Exploring How English Teachers Can Integrate Generative AI into English Language Teaching

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Abstract:

Because of the rapid development of generative artificial intelligence (AI), the possibility of introducing GAI into educational settings is gaining more and more attention. This is especially true with the release of ChatGPT in 2023. This study focusses on the application of artificial intelligence (AI) in English language instruction from four different points of view: the creation of materials, the preparation of lessons, the checking of grammar, and the role of a learning partner. In this section, we will expand upon the instructors' perspectives on the uses and effectiveness of employing GAI in education, as derived from current research that are linked to this topic. The paper will also emphasize the value of AI literacy training for teachers and the necessity of a balanced approach between human teaching and the use of GAI. This is done with the intention of assisting English teachers in the process of changing traditional education for the development of GAI.

Keywords: Generative Artificial Intelligence; English Language Teaching;

1. Introduction

The integration of artificial intelligence (AI) in education has been of growing interest and importance in recent years. This review paper explores how English teachers can effectively incorporate generative AI into their teaching practices, focusing on the evolving role of AI in language education and its specific applications in English language teaching.
2.GAI's Growing Role in Education

2.1 GAI's Development

With the rapid development in the investigation of AI these years, the combination of Artificial Intelligence (AI) in education, especially in the field of language acquisition, has gained highlighted discussion among scholars and educators. However, the evolution of AI is not a sudden outcome and can be dated back to the 1960s with Joseph Weizenbaum's ELIZA, one of the pioneer endeavors to develop a computer program that could engage in human conversation. ELIZA is a chatbot designed to replicate a questioning interaction approach that could be utilized by psychoan-

alysts [1]. This initial experiment with language provided the platforms for the advancement of more complex AI systems in language education.

In recent years, as mentioned, AI capabilities have experienced dramatic evolution, especially with the advent of Generative AI (GAI). ChatGPT could considered as one of the most influential ones. It is a sophisticated AI-driven chatbot, developed by the Microsoft-supported organization OpenAI. The technology enhances the ability of speech recognition and natural language processing [2]. The public release of ChatGPT in November 2022 marked a significant milestone in Generative AI, also sparking heated discussions about the impact of such technologies on language education. Unlike the predecessors, those tools leverage deep learning models to create human-like content through various mediums, including text, audio, images, and videos. Compared with previous AI systems like Siri and Alexa which can only provide automatic, preset tasks, generative AI nowadays can handle complex prompts, maintain interactions, and produce unexpected outputs [2, 3].

2.2 AI's Advantage in Language Teaching

Based on its interactive features and ability to process language, researchers have explored both commercially produced and lab-developed chatbots, unveiling further educational opportunities [4]. Educators are increasingly recognizing the need to understand its application in real classroom teaching. Jeon and Lee argue that AI is a concept that educators should already be aware of, with many interested in understanding how it will affect their jobs in the future [5]. The relationship between human teachers and AI tools like ChatGPT is being reimagined as complementary rather than competitive. This shift in perspective encourages educators to explore how AI can enhance their teaching practices and improve student learning outcomes. Meanwhile, the rapid improvement of AI in the field of education also triggers other issues from the perspectives of ethics, privacy, and the potential influence on students' critical thinking ability. As AI becomes more sophisticated, there's a growing need to develop frameworks that ensure its responsible and effective use in education [3].

While AI alone has its restrictions and needs human teachers' supervision. And human teachers need to utilize this tool to further improve their teaching. Possessing either of them cannot maximize the power of AI in education. Therefore, this paper aims to collect the current study about how can English teachers effectively integrate Generative AI into their teaching practices, taking both the opportunities and the challenges into consideration, and assisting teachers in finding a new and more effective path

of teaching.

2.2.1 Large Language Models

The reason why generative AI is that powerful in the case of language-related perspectives is that behind GAI are Large Language Models (LLMs) – a kind of neural network, that can interpret natural human input by drawing from their humanlike memory, searching for the topic and related topics that best apply [6]. It is based on Natural Language Processing (NLP), which is a collection of computational for automatic analysis and representation of human languages [7]. LLMs, such as ChatGPT, significantly enhance the usages of Natural Language Processing, allowing AI systems to produce more variants of human-sounding languages than previous systems, overcoming the difficulties confronted by the previous chatbots [5]. The abundant language input enables it to act as a human and ensures the accuracy of the language output, which offers the possibility for GAI's place in language education.

2.3 The Need for AI Integration in English Language Teaching

As GAI's incomparable advantage, as a language generator and a talking companion, it is gaining growing attention from scholars' and teachers' thinking in the need for integration of AI in English Language teaching. It becomes an increasingly crucial thing for in-service teachers and pre-service teachers to familiarize themselves with this new technology [8].

