

Chances and Challenges of EFL Teaching Powered by ChatGPT on Developing the Students' Critical Thinking

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Abstract

The emerging Artificial Intelligence chatbot - ChatGPT has captured the attention and interest of individuals worldwide. Its potential for application in education, specifically in EFL teaching, is promising. However, studies on the role of ChatGPT in EFL teaching within China remain limited. Previous research primarily focuses on examining ChatGPT and its implementation in other educational fields. Therefore, this paper aims to explore the opportunities and potential challenges associated with integrating ChatGPT into EFL teaching, emphasizing the development of critical thinking skills among students. This qualitative study involved four college teachers from Southern China who have been utilizing ChatGPT in their teaching since its launch. Semi-structured interviews were conducted revealed that using ChatGPT supports teachers in enhancing both the quality and efficiency of their instruction while simultaneously providing personalized learning support for their students. However, there are concerns regarding students' overreliance on the chatbot leading to a lack of critical thinking were noted. Consequently, this study provides some strategies to encourage critical thinking among students. These strategies include fostering students' independence of thought, facilitating group discussions and debates, employing project-based teaching (PBL), and introducing writing exercises into teaching methods. This research is highly significant for the integration of ChatGPT into EFL teaching, as it serves as valuable reference material for educators seeking guidance on how to use this innovative tool effectively. Future studies can expand on these results by conducting quantitative analyses of EFL teaching and ChatGPT integration.

Keywords: ChatGPT, EFL Teaching, Chances, Challenges, Critical Thinking

Introduction

ChatGPT is a kind of generative artificial intelligence (GenAI) developed by OpenAI based on Large Language Models and natural language processing technology (Kirmani, 2022). Ever since its release, ChatGPT has attracted a lot of registered users because of its powerful functions. ChatGPT reached 1 million users quickly in only five days after its launch (Chartr, 2022) and 100 million users just in two months, making it the fastest growing app in history (Paris, 2023). ChatGPT's versatility and sophisticated language processing capabilities have positioned it as a highly valuable tool across a multitude of domains, with an extensive range of applications in various fields. Unsurprisingly, this has also garnered significant interest in China.

Undoubtedly, Chat GPT holds a substantial influence in the field of education. For example, Kasneci et al (2023) discussed the possible benefits and drawbacks of educational uses of ChatGPT from viewpoints of both students and teachers. ChatGPT's penetration into the education industry makes it possible for personalized learning with customized guidance according to each student's needs and abilities (Crompton & Burke, 2023). Besides, it can generate context-based prompts to accelerate collaboration and peer interaction, constructing a dynamic learning environment beneficial for engagement and deeper understanding (Sharma et al., 2023). Teachers can also use ChatGPT for lesson planning, student assessment, and professional development. However, ChatGPT also receives controversy in education, which is mainly reflected on fabricated AI-generated texts (Hern (2022)), abuse of it to complete assignments or even course papers, academic dishonesty and plagiarism issues (Kasneci, et al (2023) accompanied by it. Undoubtedly, this novel technology has had a profound impact on education. Instead of outright rejection, higher education should aim to enhance and integrate it in a more efficient manner.

Although there have been numerous studies exploring the influence of ChatGPT on education, empirical research specifically regarding its implementation in teaching remains relatively limited in academic settings. Furthermore, little attention has been paid to its potential application in EFL teaching within China. In response to this gap in research, this study adopted semi-structured interviews to investigate chances and challenges of Chat GPT in EFL teaching, focuses on the cultivation of students' critical thinking.

Literature Review**The rationale of ChatGPT empowering EFL teaching**

To understand the empowerment of AI chatbots such as ChatGPT in EFL teaching, it becomes imperative to clarify the inherent reasons for ChatGPT's support in assisting foreign language learning activities, mainly including the following justifications. Interaction theory, which emphasizes the collaboration between language learners and other speakers (Chapelle (2005)), supported ChatGPT's functionality as conversational AI. ChatGPT, based on mass authentic corpus can provide foreign language learners with resources and a real environment to communicate in a foreign language.

Furthermore, learners will not feel embarrassed when communicating with ChatGPT as it is not a real human being. This allows them to maintain their confidence and motivation while improving their communicative willingness and language output (Arif et al., 2019; Lim et al., 2021; Nair & Yunus, 2021). Additionally, ChatGPT trained with reinforcement learning from

human feedback (RLHF) can actively recognize errors and adapt answers accordingly. The human-like simulation provided by ChatGPT could positively impact learners' motivation and attitudes towards English learning, which was conducive to promoting progress in learning English (Saman & Asieh, 2022).

