

Research on the Digital Teaching Reform of Intercultural Communication Courses in the AI Era

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Abstract: With the rapid development of artificial intelligence (AI) technology, the field of education is undergoing a profound digital transformation. As a core course for cultivating international talents, intercultural communication courses are confronted with multiple challenges, including innovation in teaching models, integration of technological applications, and transformation of competency cultivation. This paper systematically reviews domestic and foreign research literature on AI-enabled intercultural communication teaching published from 2023 to 2026. From the dimensions of theoretical foundation, technological application, innovative teaching models, reform of evaluation systems, and existing challenges, it summarizes the current research status and development trends of digital teaching reform, aiming to provide references for the high-quality development of intercultural communication courses in universities.

Keywords: Artificial intelligence; Intercultural communication; Digital teaching; Teaching reform; Blended teaching

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1. Introduction

Against the intertwined background of globalization and digitalization, intercultural communication competence has become an important indicator for measuring the comprehensive quality of college students ^[1]. Traditional intercultural communication courses mainly focus on imparting linguistic knowledge and inculcating cultural theories, ignoring the cultivation of cultural sensitivity and practical communication skills. They suffer from prominent problems such as monotonous teaching methods, limited cultural materials, and insufficient student participation ^[2]. The *Outline for the Construction of a Strong Country in Education (2024–2035)* clearly proposes to “promote artificial intelligence to drive educational reform.” The Notice of the Ministry of Education on Strengthening Artificial Intelligence Education in Primary and Secondary Schools also sets the goal of basically popularizing AI education by 2030 ^[3]. These

policy documents mark that AI technology has become the core driving force for the digital transformation of education.

Meanwhile, the rapid advancement of AI technology has provided brand-new technical tools and teaching paradigms for the reform of intercultural communication teaching. From intelligent language assistants and machine translation to virtual reality (VR) and augmented reality (AR) technologies, from knowledge graph construction to generative AI large models, AI is reshaping the ecology of intercultural education^[4-5]. The release of the *Global Digital Literacy Framework* in 2025 further clarifies the core position of AI in intercultural communication^[6].

This paper aims to systematically review the research achievements of digital teaching reform of intercultural communication courses in the AI era at home and abroad from 2023 to 2026, analyze the main paths, current technological applications, and challenges of the ongoing reform, and provide references for subsequent research and practice.

2. Theoretical foundation and core concepts

2.1. Theoretical framework of intercultural communication competence

Cultivating intercultural communication competence is one of the core goals of foreign language education. The model proposed by British scholar Michael Byram is the most influential theoretical framework, which deconstructs intercultural communication competence into four dynamically interactive dimensions: knowledge, skills, attitudes, and critical cultural awareness^[3]. This framework provides a clear target for AI to empower intercultural teaching: AI can not only help students accumulate cultural knowledge but also play a unique role in skill training, attitude cultivation, and the development of critical thinking.

The combined intercultural model proposed by Deardorff has also attracted wide attention. It emphasizes that intercultural competence is a systematic developmental process involving cognitive, affective, and behavioral levels, which progresses from “cultural cognition” to “behavioral adjustment” and then to “affective tolerance”^[5]. Drawing on Bennett’s Developmental Model of Intercultural Sensitivity, Yang Hua constructed an AI-driven three-in-one cultivation model of “cognition–affect–behavior”, providing systematic theoretical support for teaching intercultural sensitivity^[6].

In China, *An Introduction to Intercultural Communication* by Hu Wenzhong systematically sorts out the basic theories of intercultural communication, offering localized theoretical resources for curriculum reform^[6]. The Intercultural Sensitivity Scale proposed by Chen Guoming and Peng Kaiping in *Fundamentals of Intercultural Communication* provides a quantitative tool for evaluating teaching effects^[6].

2.2. Theoretical logic of AI empowering education

The integration of AI technology and intercultural teaching follows specific educational technology logic. Li Zuowen pointed out that generative AI such as ChatGPT, as an “encyclopedic” model, can provide all-around support in imparting linguistic knowledge, analyzing cultural backgrounds, and simulating communication scenarios^[7]. Technically, large AI models extensively learn multicultural corpora during pre-training and fine-tuning, and can adjust generation styles and contents according to user prompts to realize personalized delivery of intercultural knowledge^[3].