Research indicates a growing interest among teachers in learning about generative AI applications for classroom use. Many educators find these tools more useful and engaging than traditional educational technologies. However, this interest is accompanied by concerns about ethical issues and the reliability of AI-generated responses, underscoring the need for good AI literacy among teachers [9].

In the context of English as a Foreign Language (EFL) classes, AI presents new opportunities for teachers to enhance their teaching efficiency and quality [10]. By integrating AI tools effectively, English teachers can potentially revolutionize their teaching methods, create more engaging learning experiences, and better cater to individual student needs.

3. Applications of GAI for English Teachers

3.1 Material Generator

Material development is a crucial aspect of English lan-

guage teaching. The "just right" text enables the readers to comprehend the content with little difficulty and challenges. In the case of children, 9 out of 10 words that can be recognized by children would be considered appropriate text and material [11]. However, given restrictions to the shortage of resources, like budget or book resources, it is not easy to find a tailor-made resource for learners [6]. Generative AI shows a great resolution to this tough issue, offering the potential to create tailored contextually relevant learning resources.

Bonner, Lege, and Frazier also noticed the importance of tailored material, however, they saw the lack of resources as a great hurdle [6]. To achieve the goal of offering appropriate materials and texts to students at different levels, educators need to invest a great amount of time in customizing the materials. However, with LLMs, the gaps can be bridged easier, by absorbing the language from the learner and also utilizing the great language bank. GAI can take students' language levels and the difficulty of the text into account at the same time [6]. It is particularly beneficial for learners who lack access to context-specific textbooks. The potential of creating materials gives more possibilities to improve teaching quality, especially in places that are low in teaching quality. Additionally, student teachers can use AI to gather data, identify concepts, and evaluate them against academic references, enhancing the accuracy and relevance of the materials [12].

Educators can offer a proficiency level sheet, telling exactly what students' levels in. In the research, Koraishi used the "Common European Framework of Reference for Languages (CEFR) proficiency level" [13]. After putting both the proficiency level and the original material, AI can generate materials with new vocabularies that can match better with students within a specific level. Furthermore, Koraishi found that GAI can also be used to generate appropriate prompts and comprehensive questions that can applied in language classrooms to check students' understanding [13].

Not only in offering students more appropriate materials, GAI's function as a content generator can also be used to trigger student enjoyment in reading. Especially in extensive reading, AI-generated content could enhance young EFL learners' enjoyment of learning English and increase their interest in reading English book [14]. As an implication, GAI can be a useful tool in extensive reading classes, both arousing students' enjoyment while turning the long reading into a moderate-level reading regardless of the difficulty of the text.

3.2 Lesson Planner

Lesson planning is an important component in teaching,

involving decisions about what to teach, in what order, and for how much time [15]. For educators, designing a class can take up most of the time in teaching, however, GAI can offer significant potential in streamlining the lesson planning process. In research, after educators grasped more usage of GAI, one obvious change in perspective toward GAI is its function in creating lesson plans [16]. In the process, GAI can refine teachers' existing plans, maintaining the teacher's control over the main content while benefiting from AI suggestions for improvement.

And one interviewee pointed out utilizing GAI's in-class activity in grammar class. Particularly useful is AI's ability to provide relevant contextual information and example sentences when planning lessons on unfamiliar topics or cultural contexts [16].

Maybe sometimes it's difficult for us [to] think about the relevant sentences or the contexts. And you can ask ChatGPT to give you [the context information] like our topic is Christmas, but we don't know that much about Christmas. We may ask ChatGPT what the festival is or what the special celebrations are during the Christmas period.

In this case, GAI's abundant database can help to bridge teachers' limitations in knowledge. And more relevant teaching activities and ideas could be brought out for teachers' reference.

Furthermore, with AI taking tasks like creating and polishing lesson plans, teachers can be released from the burden of doing repetitive and time-consuming daily work, but focus more on offering high-quality teaching and students themselves [12, 16].

To create an appropriate lesson plan on GAI, for instance, on GAI, the user only needs to put in the type of the class, the objective of the class, the size of the class, and other customized needs. Then GAI can generate a main structure of the class, with the activities and other teaching instructions [13]. Users can make more prompts to polish the lesson plan, by keep prompting and putting forward the specific need. GAI will utilize its "working" memory, which means the conversations mentioned previously, ensuring the lesson plan adheres to the original objectives.

3.3 Grammar Checker and Feedback Giver

Another great usage is generative AI offers English teachers are powerful tool for providing correction and feedback. AI-powered writing assistants are becoming more and more prevalent, such as Grammarly, QuillBot, and Wordtune. These writing assistants have significance in enhancing students' self-check abilities and supporting teachers' instructional tasks [17]. These AI tools based on LLM not only have an enormous corpus of language to

draw on but are also aware of what is considered correct language, making them effective tools for grammar correction [6]. Grammarly provides real-time suggestions for improving not only technical aspects of writing but also clarity, engagement, and delivery [18]. This capability transforms the language learning process into an interactive experience where students receive immediate feedback and learn from their mistakes.