Chances of Chat GPT in Education

The emergence of ChatGPT has tremendously facilitated the education sector. According to Cotton et al (2023), the use of ChatGPT in higher education had the potential to provide a variety of benefits. One important use of ChatGPT in education is for optimizing students' learning experience. According to Qadir (2022); Roose (2023), ChatGPT could provide students with individualized learning experience, which was realized by providing students with customized feedback and realistic virtual simulations. Another use of ChatGPT in education is that ChatGPT's mighty text-generated ability can provide writing assistance for students. As ChatGPT is capable of generating efficient and accurate text concerning ideas, logic and language, we may shift our focus away from the act of writing itself towards the actual content and the ideas being communicated. With the ability to generate coherent and grammatically sound texts fast and easily, users can spend more time thinking and developing ideas rather than on the mechanics of writing (Teubner et al., 2023). ChatGPT are also believed to be useful research aids for generating ideas, integrating information, and summarising a large amount of textual information to help researchers analyse data and compose their writing Berg (2023), contributing to efficiency in research and publication. ChatGPT can also be used in learning assessment (Crompton & Burke, 2023). Mizumoto and Eguchi (2023) examined the reliability and accuracy of ChatGPT as an automated essay scoring tool, and the results is positive. ChatGPT can largely shorten the time needed for grading, ensure consistency in scoring, and to provide immediate scores and feedback. What's more, ChatGPT can connect like-minded students of diverse educational backgrounds and facilitate peer collaboration by being integrated into communication platforms, such as forums and messaging apps, to encourage knowledge sharing, problem-solving in groups, and interdisciplinary collaboration (Sharma et al., 2023). It supports group and distance learning and empowers learners with disabilities (Kasneji, et al., 2023).

Challenges of Chat GPT in education

Simultaneously, ChatGPT has faced various challenges regarding concerns related to academic integrity, ethics, overdependence and its constraints. According to Garca-Pealvo (2023), ChatGPT's ability to produce texts which are hard to be distinguished with human creation may cause academic dishonesty. Cotton et al (2023) also expressed concern in terms of academic honesty and plagiarism. Hence, the widespread use of GenAI can pose a serious threat to academic integrity in higher education. In addition, the content produced by GenAI like ChatGPT may be biased, inaccurate, or harmful if the dataset on which a model was trained contains such elements Harrer (2023) so it is essential to take into account the constraints of ChatGPT for it is only as good as the data it uses for training, and they may produce prejudices or even false information (Cotton et al., 2023). The model of applying ChatGPT to scientific text also demonstrates its limits. The model produces seemingly true citations with invented bibliographic information including paper title, authors, journals, and even DOI which do not actually exist (Kubacka, 2022). Kumar's (2023) analysis of AI-generated responses to academic writing prompts shows that the relevant text output is more of reconstruction of existing information and lacked personal perspectives or innovation.

Besides, for second language learners, overreliance on GenAI tools may compromise their genuine efforts to develop writing competence (Warschauer et al., 2023). Moreover, data privacy, security concerns, and the importance of human oversight are also big themes that have been launched in the ethics debate about ChatGPT (Chen et al., 2023).

Cultivating critical thinking under technical support

Critical thinking is a necessary thinking ability and quality for innovative talents in modern society. The origins of critical thinking can be traced back to the ancient Greek philosopher Socrates, who believed in questioning everything and using logical, rational thought to arrive at answers. His student, Plato, expanded on these ideas in his writings later. American philosopher Dewey (1910) claimed that critical thinking involved active, continuous, and rigorous thought processes based on the underlying beliefs or assumptions of knowledge, as well as their possible implications, which was regarded as the embryonic stage and beginning of critical thinking.

Critical thinking, as the necessary ability and quality of creative talents, has been identified as an important educational goal, and the teaching of critical thinking is considered as the basic way to achieve this goal (Precintha et al., 2019, Yunus et al., 2014). With the passage of time and the development of technology, computer technology, Internet technology, digital technology, intelligent technology and so on have played an important role in the cultivation of critical thinking research. With the support of technology, research on the cultivation of critical thinking begins to focus on the integration of technology and teaching mode, and emphasizes the importance of teaching design and implementation since 2013.

