

Self-directed oral foreign language learning powered by generative AI ChatGPT: Voices from Chinese college students

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Abstract. In recent years, the generative artificial intelligence ChatGPT has received attention due to its strong potential in foreign language learning. This study focuses on the role of ChatGPT in self-directed oral foreign language learning and its advantages and disadvantages compared to conventional classroom teaching. In the study, semi-structured interviews were conducted with nine Chinese college students. The results show that ChatGPT can be a conversation partner for students for self-directed oral foreign language learning, through which their oral abilities can be improved. However, ChatGPT has many imperfections and can only serve as a supplement to traditional classroom teaching at this stage. In this study, it is found that students lack relevant theoretical support in their learning so students can sink into blind self-learning. Future research can seek the correct theory to improve artificial intelligence-assisted self-directed learning.

1 Introduction

In recent years, the output language ability represented by oral proficiency has been increasingly valued by teachers and students from China. However, due to the long-term neglect of oral teaching in China's foreign language education system, students are devoid of chances such as taking conversation courses where students can practice oral skills with high frequency, and a lack of foreign language conversation partners after class, which gradually lead to Chinese students' weak foreign language oral abilities.

GenAI is the use of artificial intelligence to create new content such as text, images, music, audio, and video, and using machine learning (ML) models to "learn patterns and relationships from human-created content datasets," and then "use learned patterns to generate new content." ChatGPT, whose full name is Chat Generative Pre-Trained Transformer, is an artificial intelligence chatbot program developed by OpenAI and launched in November 2022 and is a derivative product of generative artificial intelligence. This program is based on large-scale language models GPT-3.5, GPT-4, and the recently launched GPT-4o architecture and is trained through reinforcement learning.

Nowadays, generative artificial intelligence represented by ChatGPT has received widespread attention and research from educators due to its powerful language and text

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generation function and potential application in foreign language learning. Meanwhile, the powerful conversational function of ChatGPT enables it to serve as a conversational partner for students in self-directed learning. The birth of ChatGPT provides new opportunities for students to learn spoken foreign languages independently.

Many students have already started using ChatGPT as a tool for self-directed foreign language learning. This study conducted semi-structured interviews with Chinese university students, collected their evaluations of ChatGPT, and investigated the role of ChatGPT in this field.

2 Literature review

2.1 Research on AIED (Artificial Intelligence in Education) before the birth of ChatGPT

Before the emergence of ubiquitous generative artificial intelligence represented by ChatGPT, many educators had already discussed the empowering role of artificial intelligence in foreign language learning. Silvia Pokrivcakova focuses on the changes brought about by the application of artificial intelligence tools to foreign language education and discusses ICALL (Intelligence Computer Assisted Language Learning) [1]. At the same time, she summarized eight artificial intelligence language teaching tools that were not yet widely popularized at that time [1]. Tapalova, Olga, and Zhiyenbayeva, Nadezhda explored the potential role of artificial intelligence in education (AIED) in building personalized learning systems for students during the teaching process [2].

2.2 Exploration of the feasibility of ChatGPT-assisted foreign language teaching

Since the emergence of ChatGPT, research on generative artificial intelligence-assisted foreign language learning has been enriched. Many researchers have explored and summarized the role of ChatGPT in foreign language teaching. Nisar Ahmed Dahriet al. investigated the acceptance of ChatGPT for foreign language learning among educators [3]. The survey results show that educators view ChatGPT as a positive educational tool and a solution to challenges in the teaching process. Baskara Risang studied the integration of ChatGPT into language courses and projects in higher education and discussed and summarized the potential benefits and challenges [4]. Locky Law provides an overview of the role Gen-AI can play in the application of knowledge in language education, and practical guidance for future research and practice in this disruptive and avant-garde field [5].

