

Study on the Application of AI Technology in Foreign Language Teaching

Qiuzhong Ou

School of Foreign Languages, Wuhan Business University, Wuhan, Hubei, China

476014380@qq.com

Keywords: AI, Foreign Language Teaching, Challenges, Strategies

Abstract: With the advent of the new era, the application of artificial intelligence (AI) technology is becoming increasingly widespread in various fields, including foreign language classroom teaching. The article first elaborates on the application and challenges of AI technology in foreign language classrooms, with a focus on the transformation of foreign language classrooms in the new era, the diverse application forms of AI technology in assisting foreign language teaching, as well as its advantages and disadvantages. Finally, some constructive strategies are proposed, including increasing funding to optimize the AI teaching environment, strengthening technical training and support for teachers and students in the “AI+5G” technology application, optimizing the application of AI in foreign language teaching, and strengthening technical means and prevention of privacy leak.

1. Introduction

Faced with the changes in education and teaching methods in the new era of digitization, informatization and artificial intelligence, the traditional “teaching centered” teaching method that focuses on knowledge transmission is unable to meet the needs of students in the background of the “ubiquitous information” digital age. The “student-centered” teaching approach has also been criticized for the passive invisibility of teachers, while the “learning-centered” teaching philosophy effectively breaks the binary opposition between teaching and learning [1]. There is no denying that AI technology is applied to foreign language teaching in accordance with the teaching philosophy of “learning-centered”.

AI is a technology and science that simulates, extends, and expands human intelligence, aimed at enabling computer systems to perform tasks that typically require human intelligence, such as learning, reasoning, problem-solving, recognizing images and speech, natural language processing, decision-making, and more. AI technology has been widely applied in multiple fields, including healthcare, finance, education, transportation, manufacturing, and so on. In the field of foreign language education, AI can provide personalized teaching platforms, including speaking, listening, reading, writing, translating, and homework grading, all of which can be achieved through AI technology.

In terms of importance, the application of AI technology in the field of education is becoming increasingly widespread, especially in foreign language education, demonstrating enormous potential and value. The introduction of AI technology has not only changed the traditional mode of foreign language teaching, but also provided learners with more personalized and efficient learning paths. Under the background of globalization, mastering one or more foreign languages has become a growing demand for more and more people, and the application of AI technology precisely meets this demand, making foreign language learning more convenient and efficient. By intelligently analyzing learners’ abilities and progress, AI can provide customized learning plans to help learners improve their language skills more effectively.

The importance of AI technology in foreign language teaching is also reflected in its ability to provide immediate feedback and evaluation. Traditional foreign language teaching methods often rely on the subjective judgment of teachers, while AI technology can provide learners with objective and timely feedback through precise data analysis, helping them quickly identify and

correct errors, thereby accelerating the learning process. In addition, AI can simulate real language environments and improve learners' oral and listening abilities through interactive learning, which is difficult to achieve with traditional teaching methods. Therefore, the application of AI technology not only improves the effectiveness of foreign language teaching, but also creates a richer and more interactive learning experience for learners.

2. The Application and Challenges of AI Technology in Foreign Language Classrooms

2.1. Teaching Transformation

In the field of higher education, digital transformation is becoming the main engine driving the modernization of education. The “Guidelines for the Construction of Digital Campus in Higher Education Institutions (Trial)” provides a clear guidance framework for this transformation and emphasizes the importance of smart campuses [2]. Smart campus goes beyond the scope of traditional digital campus, integrating cutting-edge information technologies such as artificial intelligence, big data, cloud computing and the internet of things to create an efficient, personalized, and intelligent educational environment for teachers and students. This environment deepens the integration of information technology and educational practice, prompting teachers to constantly explore and apply these technologies, especially AI technology, in order to innovate teaching methods and adapt to the new demands of education in the digital age. The highly information-based smart campus environment has brought opportunities and challenges for foreign language teachers in universities to transition to AI teaching. The transformation of AI teaching is reflected in foreign language classrooms, where teachers integrate AI technology into traditional teaching methods and environments during the teaching process, using AI technology to promote the intelligent transformation of various educational scenarios such as teaching, learning, management and evaluation, in order to achieve innovation and improvement in teaching modes, teaching content, teaching management and teaching evaluation, further improve teaching efficiency, enhance students' learning experience, improve education quality, and ultimately achieve the goal of personalized and popularized education. This transformation is not only an innovation in technological applications, but also a revolution in foreign language education concepts and teaching strategies. It requires foreign language teachers not only to master AI technology, but also to integrate it into teaching philosophy and practice to achieve innovation in teaching and optimization in management.