Technology-based learning methods have the following advantages in cultivating students' critical thinking. Firstly, they can optimize learning methods in traditional classrooms, for example they can use digital technology to carry out immersive learning by "learning by doing", effectively promote collaboration and common meaning construction, and contribute to the cultivation of students' critical thinking (Ya-Ting et. al., 2012). Secondly, they can break the limitation of time and space for offline communication, which is more conducive to students to actively carry out cooperative learning and promoting profound communication among them, which is supported by a study form Hadjerrout (2011) who utilized social networking sites (e.g., Wiki) to provide students with opportunities for self-reflection, sharing knowledge, and developing critical thinking. It is not difficult to find that the learning method of integrating technology provides a new method and a new path for the cultivation of students' critical thinking.

The application of technology promotes the implementation of advanced teaching mode more effectively, so that students' critical thinking can be better cultivated (Rajendran & Yunus, 2021; Said et al., 2013; Yunus & Salehi, 2012). For example, the digital learning platform created by technology is applied to carry out flipped classroom teaching, which can improve students' critical thinking. In a flipped classroom teaching approach, students are expected to prepare for class learning before attending by completing new tasks independently and sharing their work with peers via an online platform (Yunus et al., 2019; Zakaria et al., 2016). During the face-to-face class time, students engage in discussions for learning professional knowledge. While after class, they share and discuss their learning gains online to consolidate their learning (Kong et al., 2014).

The aforementioned approaches and technologies have led to learning methods and teaching models becoming important aspects of critical thinking research. The integration of technology into the teaching process has opened up new avenues for critical thinking cultivation. In the ChatGPT era, improving students' critical thinking skills has become increasingly important, as argued by scholars such as Bishop (2023), who contended that new language generation models challenge educators to shift their focus towards teaching more advanced writing abilities that reflect and enhance critical thinking rather than simply focusing on writing mechanics. Based on previous studies, it is reasonable to conclude that ChatGPT could be used as a tool to promote the development of critical thinking in students. However, there are still few empirical studies on how to improve students' critical thinking ability.

From the perspectives presented above, it is evident that while ChatGPT has brought great benefits, it also poses potential challenges in teaching. However, there are a limited number of empirical studies on the using of ChatGPT in EFL teaching within China. Given the pressing need to enhance critical thinking mentioned above, this research aims to utilize semi-structured interviews with college instructors to explore both the benefits and challenges of the using of ChatGPT. Additionally, this research prioritizes examining strategies to cultivate students' critical thinking abilities within an EFL instruction environment.

Methodology

Research Design

This qualitative research method was used to explore the chances, challenges and strategies the teachers adopted to develop the critical thinking of the students in the EFL teaching supported by ChatGPT in this paper. Different from quantitative research, qualitative research methods do not seek to be comprehensive, but have a deeper understanding of the topic. In qualitative research, investigators analyze and offer insights into a specific research issue based on the viewpoints of a selected group within a local context (Marshall and Rossman, 2006). The semi-structured interview was adopted to obtain the specific information about some Chinese teachers' teaching experience in EFL teaching with the help of ChatGPT. In this way, the research centered on the viewpoints of the participants' personal encounters (Creswell (2013), without any prior assumptions or bias concerning cultural or social norms, traditions or experiences in China.

Participants

In order to make the interviewees have certain representativeness, reflect the richness the research, this study adopted the purposive sampling method according to the purpose of the study. 4 college teachers were selected from the South of China for interview, two of whom were from private colleges and two from general public universities. The eligibility criterion of being selected was to have conducted the teaching with the help of Chat GPT since its birth. The participants were completely voluntary and didn't receive any reward.

Data Collection

The data in this paper was mainly interviews with the participants, and anything that was not explained clearly during the interview could be emailed as a complement to the previous interview. The interviews were conducted through online in Chinese and lasted for more than 30 minutes. Before the interview, all of the respondents was informed of the voluntary and

confidential principles and signed an informed consent. They also were informed to have the entire interview audio-recorded. The researchers transcribed the audio into written text based on the interview recording after the interview, and the participants were given chances to review and confirm the transcribed written text before they were translated into English for analysis. At the same time, the researchers anonymized the participants' names and assigned them with English letters A-D instead. A semi-structured interview format was used in this study, whereby the researchers designed a detailed interview questions based on the research questions and relevant literature before the interview and probed for valuable answers during the interview. The 7 questions in the interview focused on the chances of ChatGPT to EFL teaching, the challenges of ChatGPT to EFL teaching, as well as highlighting the strategies the teachers employed to promote students' critical thinking, in order to achieve a progressive and in-depth exploration.

