



Analysis of the Application Status and Trends of Artificial Intelligence Technology in International Diversified Higher Education—Taking Teaching Chinese as a Foreign Language as an Example

Qiyong Li^{1,*}

¹ Department of Psychology and Brain Science, Washington University in St. Louis, MO 63130, USA

**Corresponding author. Email: kristina.li@wustl.edu*

ABSTRACT. At present, there are some problems in the traditional international Chinese education, such as the lack of educational resources and the difficulty of cross-cultural communication. The maturity of artificial intelligence technology has brought new opportunities for China's international Chinese education and communication. Based on the development of artificial intelligence technology, international higher diversified education has broken through the limitations of time and space, learning resources and cultural barriers. Artificial intelligence technology can be used in intelligent curriculum design, automatic adjustment of teaching content and methods to improve teaching effectiveness. It can be used in intelligent learning management, fine management and guidance of students' learning behaviour and performance. The artificial intelligence technology helps students overcome cultural barriers. In the future, the application of artificial intelligence in international higher diversified education will be further characterized by cultural localization, learning individualization and technological diversification. We should actively embrace higher education in the era of intelligence, strengthen the study and application of artificial intelligence technology, and continue to promote the high-quality development of the internationalization of higher education.

Keywords: Artificial Intelligence, International Higher Education, Diversified Higher Education, Cultural

1 Introduction

International higher diversified education refers to the teaching of Chinese as a second or foreign language for foreigners in China, whose teachers include Chinese native speakers, overseas Chinese and foreigners, whose teaching objects are foreigners, whose teaching contents are Chinese as a second or foreign language, and whose teaching places can be at home, overseas or virtual space [1].

In the traditional international higher diversified education, most of the foreign students in China feel that it is very difficult to learn Chinese, especially the Chinese culture contained in Chinese. People with different cultural backgrounds have different attitudes towards things because of their different values. Although there are great differences between Chinese and Western cultures, there is no difference between good and bad, and there are certain regional differences [2]. The Chinese people attach importance to collectivism, believing that the interests of collectivism are greater than those of the individual, and that individual interests can be sacrificed in the face of collective interests. Westerners pay more attention to individualism and pursue personal development and performance, believing that sometimes a person fails to achieve his own goals, not because of destiny, but because of his laziness and lack of fighting spirit. Westerners speak straight, while Chinese people pay attention to modesty and politeness, and pay attention to maintaining relationships with others. For foreign students in China, learning the culture of the target language country is more profound than learning a language. Different values between China and the West will inevitably lead to difficulties in learning and communication for foreign students in cross-cultural communication. The foreign students' own cultural identification with the target language country and their personal preference for the Chinese-speaking country are also one of the causes of intercultural communication barriers. If foreign students have great resistance to foreign countries, it is difficult to adapt to interpersonal communication in life, and they come and go alone. Over time, they will have an aversion to foreign countries, which will become a very important cultural barrier, and eventually lead to cultural shock, and they have to return to their native countries, unable to carry out cross-cultural communication.

The development of artificial intelligence technology, especially the emergence of ChatGPT (Chat Generative Pretrained Transformer), has attracted wide attention and discussion from all walks of life. The field of international Chinese education is also actively exploring and thinking about how to use artificial intelligence technology to better carry out international higher diversified education. This paper will focus on the analysis of the advantages, disadvantages, application status and future development trend of artificial intelligence technology in international higher diversified education, and give corresponding suggestions to provide reference for international higher education workers.

2 Advantages of Artificial Intelligence Technology in International Diversified Higher Education

2.1 Break Through the Limitations of Time and Space

Under the technology of artificial intelligence and digital person, there will be a "double teacher" type of human teacher and virtual digital person in teaching Chinese as a foreign language, and learning materials will change from traditional paper textbooks to electronic textbooks with remote interactive function. As a collaborative teaching partner of teachers of Chinese as a foreign language, digital people can

provide homework guidance to foreign students, automatically evaluate student's homework and examinations, such as Chinese grammar and detection of wrong spelling, automatic processing of scoring, etc., to help teachers reduce time investment in repetitive and mechanical work. In the teaching process, because learners come from different countries and use different languages, it will lead to communication barriers between teachers and students. Digital people can quickly translate the language output by students, form a language that teachers can understand in the output interface, and help break through the language barriers in the teaching process [3]. At the same time, artificial intelligence and digital human technology course system has the advantage of remote interactive teaching, and teachers and students can complete Chinese course learning without the same real teaching scene.

