

AI-Powered Sino-Foreign Joint Education: Innovative Approaches and Practices in Language and Cultural Teaching

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Abstract: Sino-foreign joint education serves as a vital carrier for China's high-level opening-up in education, while language and cultural teaching acts as the core support and foundation for talent cultivation, which significantly affects the quality of school-running and educational effectiveness. At present, China's artificial intelligence (AI) technology has achieved tremendous development, providing a new solution to the long-standing problems in language and cultural teaching of Sino-foreign joint education, such as large disparities in students' proficiency and difficulties in Sino-foreign teaching collaboration. In view of this, this paper analyzes the education orientation of Sino-foreign joint education and systematically explores the implementation paths of AI-enabled language and cultural teaching, so as to provide theoretical references for the high-quality development of Sino-foreign joint education in the new era.

Keywords: Artificial intelligence; Sino-foreign joint education; Language and cultural teaching; Innovative paths; Cross-cultural education

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1. Introduction

As an important window for China's opening-up in education, Sino-foreign joint education has gradually become a key base for cultivating compound international talents in China. By the end of 2024, the number of approved undergraduate and above Sino-foreign joint education institutions and programs in China had exceeded 1,300, with the enrollment scale surpassing 600,000 students, covering all disciplines, including science, engineering, agriculture, medicine, liberal arts, and business. As the "entry threshold" and "lifeline" of Sino-foreign joint education, language and cultural teaching requires students to possess academic language competence compatible with foreign curriculum systems and cross-cultural communication competence adaptable to transnational study and life. For a long time, language and cultural teaching in Sino-foreign joint education has been confronted with many structural problems, such as uneven students'

language foundations, poor collaboration between Chinese and foreign teachers, and huge gaps in regional resources. The integration of AI technology can effectively break the spatiotemporal boundaries and model limitations of traditional teaching, providing technical support for the systematic reform of language and cultural teaching in the future.

2. Core values of AI-enabled language and cultural teaching in Sino-foreign joint education

2.1. Helping to solve core pain points of school-running and adapting to the core goals of international talent cultivation

The pain points of language and cultural teaching in Sino-foreign joint education mainly lie in the contradiction between the traditional standardized teaching model and students' personalized cultivation needs. In the same program, students' language proficiency upon admission varies drastically: some have met the language admission standards of overseas universities, while others are still at the basic language learning stage. As a result, traditional large-class teaching is difficult to cater to differentiated demands, easily leading to the dilemma that "top students are not challenged, and underachievers cannot keep up." Through the reform of AI-enabled language and cultural teaching in Sino-foreign joint education, teachers can use AI adaptive learning systems to conduct multi-dimensional assessments and locate students' competency weaknesses and learning needs, thus generating a personalized learning path of "one policy for one student" to effectively break the limitations of standardized teaching^[1]. Combined with AI digital foreign teachers and 24-hour intelligent practice systems, it can effectively make up for the shortage of foreign teacher resources in schools and provide students with an all-weather language practice environment. Meanwhile, teachers can use virtual simulation technology to build highly realistic scenarios such as overseas classrooms and academic seminars, enabling students to complete language application and cultural perception in immersive experiences, and more accurately adapt to the cultivation goals of international talents in Sino-foreign joint education.

2.2. Promoting the transformation of the teaching paradigm and realizing the upgrade from "tool-oriented" to "competency-oriented"

Traditional language and cultural teaching in Sino-foreign joint education is generally limited by "examination-oriented orientation." Many schools take the passing rate of language proficiency tests as the core teaching goal, and teachers focus on imparting instrumental language knowledge, such as vocabulary and grammar, ignoring the cultivation of students' cross-cultural critical thinking and global competence. This easily leads to the situation that students "pass the language barrier but fail the cultural barrier", making it difficult for them to adapt to overseas academic environments and cross-cultural communication scenarios after graduation. The reform of AI-enabled language and cultural teaching can more effectively drive the in-depth transformation of language and cultural teaching from "language tool imparting" to "cross-cultural competency cultivation." Teachers can use multi-modal AI technology to deeply integrate language learning with Sino-foreign cultural comparison and cross-cultural conflict resolution, allowing students to gain a deeper understanding of the thinking differences and value logics between Chinese and Western cultures while practicing language^[2]. In addition, teachers can generate cross-cultural communication cases and simulation scenarios through AI to cultivate students' cross-cultural communication and conflict resolution

abilities. Some teachers also use AI technology to build scenarios for the international communication of Chinese culture, guiding students to strengthen their cultural confidence in cross-cultural exchanges and realizing the two-way cultivation of “international vision” and “patriotism.”