Therefore, the integration of GAI in correcting students' homework and tasks can reduce teachers' workloads. Toncic reported in the research that AI grammar checkers can make checking students' language false into an automatic process [19]. And teachers' role in correcting students' homework can be shifted to a supervisor of students' current level and focus more on the structure and students' higher-order thinking.

Teachers who received interviews in Toncic's study expressed promising viewpoints toward incorporating AI grammar checkers into classroom teaching [19]. They appreciated these tools' ability to offer individualized and just-in-time feedback and claimed their possible use in large classes. In class with a lot of students, it is nearly impossible to give feedback on each student's work, and GAI could be a great assistant to solve this struggle. Moreover, research indicates the possibilities of AI writing tools exerting positive impacts on students' writing grades. It claims that 99% of students who used its grammar-checking algorithm self-reported receiving better grades in writing [19].

However, the limitations of GAI's performance are also worth being aware of. Park identified several shortcomings of AI grammar checkers in contextual scenarios, including challenges in recognizing tense errors, telling differences between active and passive voices, and identifying sentence-level errors [20]. These limitations underscore the importance of viewing AI tools as supplements to, rather than replacements for, teacher feedback. Also, since GAI is based on language that was frequently used, the output could be deviant from the traditional content taught by teachers [6]. And some AI systems can evaluate complex aspects of language use, such as coherence and argumentation in essays. While teacher review remains essential, these evaluations can provide valuable initial insights and streamline the grading process. As noted by Toncic, teachers envisioned students first using AI tools and then submitting written assignments for improved "efficiency" [19].

3.4 Learning Partner

Based on a large corpus resource, GAI can produce human-like languages, which makes it possible to become a learning partner, or teaching assistant in class. Fryer et al. suggested the human-like interaction of GAI, especially in chatbots, might support students to build sustained interests in learning [4]. This finding implies English teachers' application of GAI into classroom learning activities to keep students' continuous engagement.

The role of AI as a learning partner is further illuminated by Ji et al.'s systematic review in the field of helping students' skills in giving output, like speaking and writing [21]. The analysis revealed that over 90% of studies utilized GAI as a conversational partner, predominantly in speaking classes, and also some for writing alone or writing-speaking integrated tasks. Ji et al. found that GAI can be a tool to mitigate students' foreign language anxiety while encouraging students' willingness to communicate, which are crucial aspects of language learning [21]. Therefore, GAI can be used to create a rather low-stressed environment for students to practice and build confidence in using English.

However, using a GAI chatbot only for convenience could lead to unsatisfied results. In using GAI as a learning partner, educators should frame the interactions as unique learning experiences, instead of leaving students for self-learning with GAI [4]. Teachers should emphasize how AI partners can introduce new vocabulary, grammar, and expressions gradually while giving appropriate repetition.

Fryer et al. emphasized the importance of framing AI interactions as opportunities for unique learning experiences rather than mere convenience [4]. Rather than emphasizing the chatbot's convenience, teachers should frame the discussions as a chance for students to learn more and in other ways than they could from a human language learning partner. This could entail introducing new language, syntax, and idioms in a scaffolded manner, something that is unlikely to be done with a human partner. Additionally, it might entail giving predictable, intelligible repetition—something that a human partner is unlikely to want to give.

4. Teachers' Role in the GAI Era

In the rapidly evolving era for both education and GAI, English teachers should not resist the existence of GAI but think about how to embrace with potential of utilizing GAI to revolutionize education. The integration of AI into the classroom context is inevitable, and lots of scholars and educators indeed made researchers on its cooperation with human teaching.

Even though in the GAI era, teachers still play a crucial role in the classroom but act more as facilitators and supervisors to maximize the impact of AI on teaching. AI

offers diverse options while generating material, and lesson planning, however, using GAI will still confront risks concerning privacy and ethical issues. Teachers should take the responsibility to evaluate which functions the best, taking students' personalities, interests, and real-life experiences, which are things GAI in the current stage cannot observe [12]. Teachers need to guide students in using AI tools effectively and responsibly, critically evaluate AI-generated content, and leverage AI to enhance their teaching strategies. For instance, as demonstrated by Moorhouse et al., teachers can design assignments that encourage students to think independently before using AI to improve their work, thus fostering critical thinking skills [16].

To prepare for the coming educational change, both pre-service and in-service teachers must receive training about how to use AI in class scenarios. It is found that many beginning teachers have the feeling of not being prepared for the new technologies in their profession which leads to feelings of anxiety [22]. Teacher education programs also offer supportive help and evolve to keep pace with technological advancements.

Interventions concerning developing GAI literacy, like offering courses and assigning relative coursework, are deemed to be effective [16]. However, there is still room for further research on how to structure well-rounded courses such as guiding students to use GenAI tools effectively and responsibly for teachers in the new generation.