From the perspective of reconstructing the higher education ecosystem, Zhou Hongyu and Chang Shunli analyzed the future prospect of generative AI embedded in higher education and proposed that technological

empowerment should serve the return to the essence of education ^[8]. From the perspective of teacher education, Huang Yue and Deng Tao discussed the construction of quality culture in teaching reform in the era of general artificial intelligence, emphasizing that technological application should be integrated with the development of new quality productive forces and the construction of educational service capacity for a modern China ^[9].

3. Application scenarios of AI in intercultural communication teaching

3.1. Intelligent language processing and personalized learning

Natural language processing (NLP) is the foundation of AI-enabled intercultural teaching. In speech recognition and transcription, advanced systems accurately convert speech in different languages into text, supporting oral intercultural communication training ^[10]. In text analysis, AI uses NLP to conduct multi-dimensional assessments, including grammatical analysis, semantic understanding, and sentiment analysis, judging whether students' dialogues meet intercultural communication standards ^[10].

Research by Zhang Yi and Zhu Qinqin shows that, in the background of AI, college English teaching should make full use of digital teaching videos and guide students to think dialectically about differences between Chinese and Western cultures and customs through question-driven methods, so as to enhance cultural confidence and cultivate intercultural communication competence ^[11]. Wang Jialin further pointed out that digital tools can record multi-dimensional data in real time, such as online task completion, interaction frequency, and resource utilization depth, providing teachers with a basis for dynamic evaluation and realizing process assessment and personalized feedback ^[12].

3.2. Virtual reality and immersive situation construction

VR and AR provide a revolutionary immersive experience for intercultural teaching. Shadiev et al. found that immersive virtual learning environments created by video-based virtual reality (SVVR), combined with interactive strategies, can significantly improve students' intercultural competence ^[13]. Using a mixed-method approach, Li et al. revealed that interactive VR effectively strengthens international students' intercultural communication skills, acting as an irreplaceable "bridge" in intercultural learning ^[14].

In China, a teaching reform project at Hunan University of Arts and Science constructed a blended teaching system that deeply integrates online MOOC self-study and offline practical interaction. Combined with flipped classrooms and VR, it provides students with rich intercultural communication scenarios and practical opportunities ^[4]. The project introduced AI language assistants, intelligent translation tools, and VR situation simulation technology. Empowered by AI, it accurately delivers personalized learning resources and instant feedback, significantly improving students' linguistic accuracy, cultural sensitivity, and intercultural communication skills ^[4].

Yang Hua elaborated on the behavioral applications of VR, AR, and intercultural simulation games: by creating immersive cultural immersion environments, students practice intercultural communication and adaptation skills in simulated practice, shifting from "armchair strategizing" to "virtual combat" ^[6]. This cycle of "experience-reflection-adjustment" transforms learners from passive recipients to active constructors of emotional connections, significantly enhancing adaptability in intercultural contexts ^[6].

3.3. Generative AI and conversational learning

Generative AI, represented by ChatGPT, has opened a new path for intercultural teaching. Taking the teaching of Chinese and Western festivals in primary school English as an example, Guo Hong et al. systematically analyzed the mechanism of large AI models in cultivating intercultural communication competence: in the lesson preparation stage, AI models are used to analyze teaching objectives and generate resources; in the new teaching stage, generative dialogues are adopted to create intercultural communication situations; in the expansion stage, intelligent platforms are applied to assign creative tasks, cultivating students' linguistic competence, cultural awareness, and thinking qualities^[3].

An empirical study by Jin Yiwen from KU Leuven in Belgium pointed out that ChatGPT assistance significantly improves students' terminological accuracy, analytical depth, and strategic systematicness in handling intercultural conflict cases^[1]. Li Zuowen further proposed that foreign language educators should innovate teaching paradigms in the era of human-machine symbiosis, improve digital intelligence literacy, and use ChatGPT to cultivate students' intercultural communication competence^[7].

Taking *College Critical English Course: Intensive Reading* as an example, Kong Lei explored the application of generative AI in foreign language major teaching, noting that AI helps students deeply understand cultural metaphors and values in texts and cultivate critical cultural awareness^[15]. Research by Cai Wenjuan also shows that rational application of generative AI effectively improves teaching effects, helping students accumulate vocabulary, enhance grammatical application ability, broaden international horizons, and strengthen intercultural communication awareness^[16].