Table 1

The questions in the interview

Hierarchy	Number	Interview questions	The purpose of the questions
Leading to the context	1	What digital devices or resources do you prefer to use during lesson preparation and teaching? Have you used chat GPT before?	Guide the interviewee into the research situation to ensure the reliability of the interview
	2	How often do you use chat GPT and in what specific part?	
Core questions	3	How do you think of the effect of the using Chat GPT? Has it facilitated teaching and learning? Have you faced any challenges or problems while using it?	Guide the interviewees to make a description around "the learning use of chat GPT" from the simple to the deep.
	4	How have students responded to the use of chat GPT?	
	5	What strategies do you think can promote students' critical thinking in EFL teaching powered by chatgpt?	
In-depth description	6	Do you encourage students to express different viewpoints and participate in discussions? If so, how do you promote interaction and discussion between students?	Guide interviewees to conduct in-depth descriptions of their specific use of chat GPT
	7	Do you encourage students to debate and discuss different ideas and perspectives during class discussions? If so, how do you facilitate these debates and discussions among students?	

Data Analysis

In this paper, thematic analysis was adopted to analyze the data obtained above, which was the most commonly used method to analyze interview data. According to Braun and Clarke

(2006), there were six stages in thematic analysis. The first stage was to familiarize ourselves with the data, to read and re-read the data to gain a sense of its content and relevance. In stage 2, initial codes were generated. Initial coding categories were created by identifying the noteworthy features or patterns in the data and relevant codes were labeled. The following step was to generate themes. At this stage, the existing codes were organized, summarized and grouped under potential themes. In the fourth stage, how well the themes fit the data were considered and some themes were refined or combined if necessary. This was followed by the fifth stage: defining and naming themes, which was to give clear labels to the themes that accurately conveyed their meaning and relevance to the data. The last stage was to create a narrative or analysis by using the themes that addressed the research questions of the study.

Results

From the analysis above, 3 themes were categorized and identified which were related with the research questions raised above: the chances of chat GPT in EFL teaching, the challenges that chat GPT bring to EFL teaching, the strategies to develop the critical thinking of the students in the EFL teaching supported by chat GPT. The themes related to the questions were chosen from the data to provide answers to the research questions. Table 2 below presents the demographic details of the participants.

Table 2

Demographic details of participants

Participants	Age	Qualification	Teaching experience
A	35	Master	10
B	36	Master	10
C	52	Master	20
D	35	Master	7

Theme 1: The Chances that ChatGPT Bring to EFL Teaching

All the participants approved that ChatGPT, as an artificial intelligence chatbot, brought chances and conveniences to EFL teaching. They were all amazed and shocked by the various and powerful functions of ChatGPT at the very beginning. All the four teachers held the view that their working efficiency was improved with the aid of ChatGPT. For example, participant A stated

There are a lot of auxiliary projects in ChatGPT. When you're using it, it can help you to find the knowledge you are looking for in the shortest time, especially some key technical points . . . ChatGPT can get the relevant basic knowledge I need more intuitively and quickly.

The idea was echoed by participant B, who said, *"it saves me a lot of preparation time. You just type in what you want, and it gives you the answer, saving me the screening process"*. While participant C, the most experienced teacher in the group mentioned, *"it is very efficient although I'm still in the exploratory use phase"*. Similarly, participant D who had used ChatGPT for the longest time expressed

If you just use ChatGPT to do it, it's probably more efficient. Because these routine stuffs, they are not very important, but you have to do it, such as some lesson plans, course evaluation forms.

In addition, the teachers also deemed that ChatGPT can improve the quality of their teaching in certain aspects. Participant B shared her experience

I basically view it as an encyclopedia which can provide me with the knowledge I am not sure, and the answers given by ChatGPT are quite comprehensive. . . ChatGPT can also bring some new energy to the class, and students find it interesting and innovative. If I present them the ideas or answers from ChatGPT, they might think it is fashionable, and they seem to be more willing to listen to me. Because of the comprehensive and rich material obtained from the ChatGPT, the students can learn the relevant background knowledge quickly. Therefore, it will be easier for them to understand the article.

Participant C added,

I usually use ChatGPT to generate the model essays, and the model essays are good in terms of language accuracy and idiomatic expression, which might be better than those that most English teachers might provide". Participant D claimed that he used ChatGPT to collect material for lesson preparation and to test the students, which also can help him to polish and refine his language and improve the quality of some of his ideas. He added that, "Under proper supervision, ChatGPT can provide real-time and personalized learning support for students based on their learning need and level.

Theme 2: The Problems that Chatgpt Bring to EFL Teaching

As for the challenges they encountered in EFL teaching powered by ChatGPT, Participant A said, *"the explanation provided by ChatGPT is not clear enough and also not correct sometimes"*. Another participant (participant B) held a similar view, *"sometimes, answers from ChatGPT were too comprehensive, but not specific, and somewhat official, and I could not get the answers I wanted"*. However, she also added that this might be owing to her lack of skills in questioning when using ChatGPT.