5. Conclusion

In this review, the researcher analyzes how can English teachers integrate Generative AI (GAI) into their teaching practices, focusing on material generation, lesson planning, grammar checking, and GAI as a learning partner. The appropriate applications of GAI can significantly enhance students' engagement and learning outcomes. However, completely dependent on GAI teaching could have some potential risks, and education will be more effective if a balance can be found between the usage of GAI and human teaching. To adapt to the technological generation, teachers and other experts related to the field of education should pay more attention to teachers' ongoing education.

References

[1] Weizenbaum, J. (1966). ELIZA—a computer program for the study of natural language communication between man and machine. Communications of the ACM, 9(1), 36-45..

[2] Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. Relc Journal, 54(2), 537-550.

[3] Lim, W. M., Gunasekara, A., Pallant, J. L., Pallant, J. I., & Pechenkina, E. (2023). Generative AI and the future of education: Ragnarök or reformation? A paradoxical perspective from, management educators. The international journal of management education, 21(2), 100790.

[4] Fryer, L. K., Nakao, K., & Thompson, A. (2019). Chatbot learning partners: Connecting learning experiences, interest and competence. Computers in human Behavior, 93, 279-289.

[5] Jeon, J., & Lee, S. (2023). Large language models in education: A focus on the complementary relationship between human teachers and ChatGPT. Education and Information Technologies, 28(12), 15873-15892.

[6] Bonner, E., Lege, R., & Frazier, E. (2023). Large Language Model-Based Artificial Intelligence in the Language Classroom: Practical Ideas for Teaching. Teaching English with Technology, 23(1), 23-41.

[7] Chowdhary, K., & Chowdhary, K. R. (2020). Natural language processing. Fundamentals of artificial intelligence, 603-649.

[8] Jeong, K. O. (2017). Preparing EFL student teachers with new technologies in the Korean context. Computer Assisted Language Learning, 30(6), 488-509.

[9] Chiu, T. K. (2023). The impact of Generative AI (GenAI) on practices, policies and research direction in education: A case of ChatGPT and Midjourney. Interactive Learning Environments, 1-17.

[10] An, X., Chai, C. S., Li, Y., Zhou, Y., Shen, X., Zheng, C., & Chen, M. (2023). Modeling English teachers' behavioral intention to use artificial intelligence in middle schools. Education and Information Technologies, 28(5), 5187-5208.

[11] Rog, L. J., & Burton, W. (2001). Matching texts and readers: Leveling early reading materials for assessment and instruction. The Reading Teacher, 55(4), 348-356

[12] van den Berg, G., & du Plessis, E. (2023). ChatGPT and generative AI: Possibilities for its contribution to lesson planning, critical thinking and openness in teacher education. Education Sciences, 13(10), 998.

[13] Koraishi, O. (2023). Teaching English in the age of AI: Embracing ChatGPT to optimize EFL materials and assessment. Language Education and Technology, 3(1).

[14] Lee, J. H., Shin, D., & Noh, W. (2023). Artificial intelligence-based content generator technology for young English-as-a-foreign-language learners' reading enjoyment. RELC Journal, 54(2), 508-516.

[15] Jensen, L. (2001). Planning lessons. Teaching English as a Second or Foreign Language. Boston, MA: Heinle&Heinly.

[16] Moorhouse, B. L., Wan, Y., Wu, C., Kohnke, L., Ho, T. Y., & Kwong, T. (2024). Developing language teachers' professional generative AI competence: An intervention study in an initial language teacher education course. System, 125, 103399.

[17] Marzuki, Widiati, U., Rusdin, D., Darwin, & Indrawati,

I. (2023). The impact of AI writing tools on the content and organization of students' writing: EFL teachers' perspective. Cogent Education, 10(2), 2236469.

[18] Fitria, T. N. (2021). Grammarly as AI-powered English writing assistant: Students' alternative for writing English. Metathesis: Journal of English Language, Literature, and Teaching, 5(1), 65-78.

[19] Toncic, J. (2020). Teachers, AI grammar checkers, and the newest literacies: Emending writing pedagogy and assessment. Digital Culture & Education, 12(1), 26.

[20] Park, J. (2019). An AI-based English Grammar Checker vs. Human Raters in Evaluating EFL Learners' Writing. Multimedia-Assisted Language Learning, 22(1).

[21] Ji, H., Han, I., & Ko, Y. (2023). A systematic review of conversational AI in language education: Focusing on the collaboration with human teachers. Journal of Research on Technology in Education, 55(1), 48-63.

[22] Gudmundsdottir, G. B., & Hatlevik, O. E. (2018). Newly qualified teachers' professional digital competence: implications for teacher education. European Journal of Teacher Education, 41(2), 214-231.