

Applications and Optimization Strategies of Artificial Intelligence in College Foreign Language Teaching - Take ChatGPT for Example

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Abstract:

The methods and theories of foreign language teaching will evolve with the development of educational concepts and technologies. With the development of the times and the popularization of information technology, computer-assisted language learning and online language learning platforms have also become an important part of foreign language teaching, and thus the development of language intelligence technology will directly affect foreign language teaching. On the basis of introducing the basic functions of ChatGPT and its application in foreign language teaching in colleges and universities, this paper analyzes the challenges facing the use of ChatGPT in foreign language teaching in colleges and universities and proposes measures to deal with them. Under the background of the Great Language Model, foreign language teachers should respond to the changes of language intelligence technology on foreign language teaching with a positive mindset, respond to the trend of the times, and cultivate students' critical thinking in order to cope with the challenges of ChatGPT on foreign language teaching.

Keywords:

ChatGPT, Foreign Language Teaching, Potential Problems, Strategies

1. Introduction

The rapid development of information technology has brought about profound changes in the field of education, especially the application of natural language processing technology in foreign language teaching, which provides a new way to improve the quality and efficiency of teaching. ChatGPT, as a kind of natural language generation model based on deep learning, has a high degree of natural language comprehension and generation ability. China has high expectations for the development of intelligent education and has issued a series of important policy documents to guide and promote it. From the New Generation Artificial Intelligence Development Plan to the Action Plan for Artificial Intelligence Innovation in Colleges

and Universities, [13,14] these documents not only point out the direction for the application of artificial intelligence in the field of education, but also put forward specific requirements for the cultivation of talents, the reform of teaching methods, and the improvement of educational governance capacity in various aspects. Our goal is to build an education system that is both intelligent and networked, personalized and lifelong, so as to meet the urgent needs of society for high-quality and diversified education. [7] At the same time, the Ministry of Education has elevated the strategic action of education digitization to a whole new level in the Key Points of Work of the Ministry of Education in 2022. [15] The active promotion of “Internet+Education” and the accelerated advancement of digital transformation and intelligent upgrading of education all demonstrate China’s determination and direction for the future development of education. Under the guidance and support of these policies, artificial intelligence technology is triggering an unprecedented revolutionary change in the field of education.

ChatGPT is an AI chatbot program launched by OpenAI in November 2022, which is based on the large-scale language model GPT-3.5, trained using Instruction Tuning and Reinforcement Learning Techniques based on Human Feedback. [12] ChatGPT is able to interact with the user based on the context, and can also perform tasks such as writing emails, video scripts, copywriting, translation, and code. ChatGPT is also equipped with the ability to continuously learn and progress. As it is used more often, ChatGPT becomes smarter and more precise, and is able to understand and respond to the user’s needs better. Its appearance provides users with a new intelligent assistant that can greatly improve work efficiency and quality. In foreign language teaching, ChatGPT obtains linguistic knowledge by training on a super-large text corpus, and at the same time introduces a reinforcement learning method based on user preferences and applies it to natural language modeling. This paper mainly discusses the basic functions of ChatGPT and its application to foreign language teaching, and analyzes the challenges faced by the use of ChatGPT in foreign language teaching and proposes measures to deal with them, with a view to providing reference for the development of China’s foreign language education industry.

2. Application of ChatGPT in Foreign Language Teaching in Universities

Foreign language teaching not only emphasizes students’ mastery of language skills, but also needs to cultivate students’ international outlook and cross-cultural communication skills. However, the existing traditional foreign language teaching mode has lagged behind the actual needs of students to a large extent, and the limitation of resource allocation often makes it difficult for foreign language teachers to carry out individualized teaching, and for students to obtain sufficient learning resources and practice opportunities. More importantly, the current foreign language teaching has not yet clearly defined the cultivation goals for students. Teachers often pay too much attention to the teaching of language knowledge, but neglect the cultivation of cross-cultural communication skills. [1] This leads to the fact that students are often unable to communicate and effectively when facing real cross-cultural communication situations. Therefore, we need to reform and innovate the mode of foreign language teaching to better meet the needs of students and to cultivate talents with truly internationalized perspectives and cross-cultural communicative competence.