Participant C raised an important problem which might happen in the EFL teaching powered by ChatGPT, *"I am worried that the students would be too lazy to think for themselves, and he might just copy the ready answers provided by ChatGPT, since there is no clear and specific supervision for students at present in China"*. This viewpoint was reiterated by participant D who shared that *"The most important thing is how you supervise the students. If the teaching process is specifically designed and the teacher can supervise the students well during the process, that's fine. However, if out of such specifically designed teaching environment, the students do the homework themselves, which may lead to over-dependence. It may also require the school to set rules"*.

Theme 3: The Strategies to Develop the Critical Thinking of the Students in the EFL Teaching Supported by ChatGPT

The researchers inquired about strategies to cultivate critical thinking skills among EFL students using ChatGPT as a teaching aid. Four participants shared their viewpoints. For

example, participant A claimed the students had to have a good command of the basic knowledge, and then their critical thinking could be developed with the use of ChatGPT. He highlighted, *“they can form their own idea based on their solid basic knowledge, then their idea might be promoted by the ideas from ChatGPT. Or, they might just copy the ideas from ChatGPT, because they know so little about this course”*. Participant B stated:

One of the strategies that I’ve used mostly at present in our group discussion is that we usually have a task to talk about an idea of a certain topic at the end of the text in each unit. Maybe in a traditional class, the students always discuss with each other and then the teacher makes a comment. But now with ChatGPT, well, what I would do is to have students do some group discussions first. And then I present them the ideas ChatGPT provides to us, and then students can reflect on some of the answers from ChatGPT. Finally, the students discuss with the students their ideas inspired by the ideas from ChatGPT and form their own idea eventually ... Another strategy is to apply project-based teaching in class, and ChatGPT can be used in the whole process. For example, in the early stage to collect data, the students can use ChatGPT to promote their idea and then form a better point of view through group discussion.

Participant C mentioned,

I usually encourage students to ask challenging questions, especially the questions about the texts in our textbook, and then present them the challenging questions generated by ChatGPT. After that, ask them to discuss and share with other students and then find the answers after their independent thinking ... Another strategy I like to use is to use writing as a way to develop students’ critical thinking.

Participant D noted,

In my class, a question or an idea is designed by myself or raised by the students in their report or something like that. Then, I will invite other students to criticize it. The student being criticized can argue back, and then raise a new point based on their critique debate and discussions. Other students can continue to criticize his ideas; the one being criticized can argue again. After three rounds of criticism and discussion, the student who raises the idea and question will put forward his/her final ideas based on criticism and discussion before. During the process, ChatGPT will be used to collect materials, improve ideas and give relevant suggestions.

In addition, when it came to the specific teaching practices in their class which were interviewed in questions 6 and 7, each of the participated teachers had his or her own favorite method to promote the students’ critical thinking. Participant B emphasized:

I always encourage them to put forward their own opinions about a certain topic in our textbook in their groups as I mentioned above, which of course involves expressing different ideas and participation in discussion. Then, before class, they have to hand in their group homework to me. I will put the two groups of students with widely different opinions together for discussion during class time, and they can refer freely to the ideas from ChatGPT at this time. After the class, each student has to hand in their individual ideas based on their discussion before.

Similarly, participant D also liked to use the method of discussion. He reflected:

I hope students can express their different opinions bravely, and I often let students criticize each other and debate with each other during my class. Usually, after this criticism from their classmates, the students will find there was a big disagreement between him and others, which is actually better. The greater the disagreement, the better the following discussion and debate will be. The first critique is important, and you have to magnify the contradiction. Usually there will be a couple of rounds of debate and discussion, and then I give advice in the last round. The students will put forward new ideas, which is quite different from the original.

Participant C was fond of applying writing to improve the students' critical thinking. He described his approach of doing it

I often ask students to ask challenging questions and develop their own opinions. In my writing class, students are provided with three or four articles written by different authors or from different viewpoints on the same topic each time which might be generated by Chat GPT. The students then are encouraged to conduct in-depth analysis from the aspects of the rigor of the argument, the reliability of the argument, the ambiguity of words, the rationality of the conclusion, and so on. During the process, they can refer to ChatGPT and discuss in groups. After class, students are required to write analytical articles to express their own unique opinions on the basis of the evaluation of other articles, combined with their own knowledge.