3.4. Knowledge graph and intelligent resource library construction

Knowledge graph technology provides a new solution for the systematic integration of intercultural teaching resources. Gan Tian conducted practical research on knowledge graphs in Spanish intercultural courses^[17]. By constructing a knowledge graph for intercultural communication courses, the study aims to improve students' intercultural communication ability and provide an important reference for the digital transformation of college foreign language courses. Ding Jin's research built an AI-driven multi-dimensional cultural reading resource library^[2]. By designing VR/AR-based immersive experience situations, organizing intercultural collaborative learning activities, and establishing a diversified, comprehensive evaluation system, it effectively expands the breadth and depth of cultural teaching.

The "AI Toolkit" developed by Shanghai Jiao Tong University has been deeply integrated into language teaching^[18]. Its cultural contrast analyzer intuitively displays differences in cultural connotations between French and English vocabulary, cultivating intercultural communication competence; the intelligent vocabulary assistant uses NLP to provide instant translation and explanation, helping students understand cultural differences behind words.

4. Innovative paths of digital teaching models

The introduction of technical tools is not the end of teaching reform; the key lies in the systematic reconstruction of teaching models. The digital reform of intercultural communication courses is advancing along three paths: blended integration, human-machine collaboration, and interdisciplinary integration.

4.1. Blended teaching model: Organic connection between online foundation and offline deepening

Blended teaching has become the mainstream paradigm for the digital reform of intercultural courses. Its core logic is to divide labor and cooperate between technological advantages and traditional teaching strengths: online platforms undertake the teaching of basic linguistic knowledge and cultural common sense, providing flexible space for autonomous learning through micro-lectures, online quizzes, and forum discussions; offline classrooms are liberated from “knowledge preaching” and turn to problem-oriented in-depth interaction. Through case analysis, situation simulation, debates, and seminars, they strengthen the practical application ability of language and culture. This division of “laying foundation online and practicing ability offline” not only gives play to the advantages of technology in supplying massive resources and tracking personalized learning, but also retains the irreplaceability of classroom teaching in emotional communication, instant feedback, and in-depth guidance.

4.2. Human–machine collaborative paradigm: From teacher-centered to intelligent collaboration

Another major change in intercultural teaching in the AI era is the reshaping of the relationship between teaching subjects. In traditional classrooms, teachers are the sole authoritative source of knowledge and the absolute leader of the teaching process. Under the new paradigm of human–machine collaboration, teachers and AI form a “dual-subject” relationship of division and cooperation. AI undertakes standardized tasks such as knowledge retrieval, situation simulation, instant feedback, and homework correction, freeing teachers from repetitive work; teachers focus on teaching design, value guidance, in-depth dialogue, and emotional support, which are difficult for AI to replace. This transformation puts forward higher requirements for teachers: they must not only master the operation skills of AI tools but also possess comprehensive literacy in organizing teaching, guiding critical thinking, and evaluating effects in a human–machine collaborative environment. The future intercultural classroom will be a dynamic field where knowledge is co-constructed by teachers, students, and AI.

4.3. Interdisciplinary integration: Curriculum reconstruction in the background of New Liberal Arts

The construction of “New Liberal Arts” advocates breaking disciplinary barriers and promoting the in-depth integration of humanities and social sciences with emerging technologies. Intercultural communication courses are at the center of this trend. Under the background of “New Liberal Arts + Artificial Intelligence”, curriculum content is no longer limited to the traditional scope of linguistics and communication but extends to cultural studies, international relations, area studies, digital humanities, and other interdisciplinary fields. The direction of teaching reform is to build a compound curriculum system with “intercultural competence” as the core, “technical literacy” as the support, and “global vision” as the goal. This reconstruction means that students must not only learn “how to communicate with people from different cultural backgrounds” but also understand how technology shapes the form of intercultural communication and how to maintain cultural sensitivity and critical thinking in AI-assisted intercultural scenarios.

5. Digital innovation of the intercultural competence evaluation system

The effect of teaching reform must be tested through evaluation. The intervention of AI technology is promoting the transformation of intercultural competence evaluation from “summative and single” to “process-oriented and multi-modal.”

5.1. From outcome evaluation to process tracking

Traditional assessment of intercultural competence mostly relies on final exams or one-time situation tests, which cannot fully reflect the dynamic development of students’ abilities. AI-driven evaluation systems can collect multi-dimensional data in real time during the learning process—including online learning duration, interaction frequency, behavioral choices in situation simulation, and linguistic expression features in dialogues—to form a “learning portrait” for each student. This process evaluation not only provides teachers with accurate teaching feedback but also offers students a basis for self-cognition and adjustment, making the evaluation truly serve learning rather than just “scoring.”