In foreign language teaching, artificial intelligence technology has brought unprecedented personalized, diversified and efficient services to foreign language teaching. ChatGPT, as one of the leaders, is particularly useful in foreign language teaching. ChatGPT is capable of generating huge amounts of linguistic knowledge by virtue of advanced speech recognition, natural language processing and machine learning technologies. It can customize personalized learning resources and tutoring for students based on their learning needs and levels. In its interaction with students, ChatGPT is able to gain a deep understanding of students' learning status, preferences and difficulties, and then adjust the content and difficulty of the teaching according to each student's actual situation, so as to stimulate students' motivation and enhance their learning results. ChatGPT provides a powerful teaching aid for foreign language teachers. In a large student population, it is often difficult for teachers to take care of the learning needs of each student. Teachers can focus on improving the quality of teaching and giving students emotional support by guiding students to use ChatGPT correctly for independent learning. Moreover, ChatGPT can help educators to reduce the burden and increase efficiency, and help to promote the learning style of students from "search learning" to "dialogic learning". [3] ChatGPT simulates a real-life language environment and provides students with the opportunity to communicate with target language speakers. By interacting with ChatGPT, students can practice speaking at any time and get instant feedback and suggestions for revision. This kind of practice helps to overcome the problem of "difficulty in speaking" which is common among Chinese students in foreign language learning, and improves their oral expression and cross-cultural communication skills. ChatGPT has a large information database, which can automatically assess students' language output and provide teachers with feedback on students' learning situation, [2] which helps teachers understand students' learning progress and adjust teaching strategies in time. The use of ChatGPT technology promotes the innovation of teaching methodology, which makes the traditional teaching mode transformed and upgraded, and becomes more flexible. [11]

3. The Challenges of Using ChatGPT for Foreign Language Teaching in Universities

3.1. Detrimental to Students' Real-life Communication Skills

The goal of foreign language teaching is to cultivate students' cross-cultural communicative competence so that they can skillfully use foreign languages to communicate with others. If students rely excessively on ChatGPT for simulated conversations, the time and frequency of face-to-face communication and interaction between students and their foreign language teachers and peers will be reduced to a certain extent. This trend will not only adversely affect students' accurate mastery of intonation, but also hinder the improvement of their oral expression and communication skills. Therefore, foreign language teachers in colleges and universities should let students realize that ChatGPT plays a certain auxiliary role in foreign language learning, but it is only a tool that cannot completely replace real communication between people. Students should focus on communicating and interacting with real people while using ChatGPT, so that they can really improve their foreign language proficiency and realize effective communication.

3.2. Detrimental to Users' Creativity

With the wide application of artificial intelligence technology in foreign language teaching, some students and teachers may begin to rely excessively on such tools for language learning as well as lesson preparation, etc. For students, ChatGPT is undoubtedly a powerful learning tool, and when they encounter difficult problems in the learning process, they may no longer be willing to think independently, and once they encounter a difficult problem, they will not hesitate to turn to ChatGPT, and have no doubt about the answers given by ChatGPT. [4] This practice can weaken students' thinking ability and critical thinking. For teachers, the convenience of ChatGPT is also a double-edged sword. It can indeed help teachers optimize their teaching design, identify deficiencies in teaching, and improve teaching efficiency. But if teachers rely too much on ChatGPT, it may inhibit their desire to innovate and affect the vitality and creativity of education. Education can only adapt to the development of the times and the needs of students if it is constantly innovative.