Discussion

This study aims to explore the chances, the challenges that ChatGPT brings to EFL teaching and the strategies to develop the critical thinking of the students. According to the interviews above, the corresponding answers can be obtained.

The Chances of ChatGPT to EFL Teaching

The interviews above show that there are several chances of ChatGPT to EFL teaching. Firstly, it can help the teachers improve their working efficiency, lighten the burden of work with its fast and powerful information collection function. As supported by Ji et al (2023), future language education should integrate conversational artificial intelligence, and promote the use of intelligent resources through the design of curriculum content and reduce the burden of teachers' work. Secondly, it can help the teachers promote the quality of the teaching by providing comprehensive information and authentic language material with high quality, increase students' interest in class. Finally, it can provide personalized learning support for students based on their learning need and level, which is supported by a study by Roose (2023), who indicated that as a teaching aid, ChatGPT can unleash student creativity and provide personalized tutoring for students. According to Ji et al (2023), the role of conversational AI in foreign language learning, included evaluator, resource evaluator, needs analyst, and so on, among which, oral conversation partner and feedback provider appear more often than others. Some of the roles by Ji et al. were not mentioned in the interviews, which might result from 2 reasons. Firstly, the teachers in China are still in the initial stage of applying ChatGPT in EFL teaching. Secondly, the number of participants is insufficient and none of the interviewed educators have fully utilized all the features that ChatGPT offers during their teaching practices.

The Challenges in EFL Teaching Powered by ChatGPT

In terms of the problems, the biggest concern of the teachers is that students rely too much on ChatGPT and do not think for themselves. Furthermore, there is no official effective supervision and regulation on the using of ChatGPT nowadays. If the students rely entirely on ChatGPT to do their homework, which not only has a negative impact on students' academic integrity but also hinders them to develop critical thinking. The popularization of artificial intelligence technology has greatly increased the probability of academic misconduct. This is aligned with a previous study, which claimed that people are not ready for how AI will change academic world (Marche, 2022).

In addition, the teachers interviewed also mentioned that the answers provided by ChatGPT were not clear and also not correct sometimes. The finding is consistent with what Zhou et al (2023) claimed that ChatGPT still generated factually incorrect or biased responses. What's more, a participant stated that her lack of skills in questioning when using ChatGPT resulted in that she couldn't get the answers she needed sometimes, which reflected the shortcomings of the teachers.

The Strategies to Develop the Critical Thinking in EFL Teaching Supported by ChatGPT

Brown (2004) pointed out that foreign language curriculums should not only focus on language-based knowledge, but also put more emphasis on developing critical thinking skills. All the 4 teachers interviewed were very concerned about how to develop the critical thinking in EFL teaching supported by ChatGPT. Three strategies were reported by the participants in the interviews above. Firstly, encourage students to ask challenging questions and develop their own opinions. They can express different viewpoints and challenge established knowledge and ideas in the using of ChatGPT. Nowadays ChatGPT may provide wrong answers which seems correct. If the students can't think independently and has their own ideas, they might be fooled by ChatGPT. However, such experience might push them to think independently and thus develop the students' Critical thinking, because critical thinking is not only an active independent thinking activity but also a reflective thinking activity, which happens in the thinking process above.

Secondly, conduct group discussion and debate on certain topic in teaching supported by ChatGPT. In the discussion activity, students can examine the similarities and differences between their ideas and those of others (such as the idea of ChatGPT) and explore the reasons for the differences. This contrasting thinking activity is also a feature of critical thinking. Thirdly, use writing as a way to develop students' critical thinking. This was supported by a study which claimed that writing had become an effective tool to cultivate and evaluate the critical thinking ability of English learners (Fulan et al., 2014). In EFL teaching supported by ChatGPT, with reduced workload, the teachers can focus more on improving the effectiveness of teaching, and design better teaching activities to better cultivate the critical thinking of the students. Fourthly, apply project teaching. The activities before, during and after class in PBL provide a wide space for students to use critical skills through information gathering, planning, project implementation, and final evaluation. During the process, students constantly use the skills of interpretation, analysis, interpretation, and evaluation, which can promote the development of students' critical thinking. The teachers should integrate ChatGPT into the normal teaching of cultivating students' critical thinking and effectively promote the development of students' critical thinking.