2.2. Application Forms

AI technology presents diverse application forms in assisting foreign language teaching, including various AI application technologies or software. For example, intelligent language learning software is a relatively common type. These software can provide personalized learning plans and course content based on learners' levels and needs. Some software can test and evaluate learners' vocabulary, grammar mastery, etc., and then accurately push learning materials suitable for their current level, including article reading, listening exercises, oral dialogue simulations, etc., allowing learners to steadily improve in their familiar difficulty levels. Meanwhile, the intelligent tutoring system also plays an important role. It can provide real-time answers to learners' problems encountered during the learning process, whether it is a complex grammar analysis or question about word usage, and can quickly give accurate and detailed feedback, just like having a dedicated foreign teacher on standby around you. In addition, AI-based speech recognition and evaluation technology has been effectively applied in oral teaching. It can accurately identify and analyze learners' pronunciation, point out pronunciation errors and shortcomings, and provide improvement suggestions to help learners correct their pronunciation habits, improve the accuracy and fluency of oral expression.

With the increasingly widespread application of AI technology in the field of foreign language education, the integration of AI technology with foreign language education has significantly improved, especially in listening, speaking, and writing. In terms of assisting listening, intelligent

language learning platforms can provide diverse listening materials and be equipped with speech recognition technology to help students accurately understand the content they hear. Through real-time feedback, pronunciation errors can be pointed out, effectively improving students' listening skills. For example, some software can automatically adjust the pace and difficulty of learning based on students' listening abilities, making the learning process more personalized. The application of AI technology in oral practice is also noteworthy. Some applications use advanced speech recognition and natural language processing technologies to evaluate users' pronunciation, intonation and fluency in real time, and provide specific improvement suggestions. In addition, these programs can simulate real conversation environments, allowing students to practice conversations with virtual partners, greatly enhancing the interactivity of learning. Writing guidance is also an area where AI technology plays an important role. By analyzing large amounts of textual data, AI systems can provide students with guidance on how to organize article structure, choose appropriate vocabulary, and avoid common grammar errors. This immediate and specific feedback mechanism helps students quickly improve their writing skills.

2.3. Advantages

The application of AI technology in foreign language teaching has significantly improved teaching efficiency and learning outcomes with its unique advantages.

One of its highlights is the personalized learning plan. AI can customize exclusive learning content and difficulty based on students' learning progress, abilities, and interests, ensuring that each student can learn at the most suitable pace for themselves. In traditional foreign language teaching, teachers often find it difficult to fully consider the individual differences of each student. However, AI systems can use big data analysis and machine learning algorithms to gain a deep understanding of each learner's learning style, progress and weak links, thus tailoring learning paths and contents to make learning more targeted and improve learning efficiency. For example, for students who are good at visual memory, the system will provide more learning materials with illustrations and texts; For students who are sensitive to listening, the proportion of listening training should be increased. This highly customized learning mode greatly stimulates students' learning motivation and potential, enabling them to master foreign language knowledge more efficiently. Secondly, learning resources are abundant and updated in a timely manner. AI can integrate high-quality foreign language learning resources worldwide, covering various languages, different difficulty levels, and rich and diverse thematic contents, such as business English, travel English, academic English, etc. It can quickly update the latest language expressions, popular vocabulary, and cultural knowledge, allowing learners to access the most cutting-edge and practical foreign language information, broaden their horizons, and enhance their practical language skills. Thirdly, 24-hour uninterrupted learning services are achieved. Learners are no longer limited by the time and space of traditional classroom teaching. As long as there is an internet connection, they can start learning mode at any time and use fragmented time for foreign language learning, which is convenient and fast, greatly improving the flexibility and autonomy of learning.

