

AI-Enhanced Strategies for Developing Intercultural Communication Competence in Chinese University Students

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Abstract: In the era of globalization and artificial intelligence, the cultivation of intercultural communication competence has become an essential goal of higher education. This paper adopts a problem–strategy framework to explore how AI-enhanced teaching can effectively promote communication competence among university students. It first identifies key challenges in the current intercultural education system, including limited authentic communication opportunities, insufficient teacher literacy in AI technologies, a lack of integration between technology and pedagogy, and inadequate evaluation systems. To address these issues, a set of AI-enhanced strategies is proposed, such as immersive learning environments, intelligent feedback systems, and teacher digital empowerment. The discussion aims to provide theoretical insights and practical guidance for universities seeking to modernize intercultural communication education in the age of digital intelligence.

Keywords: Intercultural communication; AI-enhanced strategies; Higher education

Online publication: November 14, 2025

1. Introduction

Intercultural communication refers to the process of information exchange between individuals or groups from different cultural backgrounds through verbal, nonverbal, or other communicative means. It encompasses not only the transmission of language but also the interplay of cultural values, norms, beliefs, and behavioral patterns ^[1–5]. Research in intercultural communication focuses on achieving effective communication in the context of cultural differences and addressing misunderstandings or conflicts arising from these differences.

In an increasingly globalized world, effective intercultural communication is essential for fostering mutual understanding across diverse cultural contexts. The quality of such communication is influenced by various factors, including linguistic proficiency, non-verbal cues, and cultural awareness. As societies become more multicultural, individuals must navigate interactions with people from diverse cultural backgrounds and value

systems, making intercultural communication skills indispensable. These skills not only enhance students' ability to thrive in diverse social environments but also support personal growth and future career prospects.

However, cultivating intercultural communication competence in universities faces challenges. English remains the primary medium for intercultural communication courses, while instruction in other foreign languages is still developing. Given that Chinese is the native language, students often encounter linguistic and cultural barriers when engaging in intercultural exchanges. These challenges highlight the need for innovative approaches to teaching intercultural communication. In addition, in the AI and digital era, intercultural communication is transformed by digital platforms and AI-driven tools like real-time translation and virtual reality, fostering global interaction and cultural empathy. However, algorithmic biases, digital divides, and privacy concerns exacerbate cultural misunderstandings and inequalities. Research emphasizes culturally sensitive AI design and global governance to promote inclusive communication and equitable global dialogue ^[6-12].

Building on the facts, this paper follows a problem–strategy analytical framework. It first examines the major problems in current intercultural communication education and then proposes AI-enhanced strategies to address them, aiming to foster global-minded graduates who are both technologically literate and culturally competent.

2. Intercultural communication skills among university students

Chinese university students mainly study intercultural communication using English, depending on abilities like listening, speaking, reading, writing, and translating. Many can grasp complicated English terms, but few are comfortable using simple phrases in conversations with foreigners or sharing their ideas clearly. Most rely on dictionaries or apps to understand English texts, and only a small number can read or translate easily without help. When writing, few possess a wide range of words or write with ease. Few students can skillfully employ all four skills of listening, speaking, reading, and writing in academic talks or precise translations. This shows their English skills are too weak for effective intercultural communication, which complicates teaching these courses and building real-world skills.

To address weak speaking skills, universities can use AI-based language apps to help students practice daily expressions. For example, AI chatbots can simulate real-life conversations with foreigners, offering instant feedback on pronunciation, word choice, and cultural appropriateness. These tools allow students to practice in a low-pressure setting, building confidence and fluency in using English for intercultural communication. By integrating AI apps into language learning, students can improve their ability to engage in everyday conversations, bridging the gap between classroom learning and real-world interaction. Overall, Chinese university students need to improve their intercultural communication abilities.

Furthermore, Chinese university students only need to pass the CET-4 or CET-6 to graduate, but these tests do not fully prepare them for real-world intercultural communication. The skills needed to pass these exams often do not help students communicate effectively across cultures. This problem comes from the way universities teach, as most do not offer proper intercultural communication courses, and students are not taught why these skills matter. On top of that, there are a few intercultural activities on campus, and schools do not have enough policies or support to encourage them. This makes it hard for students to develop these important skills.

Crucially, Chinese university students, shaped by years of high school exam preparation, often focus on passing tests when studying English. They prioritize memorizing phrases over learning about other cultures, which helps them do well on tests but limits their overall growth. This approach makes it hard for them to use English

effectively for academic teamwork or intercultural understanding. For students not majoring in English, their focus on their main subjects leads them to study English in a rigid, test-focused way. They show little curiosity about other cultures' customs, traditions, or histories. As a result, their social interactions stay shallow, leaving little space for meaningful intercultural conversations.