Conclusion

Since its birth, ChatGPT has taken the world by storm not just in the tech world, but also has aroused widespread concern about its effects in the world's education circles. This paper aims to explore the chances, the challenges, and especially the strategies to develop students' critical thinking in EFL teaching supported by ChatGPT. The following conclusion could be drawn from the results of the interviews. It is obviously that ChatGPT brought some benefits to EFL teaching. Firstly, it can help the teachers improve their working efficiency and ease the burden of work. Secondly, it can help the teachers promote the quality of the teaching by providing abundant information and authentic language materials with high quality, thus increasing students' interest. Finally, it can provide personalized learning support for students based on their personal need. Inevitably, it also brings some problems. The biggest problems might be that students rely too much on ChatGPT without thinking at all, which not only has a negative impact on students' academic integrity but also hinders them to develop critical thinking. In addition, the answers provided by ChatGPT are not correct all the time. Furthermore, this study identified four strategies for developing critical thinking with the support of ChatGPT. Firstly, encourage students to ask challenging questions and develop their own opinions, constantly motivating students to express different viewpoints and challenge established knowledge and ideas. Secondly, conduct group discussion and debate on certain topics. Thirdly, use writing as a way to develop students' critical thinking. Fourthly, apply project teaching.

Limitations and Recommendations

There are some limitations in this study. Firstly, this is a qualitative study, which only interview 4 college teachers as participants. Owing to the limited number of participants, the findings of this paper may not be representative. Secondly, as a new invention, many teachers interviewed are still in the initial exploring stage of using it, and seem not so familiar with the using of ChatGPT, which might makes the results less reliable. Future studies could be conducted based on these limitations mentioned above to expand the sampling which covers a broad geographical and cultural range. In addition, Quantitative studies can also be conducted as well.

Reference

- Arif, F. K. M., Zubir, N. Z., Mohamad, M., & Yunus, M. M. (2019). Benefits and challenges of using game-based formative assessment among undergraduate students. *Humanities & Social Sciences Reviews*, 7(4), 203-213.
- Bishop, L. (2023). A Computer Wrote this Paper: What ChatGPT Means for Education, Research, and Writing. *Research and Writing*.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Brown, H. D. (2004). Some practical thoughts about students' sensitive critical pedagogy. *The Language Teacher*, 28(7) : 23 – 27.
- Burger, B., Kanbach, D. K., Kraus, S., & Corvello, V. (2023) On the use of AI-based tools like ChatGPT to support management research. *European Journal of Innovation Management*, 26(7), 233-241.
- Chapelle, C. A. (2005) Interactionist SLA theory in CALL research [A]. In Egbert J L & Petrie G M (eds.). *CALL Research Perspective[C]*. New York: Routledge, 2005. 65–76.

- Chartr. (2022) ChatGPT: the AI bot taking the tech world by storm. <https://www.chartr.co/stories/2022-12-09-1-chatgpt-taking-thetech-world-by-storm> Accessed 25 Jan 2023
- Cotton, D. R., Cotton, P. A., & Shipway, J. R. (2023). Chatting and Cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*. DOI: 10.1080/14703297.2023.2190148
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage.
- Crompton, H., & Burke, D. (2023) Artificial intelligence in higher education: the state of the field. *International Journal of Educational Technology in Higher Education*, 20(1), 1-22.
- Dewey, J. (1910). *How we think*. Lexington, Massachusetts: D.C. Heath & Company.
- Garcia-Penalvo, F. J. (2023). The perception of Artificial Intelligence in educational contexts after the launch of ChatGPT: Disruption or Panic?. <http://repositorio.grial.eu/handle/grial/2838>
- Hadjerrouit, S. (2011). A collaborative writing approach to wikis: Design, implementation, and evaluation. *Issues in Informing Science and Information Technology*, (8):431-449.
- Harrer, S. (2023). Attention is not all you need: The complicated case of ethically using large language models in healthcare and medicine. *eBioMedicine*, 90, 104512. <https://doi.org/10.1016/j.ebiom.2023.104512>
- Hern, A. (2022) AI-assisted plagiarism? ChatGPT bot says it has an answer for that. <https://www.theguardian.com/technology/2022/dec/31/ai-assisted-plagiarism-chatgpt-bot-says-it-has-an-answerfor-that>
- 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.
- Kasneci, E., Seßler, K., Kuchemann, S., Bannert, M., Dementieva, & Krusche, G. (2023). ChatGPT for Good? On Opportunities and Challenges of Large Language Models for Education. *Learn. Individual Differences*, 103, 102274.
- Kirmani, A. R. (2022). Artificial intelligence-enabled science poetry. *ACS Energy Letters*, 8, 574-576.
- Kitamura, F. C. (2023). ChatGPT is shaping the future of medical writing but still requires human judgment. *Radiology*, 307(2), e230171. <https://doi.org/10.1148/radiol.230171>
- Kong, S. C. (2014). Developing information literacy and critical thinking skills through domain knowledge learning in digital classrooms: An experience of practicing flipped classroom strategy. *Computers & Education*, 78:160-173.
- Kubacka, T. (2022) Today I asked ChatGPT about the topic I wrote my PhD about. https://twitter.com/paniterka_ch/status/1599893818186543105 Accessed 25 Jan 2023
- Kumar, A. H. S. (2023). Analysis of ChatGPT tool to assess the potential of its utility for academic writing in biomedical domain. *BEMS Reports*, 9(1), 24-30.
- Lim, T. M., & Yunus, M. M. (2021). Teachers' perception towards the use of Quizizz in the teaching and learning of English: A systematic review. *Sustainability*, 13(11), 6436.
- Marche, S. (2022). The College Essay Is Dead. *Theatlantic*, <https://www.theatlantic.com/technology/archive/2022/12/chatgpt-ai-writing-college-student-essays/672371/>
- Marshall, C., & Rossman, G. B. (2006). *Designing qualitative research*, Thousand Oaks, CA: Sage.

