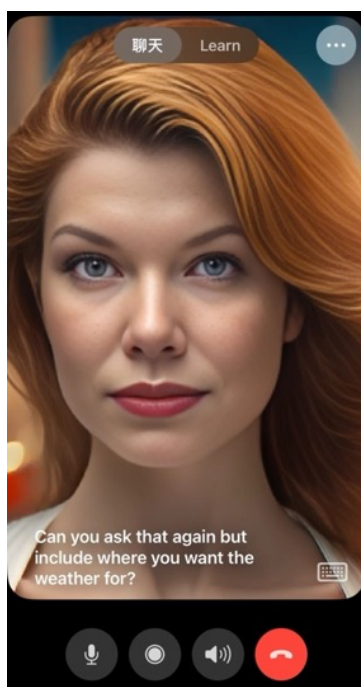**Figure 7.** Advice on IELTS speaking Part 1

Figure 8. Call Annie

As for speaking performance feedback, ChatGPT can provide relatively objective evaluations for students based on the specific scoring criteria, helping students better understand their shortcomings in speaking. Furthermore, the suggestions and guidance offered by ChatGPT can assist students in gradually improving their answers to meet high-scoring standards, thereby enhancing their speaking proficiency and self-directed learning ability.

3.2.2. Class Assistance Tool

Teachers need teaching assistants in large-scale classrooms to facilitate teaching and achieve more comprehensive supervision and feedback. ChatGPT can serve as a platform for real-time human-computer interaction, answering students' questions at any time, catering to each student, and increasing the interactivity and fun of the classroom. Taking academic English writing classes as an example, teachers can use the following suggestions to enhance classroom interaction:

1. Creating academic writing topics: ChatGPT can generate relevant academic topics and write an introduction, allowing students to continue writing based on it.

2. Providing academic writing samples: After completing regular class content, teachers can use ChatGPT to generate corresponding writing samples for students as references. Subsequently, students can check and propose areas for improvement while exercising their critical thinking skills.

3. Brainstorming vocabulary: Academic words are often complex and challenging to understand. Moreover, paraphrasing and brainstorming synonyms are essential when referencing literature, which requires a greater comprehension of academic words. ChatGPT can help students accumulate vocabulary and achieve efficient paraphrasing.

3.2.3. ChatGPT as a Participant

When students are unable to answer questions posed by their teacher, the instructor can demonstrate how to seek answers using ChatGPT. It is essential for teachers to guide students in critically assessing the accuracy and credibility of the information provided, as the responses from ChatGPT may not always be precise. Therefore, teachers can appropriately evaluate, analyse, or integrate AI-generated content with students' existing knowledge in the classroom to enhance understanding. This approach helps students recognise the limitations of artificial intelligence, reducing fear and concern about it. Teachers should also recognise the importance of empathy in teacher-student interactions, as ChatGPT cannot provide the same level of human care and emotional connection. Integrating AI-assisted guidance with teacher-student interaction gives students a broader perspective in exploring knowledge and emotional value and nurtures critical thinking skills.

On the other hand, Zou et al. (2023) discovered that students achieve better learning outcomes when interacting with peers through social networks while studying in an AI-powered environment. To further enhance students' learning effectiveness and strengthen teacher-student interaction, teachers can utilise social media platforms such as WeChat, Facebook, and WhatsApp to establish communication communities or groups. This allows more entry points for students to share tips and experiences about using ChatGPT, thereby promoting effective and efficient AI-assisted language learning.

3.3. After Class

3.3.1. Assisting with Writing Corrections

ChatGPT has significant advantages in helping provide English writing feedback. Teachers can formulate precise writing tasks for students and clarify writing topics, word limits, format requirements, etc. For example, students are required to write an argumentative essay about pollution, with literature citations in APA 7th format; or write a letter to the principal expressing dissatisfaction with cafeteria services; or write an English short story about university life. After students complete the first draft according to the task requirements, teachers can guide students in entering the written text into ChatGPT to obtain modification suggestions. Students can polish and revise articles by interacting with ChatGPT. For example, a prompt such as "You are a college English teacher. Please

help me revise the English paper, mainly to find grammatical errors and inappropriate use of English words, and give revision suggestions." can be used to revise the English writing (See Figure 9).

Figure 9. Written feedback generated by ChatGPT

Furthermore, teachers can utilise ChatGPT to generate an initial sample essay for specific writing tasks. For instance, teachers can request ChatGPT to "write a research paper discussing the impact of artificial intelligence on the language education industry, including its potential benefits and drawbacks, as well as current usage." Referring to various information and suggestions provided by ChatGPT during the writing process can significantly reduce teachers' workload and further enhance work efficiency.