3. Problems in the digital transformation of intercultural communication in the AI-age environment

First, different digital platforms and tools, created by various providers, often have unique system designs and data formats, causing major compatibility problems. In many universities, online platforms for international communication do not work smoothly with existing academic or student management systems. As a result, students must constantly switch between accounts and interfaces, which is inconvenient and lowers both user experience and communication efficiency.

Another key problem lies in the lack of unified data standards. Universities often use different data formats and quality levels when creating digital resources, leading to inconsistencies. For intercultural communication courses, the content organization, video formats, and subtitle settings vary widely between schools. This makes it hard to share or combine teaching materials. As a result, students struggle to access useful learning resources due to mismatched formats or low-quality data, which hurts their learning progress.

Second, the rapid iteration of information technologies, while presenting new opportunities for intercultural exchange through tools like AI-powered translation and virtual reality platforms, simultaneously exacerbates the challenges of digital transformation in this field. This fast-paced evolution demands continuous adaptation and learning from both educators and students, thereby increasing their cognitive load and operational difficulties. The inability of instructors to master new digital tools often leads to underutilization or operational mistakes, consequently diminishing the quality of instruction. At the institutional level, universities face sustained pressure to make substantial financial and human resource investments in upgrading digital infrastructure merely to keep pace with technological advancements.

In terms of pedagogy, traditional teacher-centered approaches still dominate, with insufficient interactivity and practicality. In many classrooms, teachers act mainly as knowledge transmitters, while students passively receive information, lacking opportunities for active thinking and engagement. Such teaching methods fail to stimulate students' interest and initiative, and are not conducive to cultivating intercultural communication competence. In intercultural communication courses, teachers often spend a large amount of time explaining theoretical knowledge, leaving limited time for practice-oriented activities such as case analysis, role-playing, and group discussions. As a result, although students may acquire certain theoretical understanding, they often struggle to apply it flexibly in authentic communication scenarios.

Furthermore, intercultural courses often lack strong practical components. On-campus activities are usually just simulations, which do not feel real or capture the complexity of actual intercultural situations. Without true cultural immersion or real-world challenges, students struggle to develop their skills fully. Off-campus opportunities, like international exchange programs or overseas internships, are also limited. Issues like few partnerships and safety concerns make these options rare. Even when partnerships with foreign schools or companies exist, poor communication and weak project management often lead to disappointing results, reducing the educational value of these programs.

Third, teachers lack the intercultural skills and digital knowledge needed to teach effectively. Teachers are key to using technology in intercultural communication courses, but some struggle with digital tools. Many do not know enough about educational technology or how to teach online, which makes it hard to use technology well in their classes. Some are good at traditional teaching but do not understand digital platforms or online tools, leading to less effective teaching and lower student engagement in online or mixed learning settings.

In addition, many teachers lack the intercultural skills and global awareness needed for international education. Some have little experience studying or working abroad, so they struggle to bring real-world cultural perspectives to their courses. Their lessons and examples often feel too theoretical or focus on local contexts, missing the true dynamics of global communication. Additionally, many teachers do not prioritize ongoing training in digital tools or intercultural teaching. Few universities offer structured programs to improve teachers' skills in digital literacy, modern teaching methods, or intercultural communication, leading to inconsistent teaching quality.

Moreover, effective digital intercultural education ideally demands an interdisciplinary team, combining expertise from linguistics, communication studies, IT, and psychology. However, the reality in many institutions is a structural barrier: faculty are often confined within departmental silos, which stifles the collaboration and resource-sharing necessary for pedagogical innovation. This segregation directly impedes the adoption of advanced technologies, such as AI-driven translation, learning analytics, and VR simulations in teaching. Consequently, the transformative potential of digital tools in intercultural learning remains largely untapped.

Of particular note is that the successful implementation of digital transformation in intercultural communication education also depends on the strength of institutional support and management systems. However, many universities have not yet established a comprehensive mechanism to coordinate policy planning, technical support, and quality assurance in this area. There is often a lack of long-term strategic planning for digital intercultural education, and institutional goals remain fragmented across departments. Without unified leadership and coordination, resources are dispersed, and the overall effectiveness of digital transformation efforts is weakened.

Financial support is another major constraint. The construction and maintenance of digital teaching platforms, smart classrooms, and intercultural communication laboratories require substantial investment. Yet, some universities allocate limited budgets for these purposes, prioritizing short-term projects over sustainable development. As a result, many digital facilities are outdated, and the infrastructure cannot fully meet the demands of advanced digital learning environments.