2.3 The role of ChatGPT in teaching foreign language writing and speaking

At a more specific level, scholars mainly study the role of ChatGPT in the two basic literacy aspects of foreign language acquisition: writing and speaking. At the writing level, Yanfang Su, Yun Lin, and Chun Lai proposed that ChatGPT can be integrated with classroom writing teaching [6]. Jessie and Barrot have explored the potential benefits and challenges of using ChatGPT for second language writing and provided constructive suggestions for classroom practice in second language writing teaching [7]. In addition, Atsushi Mizumoto et al. have found through research that ChatGPT can become a potential tool for improving the efficiency of second language research and second language writing teaching [8]. In terms of Gen-AI's assistance in oral language learning, Julio Christian Young and Makoto Shishido pointed out that students often face the problem of a lack of opportunities when learning

foreign languages, and discussed the potential of using generative artificial intelligence ChatGPT as a chat-bot to become a dialogue partner and improve students' oral language abilities [9]. Zhenyu Zhang and Huaqing Hong discussed the feasibility and strategies of integrating ChatGPT into foreign language teaching [10]. Jianhao Wu, Wanting Zhou, and Chao Cao proposed that teachers can use artificial intelligence such as ChatGPT to create realistic and real-life situational dialogues for foreign language learners to form a learning mode for students with the joint assistance of AI and teachers [11].

2.4 Self-directed learning

Zhenyu Zhang and Huaqing Hong pointed out that Chinese foreign language learners have fewer opportunities to communicate in authentic foreign language environments when learning a foreign language in school. Moreover, due to the limitations of classroom time and the pursuit of teaching goals, there is usually a lack of opportunities to practice and receive feedback, and opportunities to interact with professional foreign language teachers are even rarer [10]. When Chinese students learn to speak a foreign language, the learning progress is often individual and isolated. Roger Hiemstra Dr. believes that the most common definition of self-directed learning is that Much of the learning takes place at the learner's initiative, self-directed learning is seen as any study form in which individuals have primary responsibility for planning, implementing, and even evaluating the effort [12]. self-directed learning describes a process by which individuals take the initiative, with or without the assistance of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes [13]. According to Fengning Du's research, most college students hold a positive attitude toward self-learning in foreign languages [14].

2.5 Comprehensive analysis of previous research

It is not difficult to see from the above that current research on ChatGPT-assisted foreign language learning mostly focuses on conventional classroom teaching and the potential of ChatGPT in empowering innovative teaching. Even outside of class, teachers often serve as important guides for students, and there is little discussion on the initiative of students to self-learn. At the same time, there is a lack of evaluation of the effectiveness of using ChatGPT for self-directed learning from a student perspective. However, generative artificial intelligence represented by ChatGPT has the ability to act as a conversation partner for foreign language learning, providing conditions for Chinese students to independently learn foreign language oral communication and filling the gap of Chinese students lacking opportunities for oral practice. This study focuses on the evaluation of Chinese students on the application of ChatGPT in self-directed oral foreign language learning, as well as the role of ChatGPT and its impact on self-directed oral foreign language learning.

3 Research questions

The following questions were asked to serve the purpose of the current study.

1. Can ChatGPT play a positive role in Chinese students' self-directed oral foreign language learning?
2. Does using ChatGPT for self-directed oral foreign language learning have unique advantages compared to traditional classroom learning?

4 Methodology

4.1 Ethics

This study adopts a semi-structured interview, inviting a total of nine students from Chinese universities who have used generative artificial intelligence ChatGPT for foreign language learning to be interviewed. All nine interviewees voluntarily participated in this interview and agreed that the videos and sounds could be recorded, and transcribed into text, and the research results could be published with the interviewees' names concealed.

4.2 Interviewees description

Table 1. Backgrounds of the interviewees.

Interviewee	Gender	Age	Major	Location	Purpose
A	Male	21	English language and literature	Beijing	English learning
B	Male	20	English language and literature	Chongqing	English learning
C	Female	19	TESOL	Sichuan	English learning
D	Male	22	German language and literature	Hunan	German learning
E	Female	23	German language and literature	Chongqing	German learning
F	Male	20	French	Hubei	French learning
G	Female	20	Business administration	Yunnan	English learning
H	Male	20	Accountancy	Beijing	English learning
I	Male	20	Automation specialty	Shanghai	German learning

This study selected nine Chinese students as interviewees. As shown in Table 1, the average age of the interviewees is 20.5 years old, of which seven are males and three are females. Three of the interviewees major in English-related majors and are currently using ChatGPT for self-directed oral English learning. Three of the interviewees majored in other non-English foreign language majors, using ChatGPT to study German or French. Three of the interviewees majoring in non-language majors are using ChatGPT for English or German oral skills studying. The interviewees selected for this interview are Chinese students from different cities, universities, and majors to ensure that the results are universal.

