

Application potential and risk challenges of artificial intelligence ChatGPT in the field of foreign language teaching in universities

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Keywords: artificial intelligence; ChatGPT; foreign language teaching; application potential; risk challenges

Abstract: Artificial intelligence ChatGPT has both a great application potential and certain risk challenges in the field of foreign language teaching in colleges and universities. As a teaching aid, it can provide abundant teaching resources for teachers and students, create practical training conditions in second language communication and customize personalized learning programs for students. As an emerging technology, it may lead to the risk of weakening the critical thinking ability of teachers and students, the ethical risk of educational application, and other possible technical risks, hinder the fair development of education. In this regard, the paper holds that human beings should analyze the change dialectically, treat the risks rationally, and rise to the challenges actively. When facing the teaching application of artificial intelligence ChatGPT, researchers should adhere to the attitude of finding and correcting mistakes, discovering and solving problems, detecting and making up for deficiencies, utilizing and expanding advantages. Only by embracing artificial intelligence with an open mind, can human beings continuously promote the development and progress of education and civilization.

1. Introduction

On November 30, 2022, OpenAI launched a free preview of ChatGPT which was considered an unprecedented technological revolution. On March 15, 2023, with the release of GPT-4, ChatGPT is no longer a text-only conversation, but has evolved to understand pictures and support mixed text and image input, showing amazing natural language understanding and communication capabilities.^[1] Education has thus become the primary field of practice and action object of ChatGPT.

At the University of Cambridge, Professor Bhaskar Vira pointed out that university students should fully utilize artificial intelligence technology, such as ChatGPT and other new tools, and should not be limited. These technologies can help students better master knowledge and improve learning efficiency. However, to ensure that students adhere to academic integrity when using these new technologies, schools need to make appropriate adjustments to teaching methods and examination standards.^[2] Professor Bhaskar Vira's view is objective. He affirmed the potential of artificial intelligence technology to serve human beings, and suggested the risk of artificial intelligence technology hindering human development. Some other foreign scholars have also expressed concerns about the feasibility and potential negative effects of the application of ChatGPT in education. They argue that ChatGPT faces a variety of challenges, including reliance on data quality, limitations on the scope of knowledge, deterioration of ethical concerns, and the risk of technological dependence and abuse. The use of ChatGPT in education may lead to a lack of communication, limited understanding, inaccurate training data, lack of innovation, insufficient understanding of context, and privacy breaches. Generative AI systems such as ChatGPT also have bias and misinformation, which brings serious moral hazard, etc.^[3-5] In this regard, Professor Jiang Hua of Dalian University of Technology believes that using and regulating ChatGPT is an inevitable choice for the development of education. Active learning, rational application, establishing norms, strengthening supervision, scientific guidance, and promoting transformation are effective strategies to meet the challenges of

generative AI.^[6]

ChatGPT is just the beginning of generative artificial intelligence research. The continuous progress of science and technology is an inevitable trend, and the continuous iteration and optimization of artificial intelligence technology is an inevitable result. Therefore, it's necessary for education to take advantage of the situation, embrace, accept and improve, rather than reject, denigrate and prevent artificial intelligence technology, actively deal with potential application risks, give full play to the maximum value of artificial intelligence technology in the field of education.

2. Application potential of artificial intelligence ChatGPT in foreign language teaching

The logic ability and output ability of artificial intelligence are based on computer learning and virtual generation, and the GPT series has always taken language model as the core task. It means that the massive data search supported by artificial intelligence technology can bring resource convenience to college foreign language teaching, and the language teaching centered on language acquisition and application also has the hope and potential to promote the reform and development of foreign language teaching with the help of ChatGPT's text language mode.

2.1 Enrich learning resources

Artificial intelligence ChatGPT has powerful information search and integration capabilities, allowing teachers and students to input in natural language and get rich resource feedback. From the perspective of teachers, ChatGPT can output teaching preparation resources such as teaching plans, teaching modes, teaching innovations, teaching methods and the like with features of short time, complete content and more creativity according to teachers' needs, saving teachers' time of resource retrieval, meeting teachers' demand for teaching development, and helping teachers get educational information quickly, widely and conveniently. From the perspective of students, ChatGPT can provide rich learning resources for students with no limitations of time, space, subject, language, which is convenient for students to prepare, study, review and check the gaps. Taking foreign language teaching as an example: students can use ChatGPT to input group tasks and obtain resources such as topic background, task steps, related content, etc. They can even continue to generate detailed text, such as implementation content, dialogue text, language translation of group project based on previous interaction background.

