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AI-Enabled Innovation in the Teaching Model for Intercultural Communication Courses

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Abstract: Intercultural competence is an important competence of graduate students. It affects students' ability to participate in transnational research collaboration and international academic conferences, understand cultural diversity, engage in intercultural cooperation, and respond to complex communicative situations. In response to the problems in the Intercultural Communication course, such as a lack of real contextual learning, limited personalized study, and insufficient feedback, this paper presents an AI-empowered "Three-Stage, Six-Loop" teaching model. The three stages are pre-class, in-class, and post-class learning; the six loops are diagnosis, immersion, collaboration, output, reflection, and evaluation. Meanwhile, based on the knowledge graph and generative-AI-based scenario simulation, the paper explains the feasibility of enhancing intercultural competence and learning proficiency, providing a practical paradigm for the development of a smart course in Intercultural Communication for graduate students.

Keywords: Artificial intelligence; Intercultural communication; Graduate students; Teaching model; Smart course

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1. Introduction

Intercultural communicative competence (ICC) is an important ability for graduate students because of the increasing development of artificial intelligence and frequent international exchanges. Communicative competence can be reflected in students' usual scenarios, such as participating in international academic conferences, multicultural life, and intercultural communication. However, in real intercultural communication teaching practice, the course faces several challenges: first, the course relies heavily on textbooks and theoretical lectures, lacking real intercultural contexts, leaving students with limited opportunities to experience actual communicative situations. Second, Students have limited practical competence and find it difficult to apply theoretical knowledge in practice. Third, the course assessment focused on the final examination rather than the learning process and students' performance and achievements. Fourth, a systematic connection between course, teaching, students, assessment and AI should

be built to support personalized learning and precise teaching.

Therefore, it is indispensable to develop an AI-assisted teaching model and its implementation mechanisms from the perspective of course design.

2. Literature review

In response to the above questions, domestic researchers and experts abroad have conducted several explorations. The existing studies mainly focus on two aspects: theoretical discussions and application of AI in real situations. Zhu Zhiting and his colleagues pointed out how intelligent technologies can promote educational innovation through the development of AI [1]. At the practical level, related research has explored smart classrooms, adaptive learning, speaking assessment, writing feedback, virtual simulation, grading, reflection, etc. Liu Peixin examined the usage of AI-driven nonverbal-information enhancement in virtual situational language learning, offering a useful case for technology-supported intercultural communication learning [2]. Jiao Jianli discussed both the challenges and opportunities ChatGPT brings for education, highlighting the necessity to ponder both the usability of AI tools and their potential implications [3]. Overall, existing research has laid both theoretical and practical foundations for applying AI in intercultural communication teaching. However, their findings need to be interpreted in relation to specific course contexts because of the varied learners, teaching processes, technological tools, and assessment methods. For graduate intercultural communication courses, further studies are needed to explore how AI can be transformed from an assisted tool into a teaching-support mechanism, combined with curriculum design, learning tasks, assessment methods, and feedback.

Based on the above research, this paper aims to address three questions. First, how to design a scientific and systematic teaching model to meet the intercultural communicative competence goals of graduate education? Second, how to combine a course knowledge graph and generative-AI-based scenario simulation to support students' differentiated and sustained learning? Third, how to construct an assessment method that can monitor both learning processes and learning outcomes? In response to these questions, this paper proposes a "Three-Stage, Six-Loop" teaching model and interprets its structure, implementation, and assessment design. This research has both theoretical and practical significance. First, it can elevate graduate students' intercultural communicative competence through real intercultural communication scenarios and immersive intercultural communication experiences in intercultural cases. Second, through learning analysis and feedback, it can achieve continuous monitoring and accurate assessment of the learning process, propelling a change from experience-driven to data-driven teaching. Third, the construction of smart courses can enhance the openness and shareability of courses and optimize the allocation of teaching resources, and then broaden access to high-quality educational resources. Finally, this research helps explore an approach for integrating artificial intelligence into intercultural communication courses, offering a practical model that can inform teaching reform in graduate education.