5.2. From unified standards to personalized diagnosis

Students differ significantly in different dimensions of intercultural competence: some have rich cultural knowledge but lack communication strategies; some express fluently but have insufficient cultural sensitivity. Traditional evaluation is difficult to capture such differences, but AI systems can conduct accurate diagnostic analysis by comparing students’ behavioral data with the standard model of intercultural competence, identifying each student’s strengths and weaknesses. On this basis, the system can push targeted training tasks to realize a closed-loop optimization of “evaluation–diagnosis–intervention–re-evaluation.”

5.3. Construction of a multi-modal evaluation system

The essence of intercultural communication competence determines that its assessment must go beyond the limitations of “paper-and-pencil tests.” AI-supported multi-modal evaluation integrates students’ performance data at three levels: cognitive (knowledge tests, cultural case analysis), affective (attitude scales, sentiment analysis of reflection journals), and behavioral (performance records in situation simulation), constructing a comprehensive evaluation model. This model not only focuses on what students “know” but also on how they “think” and “act”, thus reflecting their actual intercultural communication competence more comprehensively and authentically.

6. Challenges and prospects: Between technological empowerment and humanistic persistence

The opportunities brought by AI to intercultural teaching are obvious, but the deepening of technological application is accompanied by non-negligible risks and challenges.

6.1. Technological dependence and ethical risks

The convenience of generative AI may induce students’ “technological dependence”—using AI as a “shortcut” to complete tasks rather than a “tool” to assist thinking. Uncontrolled dependence may cause students to lose the ability to perform independent analysis and critical thinking. In addition, AI-generated content may

contain cultural biases or information deviations; uncritical use may convey inaccurate or even harmful cultural concepts. Therefore, technological application must be carried out within an ethical framework, cultivating students' digital literacy and critical ability to use AI, enabling them to judge the reliability of AI output, identify potential cultural biases, and question or supplement when necessary.

6.2. Repositioning of teachers' roles

The intervention of AI does not weaken the importance of teachers; on the contrary, it puts forward higher requirements. In the new ecology of "human-machine collaboration", teachers need to complete three transformations: first, from knowledge imparters to learning guides, shifting the focus from "what to teach" to "how to organize learning"; second, from technology users to technology evaluators, able to judge the applicability and limitations of different AI tools in teaching; third, from teaching implementers to teaching researchers, exploring the balance between technological empowerment and humanistic education in practice. The improvement of teachers' AI literacy has become a key variable for the implementation of teaching reform.

6.3. Balancing technology and humanism

This is the core and most difficult issue in intercultural teaching reform. The essence of intercultural communication competence is understanding and communication between "people", not information exchange between "people and machines." Technology can efficiently simulate cultural differences and accurately feedback expression deviations, but it cannot replace human emotional resonance, value judgment, and cultural sensitivity in intercultural interaction. Future teaching reform should move toward a collaborative model of "AI + HI (Human Intelligence)": let AI handle standardized and quantifiable parts, and let teachers focus on emotional guidance, value shaping, and in-depth dialogue; let students gain richer learning experiences with the assistance of technology, but ultimately internalize intercultural competence in interaction with real "others." Only by finding a dynamic balance between technological empowerment and humanistic persistence can intercultural communication courses truly cultivate international talents with both digital literacy and cultural heritage.

7. Conclusion

The digital teaching reform of intercultural communication courses in the AI era is profoundly changing traditional teaching paradigms. From intelligent language processing to virtual reality, from generative AI to knowledge graphs, technological innovation provides diversified paths for cultivating intercultural competence. The in-depth integration of blended teaching models, the transformation to human-machine collaborative paradigms, and the reconstruction of interdisciplinary curriculum systems constitute the main directions of current teaching reform. The construction of a multi-modal evaluation system and the establishment of an intelligent diagnostic feedback mechanism guarantee the continuous improvement of teaching quality.

However, technological applications face multiple challenges, such as ethical risks, teachers' role transformation, and the balance between technology and humanism. Future teaching reform should give full play to the advantages of AI while adhering to the humanistic core of education, realizing the transformation of intercultural competence cultivation from "instrumental" to "competency-oriented." As Dervin and

R'boul noted, educators need to think about how to harness the potential of AI while maintaining learners' subjectivity in AI-assisted intercultural communication and education ^[34]. Only by striking a balance between technological empowerment and humanistic persistence can educators truly cultivate high-quality international talents with global vision, cultural sensitivity, and digital literacy.

Disclosure statement

The author declares no conflict of interest.

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