2.3. Breaking down Sino-foreign collaboration barriers and building an integrated education teaching closed loop

Sino-foreign collaborative education is the core feature of Sino-foreign joint education. However, many Chinese and foreign teachers face great collaboration barriers in teaching: there is a lack of regular teaching and research linkage between Chinese language teachers and foreign professional teachers, and there is a serious disconnection between language teaching and professional teaching. The reform of AI-enabled language and cultural teaching can effectively break down Sino-foreign collaboration barriers and provide a new carrier for teachers’ teaching work. By building a Sino-foreign collaborative AI teaching and research platform, Chinese and foreign language teachers and professional teachers can share teaching resources and conduct collective lesson preparation. For core courses of foreign majors, both parties can jointly develop more adapted academic corpora and preview materials to better achieve the full-process integration of “language teaching” and “professional cultivation.” Furthermore, through the AI teaching management system, Chinese and foreign parties can realize the interconnection of teaching data and unification of evaluation standards, facilitating the construction of an integrated teaching closed loop from pre-class preview, in-class interaction, to after-class feedback, which is also an important part of implementing Sino-foreign collaborative education.

3. Problems of AI-enabled language and cultural teaching in Sino-foreign joint education

3.1. Superficial technology application and failure to realize the deep transformation of empowerment value

At present, the AI application in many colleges and universities remains at the superficial stage of “tool replacement”, failing to realize the in-depth reconstruction and systematic reform of teaching models. Most teachers use AI as an auxiliary tool for traditional teaching, mainly limited to mechanical work such as composition correction and text translation, which only allows AI to replace traditional reference books and part of repetitive teaching labor, without fully integrating AI technology into teaching design and implementation. Some schools even have the formalism of “adopting technology for technology’s sake”: many teachers blindly introduce AI platforms and tools in teaching without localized transformation combined with the educational characteristics and teaching needs of Sino-foreign joint education, easily leading to a “disconnection” between technology and teaching^[3]. Some colleges and universities take AI applications as a publicity stunt for school-running without establishing a normalized application mechanism, resulting in the superficial implementation of AI technology. AI has a very limited effect on improving actual teaching quality, which is inconsistent with the core of “student-centered” teaching.

3.2. Insufficient content adaptability and dilution of the core connotation of cross-cultural education

Insufficient adaptability of AI teaching content in many schools is also an important problem restricting

the effect of AI empowerment. In practice, the language and cultural teaching content of many schools is homogeneous and generalized. Most AI-generated language teaching content consists of general daily English and academic English materials, without customized development, combined with the professional characteristics of Sino-foreign joint education. The language teaching demands of different majors, such as engineering and business, vary greatly, but the current generalized AI content makes it difficult to achieve the in-depth integration of “language + major”, affecting the integration of language teaching and professional teaching. In addition, the depth of cross-cultural teaching content in some schools is insufficient: most AI-generated cultural content only stays at the superficial level of festivals and diets, without in-depth analysis combined with Chinese and Western ways of thinking and values, making it hard to cultivate students’ cross-cultural critical thinking and global competence, and seriously diluting the core connotation of cross-cultural education. Even some AI-generated content contains Western-centric cultural biases, which will greatly affect China’s educational sovereignty and cultural security without a strict review mechanism.

3.3. Unbalanced teachers’ digital literacy and a poor Sino-foreign collaborative education mechanism

Teachers are the core subjects of AI-enabled teaching, but the insufficient digital literacy of the current teaching team is also a key issue affecting the implementation of AI. At present, there is a significant gap in digital literacy and application ability between Chinese and foreign teachers: young Chinese teachers have high acceptance and operational ability of AI tools, but generally lack professional literacy in cross-cultural teaching and overseas teaching experience. Although foreign teachers have rich experience in cross-cultural teaching, they are not familiar with most domestic AI platforms and teaching policy requirements, and some foreign teachers even resist AI technology, making it difficult for both parties to form effective teaching and research collaboration. Some colleges and universities have not established a systematic training system for AI teaching competence: the existing training is mostly one-time tool operation training, without training in teaching design and resource development combined with the particularity of language and cultural teaching in Sino-foreign joint education, easily leading to insufficient AI application ability of teachers and affecting their subsequent design of personalized teaching plans and development of cross-cultural teaching resources using AI technology.