In addition, AI technology also provides an instant feedback mechanism, which can provide accurate evaluations and suggestions in real time, whether it is pronunciation correction in oral practice or grammar checking in writing tasks, helping students correct errors in a timely manner and consolidate learning outcomes. Especially in writing, AI technology not only focuses on the quality of individual sentences, but also evaluates the logical structure and coherence of the entire article, helping students clarify the logical relationships between paragraphs, ensuring clear arguments and hierarchical discourse [3]. For example, if a student's paper lacks an introduction or the conclusion is not strong enough, AI can. This real-time feedback not only saves teachers' time, but also enables students to quickly recognize their shortcomings and make improvements, thereby effectively improving learning efficiency.

2.4. Challenges

Although AI technology has shown great potential in the field of foreign language education, its application also faces a series of challenges and limitations.

One of the most significant problems is the lack of emotional communication and humanistic care. Language learning is not only about accumulating knowledge, but also involves understanding cultural connotations and expressing emotions. In traditional foreign language classrooms, interaction and communication between teachers and students, as well as among students, can create a good language learning atmosphere and stimulate learning interest and motivation through emotional resonance. Although AI systems can provide rational knowledge and skill guidance, they cannot give encouraging looks, patient listening, and warm care like human teachers. This may lead learners to feel lonely and bored in the learning process, especially when facing difficulties and setbacks. The lack of emotional support may affect their determination to persevere.

On the other hand, excessive reliance on AI may weaken autonomous learning abilities. If learners rely on the guidance and assistance of AI systems for a long time and become accustomed to passively receiving knowledge, they may gradually lose the ability to actively explore, think independently and correct by themselves, which is not conducive to cultivating innovative thinking and self-directed learning habits. Once they leave the AI assisted environment, they may experience discomfort in language use and learning strategies.

Furthermore, although AI technology has made breakthroughs in personalized teaching, it is still difficult to completely replace human intuition and creativity. Each student has a different learning style and ability, and excellent human teachers can intuitively identify students' needs based on experience and make corresponding adjustments. However, AI systems typically require a large amount of data input for effective analysis, which means they may appear slow or inflexible when faced with individual differences.

Finally, technological dependence is also a problem that cannot be ignored. Over-reliance on AI may lead to students losing their ability to think independently, while excessive trust in technology may also mask some potential teaching problems, making them difficult to detect and solve problems in a timely manner.

In addition to the challenges and limitations mentioned above, there is another problem that must be brought to our attention, which is the risk of privacy leak. Privacy leak refers to the unauthorized acquisition, use, or disclosure of personal data. Artificial intelligence assisted teaching in education requires the collection and analysis of lots of student data to provide personalized services, but this also poses serious challenges to data security and privacy protection [4]. In AI assisted teaching systems, the risk of privacy leakage mainly comes from the following aspects: technical defects, human operation errors, internal data abuse, and third-party service risks [5]. Technical defects refer to security vulnerabilities in the design and implementation of a system, such as software defects, improper encryption techniques, etc., which may be exploited by hackers to access stored sensitive data. Human error refers to the misoperation of system administrators or users, such as configuring data access permissions incorrectly or accidentally publishing sensitive information, which can lead to data leakage. Internal data abuse refers to the opportunity for internal personnel of a system to misuse system data due to authorized access, such as illegally selling or leaking data for personal gain. Third party service risk refers to the possibility that many educational institutions may outsource data processing and storage tasks to third-party service providers. If these third parties have deficiencies in data protection measures, they may also become the source of data leak. How to ensure the security and privacy of student data, prevent data leak and abuse, has become a problem that must be faced and solved in this field.

Therefore, while enjoying the convenience brought by AI, we also need to be aware of its limitations and explore how to better integrate AI with human intelligence to jointly promote the development of foreign language education.

3. Strategies

3.1. Increasing Funding Investment and Optimizing AI Teaching Environment

Universities should establish an efficient foreign language teaching smart classroom and optimize the AI teaching environment. To effectively implement the AI teaching model, universities

need to strengthen the information infrastructure of foreign language education and create a comprehensive AI teaching environment [6]. Firstly, schools should build intelligent language learning classrooms, virtual simulation language laboratories, computer-aided translation laboratories, etc., to provide teachers with places to apply information technology. At the same time, schools need to provide stable and high-speed campus network services to ensure that teachers can use these facilities without barriers to carry out teaching activities. In addition, schools should develop or introduce smart teaching cloud platforms such as U-Campus, FIF oral training system, and ITEST intelligent testing system. These platforms not only comprehensively support teaching activities such as listening, speaking, reading, writing and translation, but also effectively manage the teaching process, providing intelligent platform support for teachers to continuously deepen their information literacy in the practice of teaching innovation. Through these measures, schools can create a comprehensive AI teaching environment for teachers and promote their continuous improvement of information literacy in practice.