- Mizumoto, A., & Eguchi, M. (2023). Exploring the potential of using an AI language model for auto-generated essay scoring. <https://dx.doi.org/10.2139/ssrn.4373111>
- Nair, V., & Yunus, M. M. (2021). A systematic review of digital storytelling in improving speaking skills. *Sustainability*, 13(17), 9829.
- Rubini, P. A., James, P. P., Yong, K. L., & Yunus, M. M. (2019). Hear me out! Digital storytelling to enhance speaking skills. *Int. J. Acad. Res. Bus. Soc. Sci*, 9, 190-202.
- Qadir, J. (2022). Engineering Education in the Era of ChatGPT: Promise and Pitfalls of Generative AI for Education. DOI: 10.36227/techrxiv.21789434
- Rajendran, T., & Yunus, M. M. (2021). A systematic literature review on the use of mobile-assisted language Learning (MALL) for enhancing speaking skills among ESL and EFL learners. *International Journal of Academic Research in Progressive Education and Development*, 10(1), 586-609.
- Roose, K. (2023). Don't Ban ChatGPT in Schools. *Teach With It*. New York Times, <https://www.nytimes.com/2023/01/12/technology/chatgpt-schools-teachers.htm>
- Said, N. E. M., Yunus, M. M., Doring, L. K., Asmi, A., Aqilah, F., & Li, L. K. S. (2013). Blogging to enhance writing skills: A survey of students' perception and attitude. *Asian Social Science*, 9(16), 95.
- Saman, E., Asieh, A. (2022). Examining the roles of social presence and human-likeness on Iranian EFL learners' motivation using artificial intelligence technology: A case of CSIEC chatbot. *Interactive Learning Environments*, <https://doi.org/10.1080/10494820.2022.2096638>.
- Sharma, A., Lin, I. W., Miner, A. S., Atkins D. C., & Althoff, T. (2023) Human–AI collaboration enables more empathic conversations in text-based peer-to-peer mental health support. *Nat Mach Intell*. 5, 46–57.
- Warschauer, M., Tseng, W., Yim, S., Webster, T., Jacob, S., Du, Q, & Tate, T. (2023). The affordances and contradictions of AI-generated text for second language writers. <https://dx.doi.org/10.2139/ssrn.4404380>
- Ya-Ting, C., Yang, Wan-Chi, I. Wu. (2012). Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation: a year-long experimental study. *Computers & Education*, 59(2), 339-352.
- Yunus, M. M., & Salehi, H. (2012). The effectiveness of Facebook groups on teaching and improving writing: Students' perceptions. *International journal of education and information Technologies*, 1(6), 87-96.
- Yunus, M. M., Nordin, N., Salehi, H., Embi, M. A., & Salehi, Z. (2014). Future of ICT as a Pedagogical Tool in ESL Teaching and Learning. *Research Journal of Applied Sciences, Engineering and Technology*, 7(4), 764-770.
- Yunus, M. M., Zakaria, S., & Suliman, A. (2019). The Potential Use of Social Media on Malaysian Primary Students to Improve Writing. *International Journal of Education and Practice*, 7(4), 450-458.
- Zakaria, S. M., Yunus, M. M., Nazri, N. M., & Shah, P. M. (2016). Students' experience of using Storybird in writing ESL narrative text. *Creative Education*, 7(15), 2107-2120
- Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education—where are the educators? *International Journal of Educational Technology in Higher Education*, 16(1), 39.