Additionally, the evaluation schemes for digital intercultural communication teaching are currently inadequate. A central problem lies in their predominant focus on quantitative indicators, for instance, platform usage and course completion rates, at the expense of qualitative dimensions such as a student's learning engagement, cultural adaptability, and communicative skills. Without robust scientific standards, the actual effectiveness of these digital initiatives cannot be accurately gauged.

Finally, a number of universities lack proper technical and administrative support for teachers and students. Some do not have dedicated tech teams to help teachers fix digital tool issues or improve online course designs. Students also struggle to get quick help with tech problems in online intercultural projects. Without strong support in policies, funding, infrastructure, and professional services, the shift to digital intercultural education in smart campuses will stay slow and uneven.

4. AI-enhanced strategies for developing intercultural communication competence in university students

To address the challenges outlined above, the author proposes six strategies informed by recent research on digital learning and intercultural communication ^[13–16].

4.1. Promoting autonomous and collaborative learning

University teachers can adopt the cloud-based learning model to build an autonomous learning environment for students and establish online learning platforms that foster self-directed learning. By creating cultural learning modules that include knowledge about foreign cultures and typical cases of intercultural communication, teachers can provide students with accessible and reliable learning channels. Moreover, by leveraging the advantages of the “Internet Plus” model, teachers can integrate online resources, collaborative learning, and classroom learning to achieve efficient instructional objectives.

Collaborative learning involves three key elements: learners, learning environments, and instructors. The learning environment includes spatial, hardware, and resource components—spatial settings provide venues for collaborative learning; hardware provides access to computer networks; and resource environments supply comprehensive learning materials. On this basis, teachers can employ multimedia technology to not only guide students toward autonomous learning but also highlight the interactive and participatory nature of learning, particularly in writing and intercultural communication ^[17].

4.2. Expanding opportunities for intercultural communication practice

In addition to online resources, autonomous learning, and pedagogical reform, cultivating students’ intercultural communication competence fundamentally depends on providing them with rich and authentic language practice opportunities. A positive learning atmosphere enhances students’ motivation and facilitates effective language use, thereby strengthening intercultural communication skills. During English teaching, instructors should create authentic communicative environments, simulate real-life interactional contexts, and allocate time and content between micro-lectures and multimedia instruction in a balanced manner. Through diversified and innovative teaching methods, teachers can offer students multiple opportunities to apply their linguistic and cultural knowledge in real-life scenarios. Depending on students’ actual proficiency levels, teachers may organize activities such as speech contests, simultaneous interpreting sessions, and translation internships, which allow students to use language in face-to-face situations. Such experiential learning not only stimulates interest but also significantly improves students’ cross-linguistic and intercultural competence.

4.3. Strengthening intercultural integration in class

In light of Kamalov et al. as well as Klimova and Chen, teachers are encouraged to maintain the leading role of students in the learning process while acting as facilitators and guides ^[18–19]. They must update outdated teaching philosophies, adopt innovative pedagogical models, and embed intercultural knowledge purposefully throughout instruction. In addition, teachers can design culturally immersive teaching scenarios aligned with specific course content to help students experience the vivid realities of intercultural communication. In multimedia-based, problem-based, or realia-based contexts, students gain more opportunities for communication and gradually free themselves from the constraints of native-language thinking. Within such contexts, teachers should emphasize linguistic appropriateness and guide students in comparing Chinese and Western cultures while guiding students to compare them and explain related course content.

To move beyond superficial behavioral observations and delve into the underlying cultural logics, instructors can integrate foundational theoretical frameworks. For instance, when analyzing communication styles, teachers can guide students to explore differences between direct and indirect expression. Here, concepts from Hall's theory of high- and low-context cultures can be introduced to illuminate these patterns: Chinese culture, being high-context, relies on implicit meanings and nonverbal cues, whereas American culture, as a low-context culture, favors explicit verbal expression ^[20]. Furthermore, to connect these communicative patterns to deeper cultural values, instructors can draw upon Hofstede's cultural dimensions theory ^[21]. Theoretical constructs such as individualism versus collectivism help explain the roots of observed behaviors. For instance, the directness valued in individualistic Western societies often stems from a focus on self-expression, whereas the indirectness common in collectivist Chinese culture prioritizes group harmony. By comparing real-life scenarios, such as how disagreements are expressed or how family decisions are made, students can see how broad values manifest in specific communication norms. This integrated approach not only deepens theoretical understanding but also equips students with practical strategies for culturally sensitive communication. By incorporating such cultural content into language teaching, teachers can help students internalize the relationship between language and culture, gradually forming a conscious awareness of intercultural communication.