The optimization of AI teaching environment cannot be achieved without strong support from teaching funds, but it is necessary to clarify the direction and focus of increasing funding investment. On the one hand, funds should be reasonably allocated for the construction and maintenance of AI teaching hardware based on the actual needs and development plans of the school. Sufficient financial support is needed for the renovation and upgrading of old classrooms, as well as the upgrading of laboratory equipment. At the same time, it is necessary to strengthen the daily management and maintenance of teaching hardware, ensure its normal use, extend its service life, and avoid duplicate investment. On the other hand, attention should be paid to the development and application of teaching software. Encourage teachers to actively utilize modern information technology to create high-quality multimedia courseware and online learning resources, providing students with diverse learning channels. In addition, advanced educational and teaching software such as intelligent teaching systems and virtual laboratories can be introduced to enhance the intelligence level of teaching. Schools should encourage enterprises, social organizations and individuals to provide support for the construction of teaching hardware and software facilities through donations and establishment of education funds. In addition, funds can also be raised through various channels such as developing school run industries and collecting tuition fees to improve the educational and teaching conditions of the school.

3.2. Strengthening the Technical Application Training and Support of “AI+5G” for Teachers and Students

Schools should strengthen training and technical support for teachers and students to help them better adapt and apply new technologies. For teachers, they should constantly learn and master new technologies to enhance their professional competence and technical abilities. At the same time, attention should be paid to the personalized needs and development of students, and AI technology should be used to provide more accurate and effective learning support for students [7]. For students, they should master the application technology of AI assisted learning, actively participate in and adapt to the learning mode of AI-assisted teaching, and fully utilize the learning resources and paths provided by AI technology. There is no doubt that “AI+5G” technology training and support are important for both teachers and students.

With the rapid development of technology, “AI+5G” technology has become an important way to promote the modernization of education. For English teaching, combining “AI+5G” technology will help improve teaching effectiveness and meet personalized learning needs and levels of students. The “AI+5G” technology benefits from powerful functions such as speech recognition, natural language processing, and machine translation, enabling multiple interactive modes such as teacher voice input, student voice output, and intelligent error correction. It enables teachers to seamlessly connect with students and provide them with a more natural and authentic English learning context [8]. At the same time, combining the high-speed and low-latency characteristics of 5G technology, it can support teaching scenarios such as real-time video conferencing, virtual reality, and remote experiments, thus better meeting students’ learning needs. Moreover, through the

intelligent evaluation and analysis of AI technology, teachers can more accurately understand students' learning status and level, and develop personalized learning plans and course settings based on different learning needs and abilities. The high-speed transmission and low latency of 5G technology can also ensure the real-time transmission and data processing of learning materials, providing teachers and students with a more efficient and convenient learning environment.

Overall, the application of "AI+5G" technology is an inevitable trend in modernizing English teaching. It can enrich the form and content of English teaching, improve teaching efficiency and quality, provide students with more personalized learning experiences, promote the integration of "AI+5G" technology with English teaching, and further enhance the level and quality of English education. Therefore, teachers and students who receive "AI+5G" technology support must master the application of "AI+5G" technology. Only in this way can we better carry out foreign language classroom teaching based on AI technology.

3.3. Optimizing the Application of AI in Foreign Language Teaching

Having an efficient AI teaching environment is not enough, it is also necessary to effectively optimize the application of AI in foreign language teaching.

Firstly, it is necessary to recognize the irreplaceable position of human teachers in the educational process. AI excels in providing personalized learning and instant feedback, but the emotional communication, cultural understanding and moral guidance of human teachers are areas that AI finds difficult to reach. Therefore, using AI technology as an auxiliary tool to complement human teachers can not only improve teaching efficiency by utilizing AI's data analysis and processing capabilities, but also maintain humanistic care and deep communication in education.