2.2 Break Through the Limitations of Learning Resources

Generative AI, represented by ChatGPT, as an artificial intelligence technology, is having a profound impact on educational concepts and methods. Generative AI can provide customized educational experience for each student through natural language processing technology and personalized algorithms. This means that educational implementation can tailor course content and teaching methods for students according to their interests, learning styles, abilities and levels, and improve teaching effectiveness. Realize individualized teaching. Generative AI can be used as an infinite knowledge base to provide students with endless information and resources. At the same time, the evolving AI technology is constantly collecting data and reinforcing learning based on human feedback. AI will provide more intelligent, systematic and personalized knowledge services for human beings in continuous learning, and this technology can enable students to learn more independently.

2.3 Break Through the Limitations of Cultural Barriers

The application of AI technology in the field of language translation has made important progress. Using neural networks and deep learning algorithms, AI systems can achieve high-quality automatic translation. This not only facilitates the communication between different languages, but also promotes cross-cultural cooperation and understanding. People can use AI translation tools to conduct business negotiations, learn foreign languages and other activities more easily, and strengthen cultural exchanges and integration. AI system can analyse the emotional state and intention of participants according to the content of dialogue, provide appropriate feedback and suggestions, and help people better understand and interact. At the same time, AI system can also provide guidance on cross-cultural etiquette, business negotiation and cultural background to promote effective communication and understanding between different cultures [4].

Of course, we should be soberly aware that compared with the original teaching methods, the application of artificial intelligence technology in language learning still needs to be improved. For example, in language learning, speech recognition and

natural language processing technology cannot fully accurately analyse human language, and the effectiveness of their teaching applications remains to be verified. Only through repeated experiments and research on artificial intelligence technology, can we better improve the effect of language learning.

3 Application Status And Trends of Artificial Intelligence Technology in International Diversified Higher Education

3.1 Intelligent Course Design

AI technology can help educators analyze student's learning situation and habits, automatically adjust teaching content and methods, and improve teaching effect. In addition, AI technology can also make personalized learning plans and teaching plans for students according to their interests, learning styles and levels, so as to make education closer to student's needs and interests and help students better grasp knowledge. Schools design individualized learning plans according to each student's learning needs, long-term learning preferences or diagnosed learning needs, in order to promote the healthy development of student's characteristics or personality. Traditional teaching of Chinese as a foreign language requires offline teaching at a fixed time and place, which is difficult to take into account the personality of learners, while through artificial intelligence, big data and other technologies, we can adopt a very flexible way of teaching [5]. Students have more scope to choose independently, from institutions, teachers, time, place, learning difficulty and so on. Intelligent language learning tool is a powerful weapon to solve Chinese learning. The release of ChatGPT has attracted wide attention in the field of teaching Chinese as a foreign language. Chinese learners can communicate with artificial intelligence people in Chinese and improve their oral expression ability. At the same time, it also provides a large number of Chinese learning resources for Chinese learners, such as the stroke order of Chinese characters, Chinese grammar, Chinese pronunciation and other knowledge, to help Chinese learners learn the language better, and give students greater learning autonomy and choice. Highly customized learning of Chinese as a foreign language cultivates students' intelligence, and the curriculum design respects the differences between individual students, which is very beneficial to both learners, teachers and institutions.