3.3.2. Designing Exam Questions with ChatGPT

It is a cumbersome and tedious task for teachers to design exam questions before the end of one semester. Utilising ChatGPT for question design on specific content can be an effective approach. For instance, by employing a prompt like "You are now a professor of English major in China. This semester, you taught linguistics, covering phonology, semantics, corpora, and word formation. Please design ten multiple-choice questions in English based on these main topics and provide the answers." (see Figure 10).

Figure 10. Multiple-choice questions designed by ChatGPT

In addition to the above, various types of questions can also be designed based on generated articles or corresponding texts. For example, prompts such as "Please create ten multiple-choice questions with five options each based on the article above, and provide the answers." or "Please draft five True or False questions from the generated article, including the answers and their respective locations in the article." This allows teachers to efficiently create a diverse range of questions tailored to their specific teaching needs.
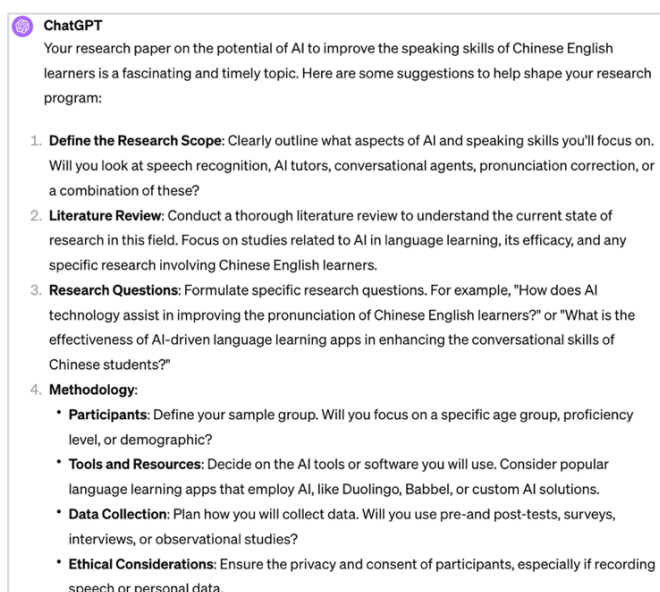
3.4. Academic Research Assistance Tool

ChatGPT can be an invaluable tool for research assistance within higher education settings, providing extensive support to faculty and students. Initially, ChatGPT can assist students in identifying potential research topics, discern research gaps, and supply foundational knowledge in pertinent fields. Furthermore, through engagement with ChatGPT, students can acquire recommendations and direction for generating comprehensive keyword lists, facilitating literature searches and comprehension of analogous research domains. Additionally, ChatGPT aids in formulating research questions, crafting research proposals and offers counsel on question structuring and pertinent literature (refer to Figure 11).

Moreover, ChatGPT can advise on suitable citation formats and strategies for literature searches in creating bibliographies and research outlines, thereby supporting students in productive academic writing. Students may also depend on ChatGPT to identify reputable information sources and guidance on databases, academic search engines, and other resources. In instances where students must synthesise and organise collected information, ChatGPT can aid in simplifying this data, simplifying its integration into their research projects. In terms of EFL students, ChatGPT can propose edits and writing suggestions, encompassing aspects such as grammar,

expression, and logical coherence, thus creating more comprehensible and error-free academic content.

In conclusion, ChatGPT offers comprehensive research assistance, significantly bolstering the efficacy of teachers, students, and researchers. Nevertheless, it is imperative to acknowledge that while ChatGPT serves as a valuable research adjunct, meticulous verification of the provided information's accuracy is essential. It is vital for users to corroborate ChatGPT-sourced data with other resources. Instances have been reported where literature references suggested by ChatGPT were non-existent or inaccurate (Cai et al., 2023). Consequently, students should diligently review information acquired from ChatGPT and integrate it with other trustworthy sources, ensuring the validity and reliability of their research outputs.

Figure 11. Suggestions on research proposal generated by ChatGPT

4. Conclusion

As generative artificial intelligence (GAI) evolves, it is imperative for EFL teachers to assess and engage with GAI from a diverse array of perspectives perspective. Using the deployment of ChatGPT as an exemplar, this paper offers specific guidelines for educators. GAI's robust natural language processing capabilities can provide EFL teachers with customised materials and assistance, facilitating teaching initiatives and reducing workload. Incorporating GAI in classrooms stimulates students' enthusiasm for learning and provides them with a multi-dimensional perspective on problem-solving. However, current iterations of GAI present several challenges, such as the generation of false information and users' over-reliance on these systems (Cai et al., 2023; Kasneci et al., 2023). Educators should actively participate and intervene in the effective implementation of GAI, ensuring that the use of technology aligns with students' learning objectives, thereby achieving a more harmonious human-computer interaction. The teacher's role is pivotal in harmonising the coexistence of teaching, learning, and GAI. With the help of GAI technology, teachers could deeply integrate multimodal GAI technologies into the classroom, enriching teaching and learning experiences. Moreover, additional attention and emotional care should be attached to students, fostering the advancement of an ecological AI-assisted language learning environment.

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