4.4. Utilizing digital platforms for immersive intercultural experiences

To enhance intercultural competence, universities can use advanced digital technologies like virtual reality, augmented reality, and AI-powered simulation platforms. These tools let students engage in immersive intercultural experiences without leaving campus. For example, virtual reality can simulate international business meetings, multicultural classroom discussions, or cultural festivals, creating realistic social and communicative settings ^[22]. AI-based conversation partners or chatbots can provide instant feedback on language use, politeness, and cultural appropriateness, helping students practice adaptive communication in a safe environment. By integrating these digital platforms into course design, teachers can create learning opportunities that mirror real-world intercultural interactions. This approach improves practical skills and builds students' cultural empathy and awareness, preparing them for global professional and social settings.

To ensure these AI tools are used responsibly, universities should adopt ethical integration practices, in line with O'Regan and Ferri's recommendations ^[23]. AI tools like translation apps and chatbots should minimize cultural biases by training on diverse datasets, including Chinese contexts, and conducting regular bias audits. Platforms must respect cultural norms, such as Chinese high-context communication, to ensure respectful interactions, with teachers guiding students in their use. Strict privacy policies, including encrypted data storage and anonymized inputs, should protect user data in virtual reality and AI activities. Universities should also provide workshops on recognizing biases and using AI responsibly to foster equitable learning. These steps ensure AI tools support culturally sensitive, fair communication while enhancing students' intercultural skills.

4.5. Implementing continuous assessment and reflective practices

Assessment strategies should move beyond traditional exams to include ongoing evaluation of intercultural competence. Instructors can adopt reflective journals, peer reviews, project-based tasks, and e-portfolios as tools to track students' progress in both language proficiency and cultural understanding. For instance, students may analyze real-life intercultural encounters, reflect on their communication choices, and identify culturally informed strategies for improvement. Additionally, instructors can employ digital learning analytics to monitor participation,

engagement, and performance in collaborative online activities, providing timely feedback and tailored guidance. By embedding reflective and formative assessment into the curriculum, universities encourage students to critically examine their own assumptions, biases, and intercultural behaviors. This continuous reflection fosters self-awareness, adaptability, and lifelong learning skills essential for effective intercultural communication in diverse global contexts.

4.6. Establishing robust institutional support

To support the digital transformation of intercultural communication education, universities must build strong institutional frameworks to address the lack of technical and administrative support, limited funding, and poor policy coordination. Universities should establish dedicated technical support teams to help teachers and students troubleshoot digital tools, such as VR platforms and AI chatbots, and optimize online course designs, ensuring smooth integration with existing academic systems to reduce compatibility issues and improve user experience. Additionally, universities need to allocate budgets for building and maintaining smart classrooms, intercultural communication labs, and advanced digital tools like AI and VR systems, supporting sustainable development to keep pace with technological advancements. Coordinated policies, guided by a central leadership team, should align goals, share resources, and set standards for data formats and platform interoperability to reduce fragmentation and enhance efficiency. Furthermore, universities should offer regular training programs for teachers on digital literacy and intercultural teaching methods to help them use new technologies effectively and integrate cultural perspectives, improving teaching quality. By implementing these measures, universities can create a supportive environment that enables teachers and students to use digital tools effectively, fostering better intercultural communication skills.

5. Conclusion

In the context of the AI-age and smart campus environments, developing intercultural communication competence in university students requires a multifaceted approach. Current challenges, including limited language proficiency, outdated curricula, insufficient practical opportunities, and gaps in digital literacy, hinder students' ability to communicate effectively across cultures. This study highlights the importance of integrating digital technologies, autonomous and collaborative learning, culturally immersive teaching scenarios, and continuous reflective practices into intercultural communication instruction. By combining theoretical frameworks such as Hofstede's cultural dimensions and Hall's high- and low-context culture theory with practical, technology-enhanced strategies, educators can foster both students' cultural awareness and communicative competence. Implementing these strategies equips students with the knowledge, skills, and adaptive mindset necessary for successful intercultural interaction in increasingly globalized academic, social, and professional contexts. Ultimately, a systematic, digitally supported, and theory-informed approach can bridge the gap between classroom learning and real-world intercultural communication, preparing university students for meaningful engagement in diverse cultural environments. In sum, AI enhancement in intercultural education should be implemented through systematic teacher training and continuous assessment mechanisms to ensure sustainable competence development.

Funding

This work was supported by Guangdong Provincial Higher Education Quality and Teaching Reform Project: An

Exploration and Practice of an Intercultural Communication Teaching Model Based on the DFC Concept (1080), and by Zhaoqing University's Teaching Quality and Reform Project: Integration of the DFC Teaching Model in Intercultural Communication Curriculum Reform (zlgc2024050).

Disclosure statement

The author declares no conflict of interest.

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