Aside from the influence of artificial intelligence on the critical thinking of teachers and students, the huge amount of data brought about by the reform of information technology provides convenience for the acquisition of teaching and learning resources, and creates conditions for the improvement of teachers' teaching and students' independent learning.

2.2 Assist second language communication practice

Artificial intelligence ChatGPT can generate natural language text for users' input, support multiple rounds of dialogue and context understanding.^[7] It plays an important auxiliary role in developing the practice of second language communication. At present, the main forms of L2 communication practice in colleges and universities include short-term classroom interaction, regular communication activities after class, targeted L2 training, and students' autonomous communication training, etc. The practice is characterized by openness and timeliness without continuity, which is one of the difficulties that foreign language practice teaching has not broken through, and one of the advantages of artificial intelligence ChatGPT applied in foreign language teaching.

The first is the difficulty to be broken through in foreign language practice teaching. The objects of short-term classroom communication are mostly students who have a strong L2 communication intention and certain advantages in L2 expressions, dare to conduct open second language training. The practice process is affected by many factors such as teaching venue, communication time, number of students and communication willingness, and the practical effect of second language communication is limited. Regular after-school communication activities and targeted second language training are aimed at improving a small range of students' second language communication ability, whose training effect is affected by many factors, like the scale, the purpose, and the

requirement of the activity. Therefore, the latter two forms are not universal for foreign language teaching. Actually, students' autonomous communication training depends on and is subject to students' communication willingness in second language, and the lack of teacher guidance will affect the proficiency and accuracy of second language communication to some extent.

The second is the advantages of artificial intelligence ChatGPT applied in foreign language teaching. Some students do not have the intention to communicate in second language in public due to different levels of second language, different personalities, objective environmental factors and some other reasons. Such students can use ChatGPT system to carry out relatively secret man-machine second language communication training in a suitable environment. Its actual benefits lie in the real-time reply and private customization of ChatGPT, so that students can get rid of the limitation of time, space, embarrassment and numbers of students in face-to-face communication training, so as to improve students' willingness to communicate, protect students' privacy and maintain students' emotional stability. ChatGPT can also provide guidance and help for students' second language practice training, including creating second language communication situations, explaining grammar problems, matching translation strategies and training specific language points. Apart from the occasional errors in accuracy and logic, artificial intelligence ChatGPT plays an important auxiliary role in foreign language teaching practice.

2.3 Improve personalized learning customization

Artificial intelligence ChatGPT not only has data and interaction, but also has the feedback generation feature based on users' input. It can provide personalized and customized learning plans for students, and then create suitable conditions for students to learn independently.

Traditional personalized teaching has higher requirements for teachers' experience and energy. Teachers should customize learning plans for students according to their individual differences, personality differences and learning needs, adjust and improve students' learning process based on teachers' subjective experience. However, the traditional personalized teaching has some defects, such as limited time and energy of teachers, high teaching cost, low learning efficiency, etc., which are the main reasons for the slow development and limited promotion of personalized teaching.

Compared with traditional personalized teaching, ChatGPT is more accurate and efficient. Massive data technology can generate natural language text according to students' character, level, hobbies, and recommend suitable learning methods and resources. Features of continuous rounds of dialogue and context understanding can timely understand students' learning progress, grasp the teaching difficulty, and then make personalized adjustments to the learning content, improve students' learning status and learning efficiency.

3. Risk challenges of artificial intelligence ChatGPT in foreign language teaching

Artificial intelligence ChatGPT has great application potential in the field of foreign language teaching in colleges and universities, but it also faces certain risks and challenges. Rich learning resources can bring convenience to teachers and students' teaching and learning, but there is also a risk of weakening their critical thinking ability. The practice of auxiliary second language communication innovates the ways of second language communication, but the limitations and deficiencies of intelligent technology also bring risks to knowledge security. The personalized learning conditions of students can be optimized, but the ethical risks that may exist in educational applications cannot be ignored.