3.3. The Information Provided by ChatGPT is Hard to Distinguish Between the Real and the Fake

ChatGPT allows learners to easily access almost any information they want to know, but ChatGPT will inevitably make some biases and errors when integrating and presenting knowledge. The data used by ChatGPT for training are old data, which are "hard to know" about the latest news. [6] Moreover, if the questioner himself has some kind of bias or misunderstanding, ChatGPT is likely to give answers based on these biases and misunderstandings. This situation is particularly dangerous for teachers and students. If teachers are unable to accurately recognize the incorrect knowledge in ChatGPT when using it, or even pass on this incorrect knowledge to their students, then this will have a serious negative impact on the quality of education and teaching as a whole. Therefore, when using tools like ChatGPT, foreign language teachers in colleges and universities must maintain a high degree of vigilance and prudence, and teach their students that they cannot blindly trust every answer given by ChatGPT when using it, but need to validate and verify these answers through a variety of channels and methods.

3.4. Integrity Issues in Foreign Language Learning

While widely promoting and applying cutting-edge artificial intelligence technologies such as ChatGPT, foreign language teachers in colleges and universities must prudently consider the ethical and moral issues involved behind them. According to a survey conducted by a foreign authority, more than 50% of students use ChatGPT in their homework or even in exams. It shows the powerful influence of the technology, but it also weakens students' independent thinking ability, and leads to the problem of academic integrity and the frequent occurrence of academic cheating. This phenomenon also poses a great challenge to teachers. When students submit assignments, it is difficult for teachers to accurately determine whether the content of the assignment is from ChatGPT or whether it was completed independently by the student. This makes it difficult for teachers to accurately understand the real learning situation of students and to give appropriate and effective learning advice. This situation is not conducive to the overall development of students.

4. The Strategies for Foreign Language Teaching in Response to ChatGPT Challenges

4.1. Strengthening Teacher Training to Standardize the Use of ChatGPT

In order to ensure that foreign language teachers are able to gain a comprehensive insight into the powerful functions of ChatGPT and clarify its potential limitations, so that they can skillfully incorporate these innovative tools into their teaching activities in their daily teaching, the national education department as well as universities should take up the responsibility of providing professional training on artificial intelligence technologies for foreign language teachers. Through systematic learning, teachers will master how to use ChatGPT and other artificial intelligence tools to implement innovations in key aspects of teaching design, classroom organization, student assessment, etc., and thus achieve a significant improvement in teaching quality and a leap in teaching effectiveness. At the same time, teachers need to have a deep understanding of the challenges and problems that may be brought about by artificial intelligence technology, so that they can adopt scientific and reasonable coping strategies in actual teaching.

4.2. Innovative Teaching Methods and Transform the Role of Teachers

The focus of foreign language skills programs tends to be on the practical application and communicative functions of language, with less attention paid to the value of its cognitive dimensions. The rise of artificial intelligence technology offers possibilities for solving some of the challenges inherent in traditional foreign language teaching. For example, in the face of limited classroom time, it may be difficult for teachers to realize full interaction with each student. However, ChatGPT can effectively assist teachers to achieve a personalized learning experience. On the other hand, human beings can only be nurtured by human beings themselves, and nurturing people is the starting point and destination of education. [9] On the road of foreign language teaching, the role of teachers as guides and soul engineers becomes more and more prominent. They can take the advantage of ChatGPT in text embellishment and artistic expression to cultivate students' aesthetic sentiment and artistic cultivation. In the classroom, teachers should become an emotional supporter and guide for students. They should pay close attention to students' psychological needs, cultivate students' habits and abilities of independent learning, and moreover, cultivate students' creativity. At the same time, teachers also need to guide students to use artificial intelligence correctly, as a powerful assistant on the way of learning. Therefore, foreign language teaching should pay attention to both the cultivation of students' communicative ability and the enhancement of their humanistic qualities. In this process, teachers need to actively embrace artificial intelligence technology, rationally utilize the convenience it brings to teaching, and at the same time constantly update their educational concepts and methods to meet the educational needs of the new era.