3.2 Intelligent Learning Management

Intelligent learning management refers to the use of data analysis and artificial intelligence technology to refine the management and guidance of student's learning behaviour and performance. AI technology can help teachers and students in learning management, for example, ChatGPT can achieve high-precision human-computer interaction feedback in the process of monitoring student's learning progress and evaluating students' learning results. AI technology can also develop a variety of

intelligent teaching tools, such as speech recognition, machine translation, speech synthesis, to help students learn and communicate more conveniently. Artificial intelligence technology helps students learn and memorize knowledge more efficiently. For example, students can use artificial intelligence technology to develop intelligent learning notes tools to help students automatically extract and organize the key and key information in learning materials. Intelligent learning note-taking tools can automatically identify keywords and key sentences in learning materials through natural language processing and information extraction technology, and organize them into structured learning notes. In addition, students can also use artificial intelligence technology to develop intelligent learning evaluation tools to help students evaluate learning effectiveness and learning progress. Intelligent learning evaluation tools can analyse student's learning data and learning behaviour through machine learning and data mining technology to evaluate students' learning level and learning ability. For example, in online education and distance education, intelligent learning management can record students' online learning time, knowledge points mastered and difficulties not mastered, so as to provide more personalized learning programs and educational guidance [6]. At the same time, intelligent learning management can also help teachers better grasp the learning situation of students, timely understand the learning status of students, feedback and improve teaching methods, improve classroom effectiveness and teaching quality.

3.3 Intelligent Cross-Cultural Communication and Experience

Through the construction of virtual scenes, AI can help students to communicate and cooperate across cultures, such as through intelligent speech recognition and machine translation, students can more easily communicate with students from different countries and regions, and through intelligent translation, online video and other technologies, to promote cross-cultural exchanges and cooperation among students and break them. Let students have a wider understanding of the cultures and talents around the world. Social media platforms are also actively using artificial intelligence technology to provide intelligent services. For example, AI can help users better understand the culture and customs of other countries by analysing their interests and behaviours and recommending interesting cultural exchange content for users [7]. Artificial intelligence can also provide a platform for cultural background knowledge query and exchange, so that users can more easily access and share cultural information. Compared with the past, with the development of new artificial intelligence technologies, we can use live webcasting to expand publicity, and we can also use the intelligent inspection, sensitive word recognition and evaluation functions of intelligent devices to achieve the effect of public opinion control. AI technology can also organically integrate two different cultures to create an immersive stage, such as making shadow plays of traditional cultural figures from other countries, so that people from all countries can experience Chinese traditional culture in a way that is acceptable to them, and achieve benign cross-cultural communication through experience [8]. Artificial intelligence has an important impact on the way of interpersonal communication and communication. The popularity of intelligent

assistants, automatic translation technology, virtual reality and social media, chat robots and other applications has made communication in higher education more efficient and convenient, transcending the limitations of language, region and culture.

4 Trends of Artificial Intelligence Technology in International Diversified Higher Education

Facing the future, the integration and innovation of artificial intelligence technology and higher education will further change the dynamic structure of higher education and innovate the new mode of higher education development. In the future, artificial intelligence technology will present an important trend of cultural localization, learning individualization and technological diversification in international higher diversified education. In the future, artificial intelligence technology will create a new ecology of learner-centered, more open and integrated international higher education in the digital age.

4.1 Localization of Culture

Localization, also known as localization, refers to the integration of Chinese education into the development of other countries, mainly involving teachers, teaching materials and teaching. Despite the efforts made by the parties concerned, the issue of localization has not been fundamentally changed up to now. We use intelligent technology to develop localized courses, present teaching content in digital form, and integrate local elements such as local humanities, history and geography into Chinese subject knowledge, which is conducive to reducing cultural differences in the learning process and improving knowledge acceptance. Research and development of local teaching materials, the construction of intelligent teaching and research system, the participation of Chinese teachers and local teachers, the integration of native and local teaching resources, the realization of cross-regional joint compilation of teaching materials, intelligent technology to achieve automatic or semi-automatic compilation of teaching materials, thereby reducing research costs and improving research efficiency. To create intelligent classroom and empower teaching activities, teachers use intelligent assistants to effectively manage the classroom and have more time to communicate and interact with students; to achieve localized presentation of knowledge through automatic translation and simulation, and to enhance understanding and perception [9]. AI technology provides full process support from registration, teaching, practice, evaluation and feedback, breaks the restrictions on the number of classes and teaching methods, increases teaching practice opportunities, strengthens precise training, shortens training cycle and reduces costs, which is conducive to the rapid expansion of the number of local teachers. Promote the development of teachers and use intelligent technology to promote the improvement of teachers' professional quality. On the one hand, teachers use intelligent software tools to analyse data and summarize theories in scientific research activities, so as to continuously improve their scientific research ability and

serve teaching practice more efficiently. On the other hand, with the support of artificial intelligence technology, social software, online conference platform and other tools cross the physical territory to help local teachers learn and cooperate with excellent teachers outside the country to improve their quality.