3. Teaching implementation

This study designs an AI-supported teaching approach in response to graduate students' needs for international academic exchange and professional communication. It addresses limited contextual experience, restricted classroom interaction, insufficient personalized support, and narrow assessment dimensions. The following discussion covers instructional challenges, implementation methods, and model design.

The current teaching model commonly combines reading, case analysis, and student role-play, lacking

intercultural contexts and sufficient dynamic interaction. It is difficult for students to engage continuously with intercultural communication scenarios because of the insufficiency of class time, case resources, authentic intercultural contexts, and deep participation of students. To deal with the above problems, the project intends to introduce intelligent technology to build "AI-based virtual intercultural role interaction" tasks. With the help of "AI learning companions" with different national cultural backgrounds, personality traits, and language styles, students can interact with AI characters through text or voice and participate in real interaction and confrontation training in highly simulated contexts such as simulated business negotiations, international academic conferences, and transnational teamwork, effectively compensating for the lack of authentic contexts and enhancing their practical and adaptive intercultural communicative competence.

If classes rely mainly on teacher lectures and PowerPoint presentations, students would remain at the surface level of conceptual understanding and have insufficient opportunities to practice situational judgment, strategy selection, and communicative adjustment, making it difficult to cultivate authentic intercultural communicative competence. To address such issues and enhance interaction and continuity across learning tasks, this project intends to develop artificial intelligence technology (such as dialogue generation and virtual scenario simulation) to build a "human-machine collaborative" interactive teaching model and achieve immersive learning. In a sequence of "understand the problem—attempt communication—analyze feedback—practice again.", AI dialogue, case discussion, and group collaboration can be combined. Teachers set learning aims, provide theoretical scaffolding, and evaluate student performance, while AI primarily supports scenario generation, dialogue practice, feedback, etc.

Graduate students have obvious individual differences in language proficiency, cultural background, and research interests, etc., therefore, the current course and text materials may not adequately meet their requirements. Teaching content and pace are uniform, ignoring student differences; students' learning paths are single, making personalized expansion difficult. To solve the problem of "insufficient personalized learning support", the project intends to use artificial intelligence for learning data analysis and learner profile construction, providing differentiated and adaptive learning support. Learner profiles should inform instructional adjustments rather than serve as fixed judgments of students' abilities. When personal learning data are involved, the purposes of data use, access permissions, and retention arrangements should also be made clear.

The current course evaluation is mainly based on a final paper or examination, which alone cannot fully capture students' communication, responding, explaining, managing conflict, and adjusting strategies during intercultural interaction, making it difficult to reflect students' intercultural communicative competence and learning process comprehensively. It emphasizes results rather than process and makes it difficult to evaluate students' actual performance in intercultural communication. To address the issue of a "single evaluation system and lack of process evaluation", the project aims to improve formative and summative assessment by integrating process evaluation, such as participation, interaction, and performance, with final evaluation to achieve dynamic tracing and intelligent feedback. AI feedback should be treated as supplementary assistance. The judgments should be based on explicit assessment and reviewed by teachers, rather than treating automated analyses as objective evaluation of intercultural communicative competence.

In the specific implementation process, Design-Based Research can be used to develop and refine the "AI-based virtual intercultural role interaction" tasks and carry out iterative cycles of "design—implementation—feedback—revision" to improve the teaching model and technology application scheme continuously. Meanwhile, incorporated with action research, teaching practice will be continuously carried

out in real classroom contexts, with classroom observation, teacher reflection, and student feedback informing adjustments to instruction, thereby achieving deep integration of research and teaching. To verify the effectiveness of the teaching reform, the project will also adopt experimental research, selecting an experimental class and a control class for comparison, and analyzing pre-test and post-test data to examine students' improvement in intercultural communication competence, adaptability, and learning engagement.