4. Innovative paths of AI-enabled language and cultural teaching in Sino-foreign joint education

4.1. Reconstructing the teaching paradigm and building a full-chain personalized education model

To ensure the effect of AI-enabled language and cultural teaching in Sino-foreign joint education, educators need to break through the limitations of superficial technology application and reconstruct a “student-centered” full-chain teaching paradigm supported by AI technology. To this end, educators can try to establish an AI pre-diagnosis and personalized path planning mechanism. Upon students’ admission, educators can use large language models to build a multi-dimensional evaluation system, and then conduct a more comprehensive and accurate assessment of students from their basic language ability and academic English application ability to identify their competency weaknesses. Based on the assessment results, teachers can generate exclusive personalized learning plans for students according to their learning characteristics and development needs, effectively achieving the goal of teaching students in accordance with their aptitude and

solving the problem of uneven students' proficiency. In addition, educators can try to build a multi-modal and immersive cross-cultural teaching scenario. Teachers can use AI virtual simulation and digital human technology to build a highly restored full-scenario teaching system combined with the cultivation goals of Sino-foreign joint education, mainly including scenarios such as overseas university classroom simulation and international academic seminar simulation, enabling students to complete language application practice and cross-cultural communication experience in immersive and interactive scenarios, and solving the problem of insufficient cross-cultural scenarios for students. Schools with conditions can also customize an AI digital foreign teacher team in line with the professional characteristics of partner universities, according to their actual situation, realizing 24-hour one-on-one language practice and academic guidance for students, and solving the problem of scarce foreign teacher resources. To further promote the teaching reform of in-depth integration of "language + major", educators can unite Chinese and foreign language teachers and professional teachers to build a subject-based and major-based academic English corpus using AI technology, better integrating language teaching into the whole process of professional cultivation, and solving the problem of "disconnection" between language teaching and professional teaching.

4.2. Co-constructing high-quality resources and consolidating the content foundation of cross-cultural teaching

In the reform and practice of AI-enabled language and cultural teaching in Sino-foreign joint education, educators should take Sino-foreign collaboration as the core and build a more adaptable and standardized AI teaching resource system, which is also an important foundation for achieving empowerment effects. To this end, educators can try to build a Sino-foreign collaborative AI teaching resource co-construction platform, with a resource construction team composed of Chinese and foreign language teachers and professional teachers. Then, educators can jointly design and develop corresponding AI teaching resources combined with the cultivation goals and professional characteristics of joint education, ensuring that the resources comply with China's educational guidelines and educational requirements, and possess stronger internationality and professional adaptability, thus fundamentally avoiding the homogenization of language and cultural teaching content. In addition, educators can try to establish a dual review and dynamic optimization mechanism for AI content, conducting "AI preliminary screening + manual final review" for all AI-generated teaching content ^[4]. In practice, teachers can use AI technology to quickly screen illegal information, such as grammatical errors and cultural biases in the content, and then a final review team composed of Chinese and foreign teachers and audit experts will conduct a more comprehensive review of the cultural balance and academic rigor of the content to ensure compliance and high quality of the content. Schools can also establish a resource dynamic update mechanism to regularly update and optimize teaching resources combined with Sino-foreign academic dynamics and industry development trends, ensuring the timeliness and adaptability of teaching content. Moreover, educators need to try to build a hierarchical and classified cross-cultural teaching resource system, building a three-level resource system of "basic level—improvement level—elite level" for students at different learning stages and with different language proficiencies. For students at the basic level, educators can focus on basic language ability and superficial cultural common sense; for students at the improvement level, educators can focus on developing their academic English application ability and cross-cultural communication competence; for students at the elite level, educators can mainly cultivate their cross-cultural critical thinking and global competence, so as to better meet students' personalized learning needs.

4.3. Strengthening teacher team construction and building a Sino-foreign collaborative digital literacy improvement system

To improve the effect of AI-enabled language and cultural teaching reform in Sino-foreign joint education, educators should establish a more perfect teacher team, which is also the foundation for improving the effect of collaborative education. To this end, educators can design a differentiated training system for Chinese and foreign teachers. For Chinese language teachers, educators can focus on cultivating their AI-enabled cross-cultural teaching design ability and personalized teaching implementation ability. For foreign teachers, educators can focus on training their ability to use domestic compliant AI platforms, educational norms, and policy requirements. In addition, educators need to establish a Sino-foreign collaborative AI teaching and research community. By building a regular online and offline teaching and research platform, educators can regularly carry out collective lesson preparation, teaching seminars, and other activities to better promote Chinese and foreign teachers to jointly refine AI-enabled teaching plans, realize the sharing of teaching experience and high-quality resources, and solve the problem of poor collaboration between Chinese and foreign teachers^[5]. Furthermore, educators can try to establish an incentive and guarantee mechanism for AI teaching innovation. Schools can take AI teaching innovation practice and educational reform achievements as core indicators for teachers' performance appraisal and professional title evaluation, and set up special educational reform projects to better encourage teachers to carry out more innovative research and practice of AI-enabled language and cultural teaching, stimulate teachers' enthusiasm and initiative, and promote the normalization and standardization of AI teaching application.

Disclosure statement

The author declares no conflict of interest.

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