4.3 Interview progress

The interview was conducted through Tencent Meeting, and each interviewee was interviewed once in total. Each interview lasts about 30 minutes and is conducted in Chinese, with video and audio recorded. The interview is divided into two parts. In the first part, the focus is on discussing the ways in which the interviewees use ChatGPT for self-directed oral foreign language learning, as well as their opinions on the learning outcomes. In the second part, the topic of whether using ChatGPT for self-directed learning has advantages or disadvantages compared to traditional classroom teaching is discussed.

4.4 Data analysis

After the interview, the interview audios will be transcribed into text, translated into English, and imputed into NVivo to derive cases and the scattered sentences in cases will be conceptualized. The original dialogue will be summarized and named based on existing professional terminology and then coded and analyzed to attain visual results [15].

5 Results

5.1 Coding

Table 2. Students' opinions on the effects of using ChatGPT for self-directed oral language learning

Code	Example	Citation
Progress in oral ability	Improved oral fluency	A "Through the conversation with ChatGPT, my speaking English skills have improved a lot. I speak much more fluently."
	Improved accuracy of oral expression	
	Fewer mistakes	
Alacrity to communicate	Inspiration	E "It's hard to maintain a smooth conversation in German for a beginner. ChatGPT just gives me the way to start a talk."
	Privacy	
Opportunity to talk	Suitable Introduction	I "ChatGPT has greatly helped me to begin my German learning because I don't have a German teacher to teach my oral skills."
	Alternative to human dialogue partners	
	Little moral burden to controversial topics	
Accuracy	Almost no grammar errors	B "When I talked with ChatGPT, he had hardly made any grammatical mistakes."
	Logicity	D "The answer is always logical."
Unproductive	No apparent effect	F "ChatGPT Is not a good way for me to teach yourself a foreign language."

Table 3. The advantages and disadvantages of using ChatGPT compared to conventional teaching.

Code	Example	Citation
Confidence	Sense of safety	C "When I talk in public, I'm always too nervous to say a word. But when I chat with ChatGPT, it gives me a sense of safety. Because it is just an AI."
	Relax	
	Bravery	
	Unbashfulness	
Flexibility	More Chances	G " With help from ChatGPT, I can arrange my study time however I want. I don't have to limit myself to the negligible practice time in class."
	More practice time	
	Flexible learning Schedule	
Knowledgeable	Cultural understanding	E "Our teacher doesn't know much about the culture of German-speaking countries. ChatGPT made me feel like I was talking to a real German."
	More authentic expressions	
	Less grammatical errors	
Detachment	Devoid of human emotion	B "Although the answers of ChatGPT are logical, it performs as an emotionless machine. The answers are too rational."
	Too rational	
Vapidity	Uninteresting	H "ChatGPT is always passively answering. I'd rather talk to a real person than talk to him."
	Passive	
Blindness	Lack of guidance	G "We still need the instruction from the teachers, because ChatGPT won't tell us how to study oral English with efficiency."

As shown in Tables 2 and 3, the two questions "Students' opinions on the effects of using ChatGPT for self-directed oral foreign language learning" and "The advantages and disadvantages of using ChatGPT for self-directed oral foreign language learning compared

to conventional class teaching" are respectively divided into different sub-codes. Each subcode consists of multiple categories.

5.2 Students' opinions on the effects of using ChatGPT for self-directed learning

Seven of the interviewees (77.7%) hold a positive attitude toward using ChatGPT as a tool for self-directed oral foreign language learning. The positive impact on oral proficiency is mainly reflected in improving the fluency and accuracy of students' spoken language, as well as reducing the occurrence of grammar errors in oral communication. In addition, ChatGPT is regarded to be private and inclusive, which gives students who are unwilling to talk in the classroom the opportunity to express themselves in a foreign language

Two of the interviewees (22.3%) hold a negative attitude. They said that their speaking ability did not show significant improvement after two to three months of conversation practice with ChatGPT. At the same time, they stated that their lack of significant improvement may be due to a lack of suitable self-learning methods or that they are not accustomed to communicating with AI, but for other students, using ChatGPT for self-directed oral foreign language learning can be still feasible.