4.2 Personalization of Learning

On-demand service is the basic feature of future education. Intelligent technology enables personalized learning to meet personalized learning needs. We apply artificial intelligence enabling learning system to carry out personalized learning. Learners can choose their own learning methods, teachers and teaching content, which is different from the traditional way of unchanged courses, teachers and time, so as to satisfy learner ' s different interests and hobbies. Technology-supported evaluation can diagnose students' learning more accurately, and new teaching modes such as mixing, flipping, synchronization and virtual learning have gradually become the norm, and micro-certification has continued to develop in higher education [10]. On the online education platform supported by intelligent technology, based on big data flow, teaching, learning, evaluation, management, scientific research and other processes are interactive and symbiotic, and educators, learners and managers are interconnected in the dual space of virtual and real integration. We enhance the learning experience and achieve a sense of achievement. Using artificial intelligence technology, learners can conduct cross-cultural communication and language knowledge learning through social learning platform and Internet learning, cultivate language thinking ability, learn and use, obtain good educational experience, and promote the acquisition of language knowledge. Enhance education services to meet the different needs of the market and provide added value [11]. Build a public service platform for international Chinese education, provide value-added services such as cultural exchanges, academic activities, examination services, ability assessment, learning tools, and provide educational learning products outside the classroom. Artificial intelligence technology can be used to ensure the service quality of the platform, improve service efficiency and strengthen the innovation of service forms. Personalized intelligent learning tools can play the role of virtual tutor, with powerful information storage and search capabilities, providing knowledge capacity far beyond human teachers, and providing added value for learners.

4.3 Diversification of Technologies

The new generation of information technologies such as artificial intelligence, big data, block chain, digital twin and meta-universe are fully integrated into the educational environment and learning scene, and the intelligent teaching environment will provide more immersive, virtual and interactive learning experience; the intelligent platform will stimulate the integrated and innovative advantages of high-quality digital education resources and form a sharing pattern; The value of the whole process of accompanying educational data in educational application scenarios will be further released; intelligent technology enables teachers and students to improve their

digital literacy and skills; and the system guarantees the sustainable development of the digital transformation of education. Based on the support of intelligent teaching environment, large resource system, data elements, digital literacy and skills, and institutional mechanisms, the digital upgrade of business processes within universities is realized. When artificial intelligence and virtual reality technology are integrated, education will take on a new look. Taking scientific experiment teaching as an example, traditional experimental teaching is limited by experimental conditions, equipment and security issues, while the integration of artificial intelligence and virtual reality technology can provide students with an unlimited experimental environment [12]. Students can complete all kinds of experiments in virtual reality, which can not only improve the safety of the experiment, but also save the cost of the experiment and improve the teaching effect. The integration of artificial intelligence and virtual reality technology will also provide strong support for distance education. Students can participate in remote classrooms through virtual reality technology, interact with teachers and classmates in real time, overcome geographical constraints and enjoy high-quality educational resources. Artificial intelligence can provide personalized counselling and support for distance education to ensure that students can also get a good learning experience in the distance environment. The combination of artificial intelligence and block chain technology can provide students with a more secure and credible learning environment. Educational institutions can record students' learning process and achievements through block chain technology to ensure the security and accuracy of data.

5 Conclusions

Educational informationization has become the theme of the times, and China's artificial intelligence technology has been in the leading position in the world. Introducing the rapid development of artificial intelligence technology into the field of international Chinese education will certainly promote the better and faster development of international education. Practitioners of international education should grasp the new trends of the times and social development in time, break the barriers of disciplines, realize the deep integration of international Chinese education and artificial intelligence technology, optimize, reshape and build new international Chinese education resources, systems and platforms with the help of artificial intelligence technology, and realize the deep integration of online and offline, virtual and reality. We should conform to the important trend of cultural localization, learning individualization and technological diversification, and further realize the deep integration of artificial intelligence technology and international higher education.

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