3.1 Risk of weakening critical thinking

The application of artificial intelligence ChatGPT in foreign language teaching may weaken the critical thinking ability of teachers and students. From the perspective of teachers, they can innovate professional ideas, increase professional knowledge and improve professional abilities based on ChatGPT. However, over-reliance on convenient retrieval to carry out teaching activities may lead to the risks of declining teachers' independent thinking ability and weakening teaching innovation ability. From the perspective of students, they can realize resource retrieval, conduct second language

communication and carry out personalized learning based on ChatGPT. Nevertheless, under the long-term benefit of intelligent teaching, students may face risks such as brain laziness, limited creativity, and weakened critical thinking ability.

3.2 Ethical risks in educational application

The application of artificial intelligence ChatGPT in foreign language teaching may cause some ethical risks. The first is that students may abuse the intelligent technology in learning process. For instance, the automatic problem-solving function of ChatGPT can be used as both an auxiliary learning tool and an exam cheating tool. It is easy to be used by students in homework, daily tests, open-book exams, etc. Therefore, teachers are likely to form wrong evaluation of students' learning effect, which is not conducive to students' academic development, hinder the normal teaching order, and even cause educational inequity. The second is the risk of privacy and data leakage. Students will input personal information, interests, learning process and some other private data in using ChatGPT. Once these data are illegally collected, students may face some harassment or even adverse effects, such as targeted advertising, big data push, sales calls, etc. The third is the risk of unfairness, discrimination, and wrong values. Fundamentally, artificial intelligence system is an intelligent technology based on big data and algorithms to calculate output, which does not have human moral values, and the corresponding data analysis and content output may have certain deviations. Hence, the ethical risks of its educational application cannot be ignored.

3.3 Technical limitations and deficiencies

The application of artificial intelligence ChatGPT in foreign language teaching in colleges and universities will have certain technical limitations and deficiencies. First of all, the data is limited. The generated content of ChatGPT comes from the historical retrieval and extraction of the existing database. It means that ChatGPT system does not have the ability to update real-time data and students cannot obtain the current affairs information that has not been entered into the database, so the existing technology is not enough to fully support the cultivation of cross-cultural ability of foreign language students. The second is the reasoning and logic ability of ChatGPT is not that good. It is not so equipped with the ability of detecting false information that leads to generate wrong information. For example, input "If South Korea's prime minister Winston Churchill and Chinese table tennis players Yao Ming photo together, how should they pose?" in ChatGPT, the generated answer will not point the fact that Churchill was the British prime minister, and even advice Yao Ming to wear the uniform representing the Chinese table tennis team to show his popularity and achievements in the field of sports. Therefore, the authenticity and accuracy of ChatGPT's information generation ability needs to be improved. Finally, the use of ChatGPT is limited. At the present stage, most of the software assistants related to ChatGPT are charged, whose technology cost and use cost are very high. Therefore, ChatGPT can not be successfully applied to the practical training of second language communication in foreign language teaching for the time being, its cost and transformation need to be balanced.

4. Conclusion

To sum up, AI ChatGPT not only has great application potential, but also faces certain risk challenges in the field of foreign language teaching in universities. However, AI ChatGPT, which takes language model as its core task, is different from other disciplines and has greater advantages when applied to foreign language teaching. Its performance in all aspects of language learning is relatively ideal. Therefore, the application research of ChatGPT should be specific to a single subject, rather than a general discussion of its properties. Science and technology comes from education and goes to education, which is the basis for the continuous progress of human civilization. Only by embracing artificial intelligence with an open mind, can human beings continuously promote the development and progress of education and civilization.

Acknowledgement

The paper is a phased achievement of the 2023 project of Dalian Academy of Social Sciences “Research on the role of Artificial Intelligence ChatGPT in Foreign Language Education in Dalian Universities” (No. 2023dlsky278); Education and teaching reform research project funding of College of Arts & Information Engineering, Dalian Polytechnic University(No. GDYXJG202310).

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