Besides, the project will use a combination of quantitative and qualitative methods to evaluate the implementation of the teaching process. The project will conduct quantitative analysis of the learning behavior data recorded by the AI system, including pre- and post-test results, task scores, participation records, platform-use logs, interaction frequency, dialogue quality, and task completion, so as to achieve dynamic assessment and precise feedback on students' learning processes. Meanwhile, it will be conducted using qualitative research methods, including classroom observations, learning journals, interviews, and student work to provide a multidimensional interpretation of students' learning experiences and ability changes. Through a combined quantitative and qualitative method, the project will fully evaluate the actual effects and application value of AI-empowered teaching, thus providing a replicable and practical method for the promotion of the smart course "Intercultural Communication" for graduate students.

Based on the above approach, the project proposes an AI-empowered "Three-Stage, Six-Loop" teaching model. The three stages refer to pre-class, in-class, and post-class learning; the six loops are diagnosis, immersion, collaboration, output, reflection, and evaluation. The students' prior knowledge and learning needs will be diagnosed before class. Contextual immersion, group collaboration, and task output will be performed during the teaching process. After class, reflection and evaluation will help students review their learning outcomes, and the feedback informs the next cycle of instructional design. This forms a cycle of "teaching guided by learning needs, learning promoted through contextualization, and learning guided by assessment" (see **Figure 1**).

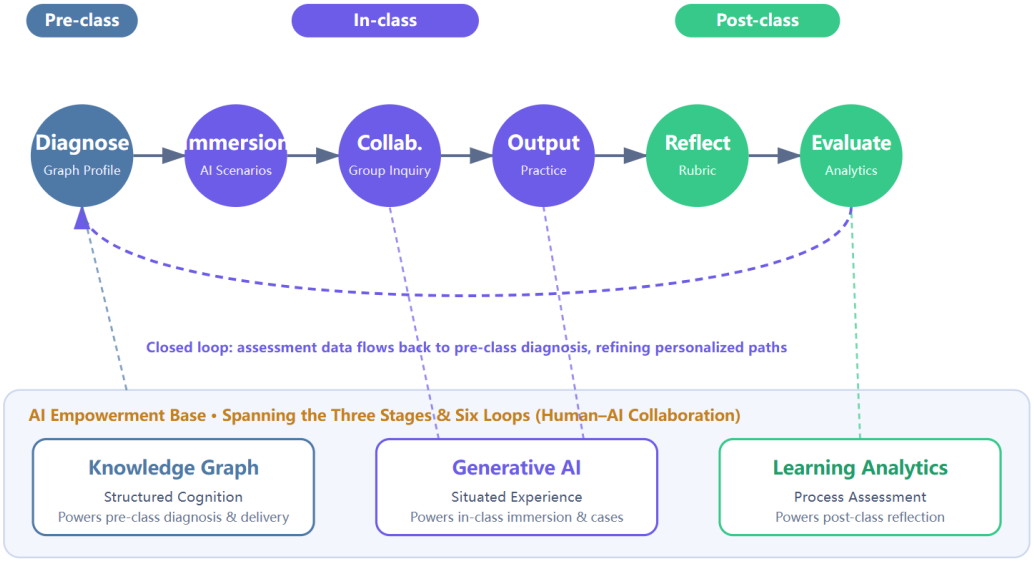


Figure 1. AI-empowered Three-Stage, Six-Loop Teaching Model for the Graduate Course in Intercultural Communication. Three stages: pre-class, in-class, and post-class. Six loops: diagnosis, immersion, collaboration, output, reflection, and evaluation.

Meanwhile, based on the knowledge graph, the paper integrates the fragmented knowledge points into a coherent knowledge structure and visualizes their relationships, thereby supporting personalized learning. The graph deconstructs the "Intercultural Communication" course into 11 modules and 81 knowledge points, connected into a network structure through two types of relationships: "containment" and "association". Solid lines indicate hierarchical containment, while dashed lines represent theoretical relationships across modules (see **Figure 2**).

In real learning situations, combined with course objectives and students' learning progress, teachers can use the knowledge graph to recommend relevant resources and extension tasks to students. Learner profiles and personalized recommendations should be gradually refined in actual platform functions and data-analysis results. As a result, learner profiling and learning data analysis are constructed to provide personalized learning resources and path recommendations, achieving precision teaching.

