

# ***The Investigation Related to Application of ChatGPT in Language Teaching***

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**Abstract:** Being one of the foremost commercial artificial intelligence models, ChatGPT has garnered extensive attention and utilization within the education sector. Controversies have also arisen in scholarly circles regarding its potential adverse impacts. This study examines the operational principles of ChatGPT and elucidates its applications across various language teaching scenarios through illustrative instances. In the investigation of ChatGPT-assisted grammar instruction, the role and constraints of ChatGPT's grammar correction for Chinese learners are analyzed. Despite ChatGPT's accuracy in educational settings, it falls short in comprehending the requirements of novice learners. Using it as a self-study tool can leave students confused with difficult knowledge. However, it can significantly improve the teaching efficiency of teachers. In the process of ChatGPT assisted pronunciation teaching, this paper collected survey questionnaires from volunteers and summarized the conclusions. Most volunteers support the effectiveness of ChatGPT in oral teaching. Compared to traditional voice assistants like Siri, ChatGPT's pronunciation is more accurate and its sentences are closer to real humans. This paper provides a summary of ChatGPT's application in the field of language teaching, with a focus on two scenarios. It also discusses the shortcomings of ChatGPT in the current stage of language teaching. The future prospects of ChatGPT in language teaching are still very broad, and with the development of technology, the combination of ChatGPT and language teaching will become even closer.

**Keywords:** ChatGPT, Language Teaching, Deep Learning

## **1. Introduction**

ChatGPT is an artificial intelligence chat model developed by OpenAI and launched in 2022. In the past two years, there has been a growing realization that ChatGPT possesses the capability to generate articles that closely resemble those crafted by humans and engage in conversations that mimic human interactions which makes ChatGPT applicable in fields such as writing letters, computer programming, creating music, writing and poetry, etc. It also has a very promising future in the field of language education. In summary, ChatGPT can complete simple conversations with language beginners and give them correct responses, or help students with some language foundation to correct mistakes. Using ChatGPT for language learning can alleviate the teaching pressure of school teachers and the self-learning cost of students to some extent. But it also raised some public concerns about copyright issues and accuracy.

Artificial intelligence (AI) is a discipline that was born in the mid-20th century. It includes models such as machine learning, neural networks, robotics, expert systems, fuzzy logic, and natural language processing [1-4]. ChatGPT, as one of the best commercial models at present, has achieved fruitful results in the field of language learning. For instance, some try to study ChatGPT in experience and perception. And the authors attempted to collect the situation of middle school students in Chinese-speaking countries using ChatGPT to learn English through questionnaires, and discussed the positive impact of technology on student learning. At the same time, they also pointed out that the content generated by ChatGPT did not have proper citations, which could cause plagiarism problems [5]. Furthermore, some foreign language teachers think that ChatGPT has a very strong potential for language teaching, and they believe that ChatGPT is “the end of high-school English”. An English teacher wrote to The Atlantic that ChatGPT currently produces better content than most students’ writing [6]. Some researchers started from the videos related to the application of ChatGPT in language learning uploaded by users on media platforms such as YouTube, analyzed and summarized the relevance of the videos and language learning, as well as the work and learning experiences of the uploaders and viewers, and concluded that ChatGPT has a disruptive advantage in the field of language learning [7]. Those content shows the public the powerful features and some potential risks of ChatGPT in language learning. However, there is little mention of carrying out a review on this aspect. This paper attempts to review the ChatGPT in language learning.

The rest of this paper is organized as follows: First, this review will summarize and discuss the current feasible methods of ChatGPT assisted language learning in Section 2. Then, in Section 3, the application scenarios of ChatGPT in language learning will be discussed. Finally, all contents of the paper will be concluded in Section 4.

## **2. Method**

ChatGPT is a language model based on the transformer architecture. Its essence is to continue writing language to generate natural language text. It learns from human examples to obtain a SFT model, and a developer trains an RM to evaluate the quality of the answers. Finally, the RM uses reinforcement learning to optimize the SFT model. Transformer is a neural network that can understand the context of text, speech, and other related data through some mechanisms. It focuses only on existing text and not on unenervated text. Although most scholars in the field believe that ChatGPT still does not have consciousness, it performs extremely well in terms of language response accuracy and similarity to humans, which is of great help for language learning.

### **2.1. ChatGPT for Improving Grammar**

Grammar is an unavoidable challenge in language learning. Especially in foreign language learning, it is common for beginners to make mistakes in grammar due to the interference of their mother tongue. Using ChatGPT for grammar learning can effectively solve the problems of high self-study costs and inaccuracy. Some related works are presented below.