4.3. Cultivate Students' Critical Thinking and Information Discernment Skills

In modern foreign language teaching, it is of great significance to develop students' critical thinking. It is not just a simple superimposition and listing of knowledge and information in a foreign language, but the development of a comprehensive analytical ability that involves depth. It enables students to evaluate and think about various linguistic expressions in a critical manner so that they can precisely understand and judge their accuracy and authority. First of all, educators need to provide students with proper guidance and help them develop independent learning attitudes and habits. They should take the initiative to explore and pursue knowledge instead of passively

accepting it. Teachers need to remind students that although ChatGPT is powerful, it may also have the risk of giving wrong answers. Therefore, students should always be vigilant when using these tools and verify the knowledge provided by ChatGPT from multiple sources to avoid being misled. Students should also think deeply about the differences between the ideas given by ChatGPT and the ideas they already have, and the reasons for these differences. Such a thinking process can not only help students better understand and master their knowledge, but also promote the expansion of the depth and breadth of their thinking, so that they can gain richer and more diversified gains on the path of foreign language learning. The role of the teacher is crucial in the development of critical thinking. Teachers need to provide ample space for students to think, encourage them to ask questions, and guide them to conduct in-depth exploration and research.

4.4. Focus on Emotional Communication with Students and Enhance Humanistic Care in Teaching

In order to ensure that students are enthusiastically engaged in the offline classroom while making full use of ChatGPT to improve their learning efficiency, teachers need to move away from traditional teaching models and adopt more innovative approaches. Teachers can use ChatGPT to design interesting and interactive teaching activities, such as role-playing, group discussion and problem solving, which can not only effectively stimulate students' participation, but also promote their active learning ability and teamwork spirit. Teachers can also make full use of ChatGPT's data analysis to gain insights into students' learning status and needs, and based on these real feedback, create personalized teaching plans and activities. In this way, teachers can more accurately meet students' learning needs and significantly improve teaching effectiveness. With the addition of technological elements to the interaction between teachers, learners and learning content, the sociocultural roles of foreign language teachers have shifted. [8] They are no longer just transmitters of knowledge, but also guides and facilitators of student learning. Teachers should actively encourage students to explore and learn independently, provide them with necessary learning resources and suggestions, and help them establish good habits of independent learning. Teachers can also actively play the role of resource integrator, widely collect and integrate all kinds of learning resources to provide students with rich learning materials. At the same time, with the powerful functions of ChatGPT, teachers can easily generate diversified learning materials to stimulate students' motivation and interest in learning and make learning more vivid and interesting.

5. Conclusions

ChatGPT, as a cutting-edge artificial intelligence technology, has had a profound impact on all aspects of foreign language teaching. [10] At the application level, ChatGPT not only demonstrates its excellent ability of intelligent question and answer, but also shows extraordinary potential in language practice and personalized teaching, which greatly improves the effect of teaching and students' learning experience. However, everything has two sides, and the application of ChatGPT is no exception. ChatGPT is not designed for specialized language learning, as a dialogue system, although it can build a self-learning scenario, it can't yet replace classroom teaching and the role of foreign language teachers. [5] It has greatly enriched teaching methods, but it is also accompanied by problems such as over-reliance, potential risks to the accuracy of information, and academic integrity. Facing these challenges, foreign

language teaching should adopt a series of coping strategies. With the continuous progress of artificial intelligence technology, the application of ChatGPT in foreign language teaching will have a broader prospect. We can look forward to more innovative applications of its intelligent speech recognition, natural language generation, etc., all of which will provide strong support for students' learning effectiveness and language proficiency. However, we also need to realize soberly that as the application of ChatGPT goes deeper, it will also encounter more challenges and problems. Therefore, we need teachers, students and schools to work together to explore and innovate in order to cope with these challenges and ensure the stable development of ChatGPT in foreign language teaching.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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