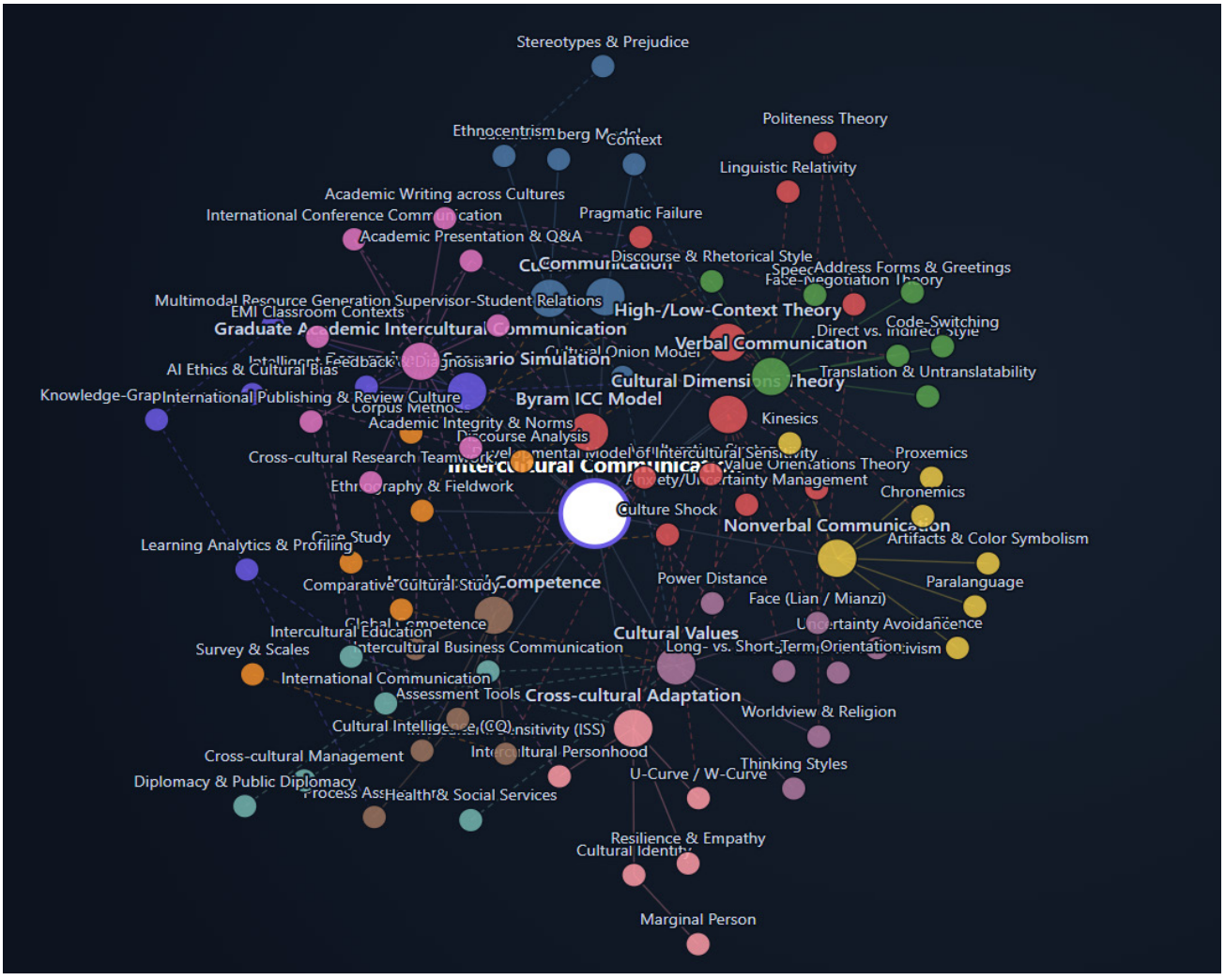


Figure 2. Knowledge Graph for Intercultural Communication.

Further development and research around the "Three-Stage, Six-Loop" model can be organized into five tasks.