#### **2.1.1. ChatGPT in Chinese Teaching**

Some researchers used ChatGPT to teach Chinese to non-Chinese students [8]. They input sentences with grammatical errors made by students into ChatGPT for correction. Surprisingly, ChatGPT produced results that were similar to those of experienced Chinese language teachers in correcting sentences in 7 different scenarios. However, this does not mean that ChatGPT can completely replace Chinese language teachers. Although it accurately corrected students’ sentences in multiple scenarios, it provided overly authentic Chinese expressions as answers, which is not conducive to learning for beginners [8]. This to some extent shows that ChatGPT, as an excellent language model, can play its

advantages in grammar learning. However, it is also challenging for the language model to discern that the aim is to alter a sentence to make it more accessible for language learners. To address this issue, the article replicated the experiment while explicitly including the "for beginners" constraint in the conversation with ChatGPT. ChatGPT improved the problems exposed in three of the scenarios, but still had little effect in some cases. In summary, this paper believes that ChatGPT plays an important positive role in assisting grammar learning and sentence correction.

## 2.2. ChatGPT for Improving Pronunciation

According to the visits and surveys conducted in Chinese high schools and universities, oral practice is the most expensive part of foreign language learning. About 70% of students believe that oral practice lacks clear opportunities for practice and learning materials, unlike vocabulary and grammar. At the time of writing this article, ChatGPT did not yet have a voice conversation feature, but this deficiency has been addressed in the latest

### 2.2.1. An Investigation of the Role of ChatGPT in Oral Teaching

Currently, there are few examples of using the new voice function of chatgpt-4.0 for oral teaching. This paper attempted to gather 20 university students and collected a survey after they tried the voice function of ChatGPT. The questionnaire collected this time is shown as Table 1.

Table 1: The questionnaire related to voice function of ChatGPT.

Please choose a number from 1 to 5 according to your personal level in the following questions.	
1.	The English voice generated by ChatGPT is very accurate.
2.	The Chinese voice generated by ChatGPT is very accurate.
3.	ChatGPT cannot provide the answer I expect, and the answer is irrelevant.
4.	In terms of voice generation quality, ChatGPT is superior to traditional voice assistants like Siri.
5.	To ensure the validity of the questionnaire, please answer 4 for this question.
6.	The voice generation function of ChatGPT is not very helpful in improving my spoken English.
7.	I am satisfied with the overall voice generation function of ChatGPT.

After collecting questionnaires and summarizing them, this paper found that in both English and Chinese languages, the average score for accuracy was excellent. The majority of volunteers expressed a preference for ChatGPT over traditional voice assistants such as Siri. A few individuals held the belief that ChatGPT did not contribute significantly to enhancing spoken language skills. Many of them found ChatGPT's responses somewhat unrelated, yet they were impressed by the model's ability to produce highly accurate pronunciations. In conclusion, this paper believes that the latest voice generation technology of ChatGPT-4.0 is an excellent tool that can improve the spoken language learning part in language learning.

## 3. Applications and Discussion

### 3.1. Application

ChatGPT has already achieved fruitful results in the field of language teaching, covering many areas such as grammar correction, vocabulary memorization, and pronunciation practice. Some scholars believe that it can also play a very positive role in higher-level language learning such as translation

teaching [9]. In addition, dialect recognition and teaching are also considered to be a direction for the combination of artificial intelligence and language teaching.

### 3.2. Risks and Challenges

It is undeniable that there are still certain risks in the application of ChatGPT in teaching scenarios at present. The uncontrollable generation of content may lead to questions about academic integrity, over-reliance on teachers and students, and inaccurate information transmission [10]. The academic community has had in-depth discussions on this issue. This paper believes that this paper must face these risks and challenges squarely and screen the content generated by ChatGPT. It is impossible to fully accept the answers given by ChatGPT. In fact, many times when ChatGPT is unable to answer professional questions, it will collect incorrect information from the Internet and connect them into seemingly accurate answers with logically consistent words. This makes ChatGPT perform well when answering beginners, but often makes mistakes when answering more professional questions.

### 3.3. Future Prospect

At present, the latest generation of AI represented by ChatGPT has proven its ability to assist in language teaching and other fields, but the current ChatGPT is still at the language model stage. At this stage, breaking through more advanced AI technology is still the highest priority for the development of the AI field. However, it is foreseeable that the current version of ChatGPT has already had a significant impact on the education industry. In the future, ChatGPT will further integrate with functions such as speech recognition and simulated dialogue in the field of language education. In addition, ChatGPT itself will continue to develop its functionality to provide knowledge point summaries and help self-learners with error correction. The objects, methods, and content of teaching will all change with the emergence of AI like ChatGPT.

## 4. Conclusion

In this work, this paper attempts to complete a survey and review of the application of ChatGPT in the field of language teaching. This paper discusses the application scenarios of ChatGPT in the grammar and pronunciation parts of language teaching through questionnaires and surveys. Although the prospects of using ChatGPT in language teaching are exciting, it is important to note that ChatGPT is still a language model and generates content from the internet, which can lead to plagiarism issues. Furthermore, it is essential to be aware that ChatGPT can provide incorrect answers when dealing with more specialized questions. More seriously, ChatGPT can provide rigorous proof logic for these incorrect answers, which can mislead learners. In the future, ChatGPT, as the most powerful language model, will continue to develop. In addition to exploring its ability to mimic human conversation for language teaching, its powerful abilities in induction, summarization, and internet search will also gradually be incorporated into education.

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