Secondly, adding cultural elements is also the key to optimizing the application of AI technology in foreign language teaching. Rich cultural background knowledge should be integrated into AI teaching content, and through situational simulation and cross-cultural communication, students can deepen their understanding and identification with the target language country's culture while learning the language. For example, when explaining literary works, teachers can guide students to experience the cultural background and emotional charm behind the works through vivid narration, which is beyond the reach of AI. This not only enhances students' interest in learning, but also helps them better adapt to the practical needs of cross-cultural communication. In short, by comprehensively utilizing the advantages of human teachers and the efficiency of AI and continuously enriching the cultural elements in teaching content, the overall effectiveness and learning experience of foreign language teaching can be greatly improved.

Thirdly, developing high-quality AI foreign language education resources is also crucial. Relevant departments and educational institutions need to increase investment in the research and development of AI education resources, organize professional foreign language education experts and technical personnel to work together, and create AI foreign language learning platforms and curriculum systems that are rich in content, diverse in form, in line with educational laws and highly adaptable, so as to ensure the authority, scientificity and practicality of resources.

In addition, it is crucial to cultivate students' habits and abilities to use AI correctly. Schools and teachers should strengthen guidance for students, making them understand that AI is only a tool for assisting learning rather than a substitute. They should teach students how to independently plan learning, screen information, and evaluate learning outcomes with the help of AI. At the same time, they should pay attention to cultivating their critical thinking ability, avoid blindly believing in the answers given by AI, and learn to question and explore deeply.

3.4. Strengthening the technical means and prevention of privacy leak

Implementing comprehensive and effective data privacy and security protection in AI assisted teaching systems is crucial for maintaining trust and integrity in the educational environment. By adopting and implementing multi-level security measures, including advanced encryption technology, multi factor authentication, permission based data access control, and utilizing block-chain technology, the system's protection capabilities can be significantly enhanced to ensure the security and privacy of teaching data. This is not only in line with the trend of technological

development, but also a necessary step to address the increasing network security threats. In addition, it is necessary to strengthen the awareness of network security among teachers and students, pay attention to the standardized operation of network platforms, and take preventive measures. Through the implementation of these measures, educational institutions can provide a safer and more transparent learning environment for teachers and students, promoting the sustainable development of the education industry.

4. Conclusion

The application of AI technology in the field of foreign language education shows great potential and broad prospects. It can not only improve teaching efficiency and quality, but also provide students with richer and more diverse learning resources and personalized learning experiences. However, we should also be aware of the limitations of AI technology and the potential negative impacts it may bring. Only through reasonable planning and scientific guidance can AI technology truly become a powerful tool for promoting the development of foreign language education. In the future development process, we need to continuously optimize and improve relevant strategies, fully utilize the advantages of AI technology, and be alert to its potential risks, striving to achieve a harmonious coexistence between technology and education. Through continuous innovation and practical exploration, we have reason to believe that AI technology will play an increasingly important role in the field of foreign language education, helping to cultivate new era talents with global perspectives and cross-cultural communication abilities.

References

- [1] Wang Honglin. (2019) Approaches to Reforming Elementary Foreign Language Teaching in AI Era: From Monologue to Dialogue to Multifaceted Interaction [J]. Basic Foreign Language Education, (06), 3-8+107.
- [2] Cheng Ping, Liao Xijia, Wu Shiyu. (2023) Research on Certified Public Accountant Auditing Based on ChatGPT [J]. Friends of Accounting, (15), 148-154.
- [3] Luo Lin. (2024) Exploration of Innovative Applications of Generative AI Assisted Foreign Language Teaching[J]. Campus English, (18),28-30.
- [4] Zhou Qin, Wen Xinyue. (2020) From Adaptive to Intelligent Adaptation: A New Path for Personalized Learning in the Age of Artificial Intelligence [J]. Modern Education Management, (09), 89-96.
- [5] Xu Guiju. (2025) Data Privacy and Security Strategies in AI Assisted Teaching Systems [J]. Intelligence, (03),118-121.
- [6] Luo Mei. (2024) Exploration of AI Teaching Transformation and Information Literacy Improvement for Foreign Language Teachers in Universities Under the Background of Smart Campus [J]. Guangxi Education , (33),16-22.
- [7] Ye Weiyu, Chen Jing. (2025)The Current Situation and Research of AI Assisted Teaching in Education in the Era of AI [J]. Technology Wind, (04), 68-70.
- [8] Tang Jingwei. (2023) Research on Foreign Language Cloud Teaching Mode from the Perspective of “AI+5G” [J] . Journal of Jilin Radio and Television University, (04), 70-72.