5.3 The advantages and disadvantages of using ChatGPT for self-directed learning compared to conventional class teaching

According to the interview results, it can be concluded that compared with conventional classroom oral teaching, using ChatGPT for self-directed oral foreign language learning has significant advantages in terms of promoting students' willingness and confidence to engage in oral practice, flexibility in the arrangement of oral practice, and cross-cultural learning. ChatGPT provides an opportunity for introverted students to engage in conversations that block the gaze of others, allowing them to overcome the interference of bashfulness caused by their limited speaking abilities and to express their opinions in a foreign language. Secondly, ChatGPT allows oral practice to be no longer confined to limited classroom time, and students can engage in dialogue practice on ChatGPT on the basis of their own arrangements, thus students can obtain flexible and sufficient opportunities for oral practice. ChatGPT can often generate more authentic and culturally relevant dialogues than those taught by Chinese teachers.

Some students also pointed out the disadvantages of ChatGPT compared to teacher teaching. Firstly, as artificial intelligence, although ChatGPT can generate dialogues with logic and accuracy, it is devoid of human emotions and empathy. In most conversations, ChatGPT appears to be too objective and rational, which makes many students feel bored during the conversation. Secondly, ChatGPT does not possess the professional knowledge as a teacher, and cannot provide effective guidance for students' learning, which may lead to ineffective blind learning.

6 Discussion

The results of this interview indicate that ChatGPT has strong text and dialogue generation capabilities. The generated dialogues have the characteristics of strong continuity, strong logic, and rigorous grammar, which are beneficial for students to learn correct expression, correct errors, and improve oral expression ability. Secondly, ChatGPT has strong database support, which allows it to have a wider range of knowledge compared to teachers and can generate authentic and culturally appropriate dialogues. These advantages assist students in

immersing themselves in a rich cultural atmosphere, which is conducive to cross-cultural learning for students. The essence that ChatGPT is a kind of artificial intelligence makes the learning progress inclusive and private, which is of great significance for introverted students in their oral learning. But at the same time, its excessive rationality and lack of human emotion make many students feel bored and uninteresting in dialogue, leading to unsustainable communication. ChatGPT also cannot provide correct guidance for students' self-learning, and practice merely through conversation with ChatGPT has limited improvement in oral ability. The position of conventional classroom teaching is still irreplaceable.

There are some limitations to this study. The sample selected for this study is relatively small, with only nine students interviewed. All nine interviewees are from well-known universities in China. The interviewees have strong foreign language learning abilities, and self-learning abilities, and are proficient in using ChatGPT. Ordinary students may have different opinions about the effects of using ChatGPT for self-directed foreign language learning. In this study students' effectiveness of learning is not evaluated through tests, and all results were obtained from the responses of the interviewees.

7 Conclusion

This study focuses on the effects of ChatGPT on self-directed oral foreign language learning and the advantages and disadvantages of using ChatGPT for self-directed oral foreign language learning compared to conventional classroom teaching, for which a semi-structured interview was conducted with nine students from Chinese universities. As a powerful generative artificial intelligence, ChatGPT possesses advantages that conventional classroom teaching does not. ChatGPT can be a conversation partner for students for self-directed oral foreign language learning, thereby enhancing their oral foreign language abilities. However, at the same time, there are still some drawbacks to using ChatGPT for self-directed oral foreign language learning, which may lead to poor effectiveness in learning. At present, ChatGPT can only serve as one of the supplementary learning methods for classroom teaching and cannot replace the position of classroom teaching.

The most important issue discovered in this study is that students lack of scientific guidance when using ChatGPT for self-directed oral foreign language learning. Future research can explore specific methods for effective and sustainable learning on ChatGPT or other artificial intelligence platforms, and guide students to develop self-directed learning strategies that align with their own needs.

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