The first task is to build a theoretical framework and teaching design. It aims to review research on intercultural communication theory, educational technology, and AI-assisted learning. It will clarify teaching objectives, content, learning activities, assessment criteria, and specify the division of responsibilities

among teachers, students, and AI. The second task is to design and develop a smart course platform. Based on the available technical conditions, the project prioritizes the course knowledge graph, resource repository, learning-process records, and feedback support. As the project progresses, the competency graph and problem graph can be developed in stages. The third task is to develop course resources and construct learning content. The project focuses on the main themes of intercultural communication, such as value differences, verbal and nonverbal communication, stereotypes and prejudice, etc., and develops a series of digital teaching resources deeply integrated with platform functions, including knowledge units, cases, and assessment methods. The fourth task is to conduct teaching practice and outcome evaluation. Based on a clearly specified research plan, the program aims to use questionnaires, in-depth interviews, learning process data, and student work to assess changes in knowledge, contextual judgment, communication strategies, and reflective ability. Other approaches include pre-test, post-test, and process evaluation of teaching effectiveness, comprehensively examining changes in students' cognitive, affective, and skill dimensions. The fifth task is to research the application model and dissemination strategy. The project aims to summarize and refine the effective application model, implementation path, and teacher training plan for the AI-empowered "Intercultural Communication" smart course, developing an implementation guide for similar courses and providing a reference for promoting and applying the results on a wider scale.

Compared with teaching procedures dominated by lectures and pre-scripted role-play, this model explores approaches to integrate AI into the Intercultural Communication course from four aspects: scenario design, learning support, assessment, and the division of responsibilities between teachers and students. Its main features are as follows.

In the traditional class, students' role-play exercises lack real cultural clashes. To address this situation, the project builds a scenario-based platform that blends virtual and real elements, where students can practice in a more dynamic, immersive setting. Learning is guided by specific scenarios and integrates virtual and real-world contexts. Students can interact with AI companions that play the role of people from other cultures instead of working through fixed scripts and texts. For example, students can actually feel the disorientation of culture shock, which helps shorten the gap between learning concepts and using them. Compared with real interaction, simulation interactions are controllable, repeatable, and easier to review.

Graduate students' learning requirements are related to their disciplines, research topics, and future jobs. To solve such a problem, the project can design tasks according to disciplinary backgrounds. Within common course objectives and assessment criteria, teachers and students can use AI to generate highly specialized intercultural background materials and conflict cases according to specific professional backgrounds. This breaks the constraints of unified textbooks and truly realizes personalized, professional content supply for each individual.

Assessment in the Intercultural Communication course has always been one of the toughest parts of teaching. The usual method, a final paper, cannot accurately measure students' true communicative ability. This project takes a different approach and builds an AI-assisted evaluation system that reconstructs a new paradigm shifting toward multidimensional process evaluation. It not only records students' textual answers but also analyzes vocabulary diversity, response latency, and degrees of euphemism in students' communication through speech, semantics, and even emotional cues. Out of all that, the system automatically draws up a personal radar chart of each student's intercultural competence, replacing single experiential evaluation with objective digital profiling and achieving immediate, scientific, and precise evaluation.

The project deploys a dedicated "AI teaching assistant" and builds a teacher-led human–AI

collaboration, breaking the time boundary of the 45-minute class. AI tools can provide practice materials before class, support scenario-based interaction during class, and help students review their performance and find extension resources after class, thereby increasing opportunities for independent practice. This collaboration model can not only answer students' after-class questions about intercultural theory at any time and recommend reference books but also provide personalized tutoring for each student. Without increasing teachers' basic workload, it achieves the organic balance between common education and personalized cultivation.

This study plans to develop course resources and teaching support around the "Three-Stage, Six-Loop" model, expecting to produce a series of teaching reform outcomes with demonstrative and scalable value. Expected outputs include course designs and task systems, a syllabus, a course knowledge graph, a case library, intercultural scenarios and AI interaction tasks, assessment rubrics, and learning-analytics templates. Depending on implementation progress, the project may also produce a teaching-reform report, related academic papers, or a practical guide. In terms of research outcomes, it plans to produce teaching reform research reports, related teaching reform papers, and practical guidelines, providing replicable experience for similar courses.

The application plan can begin with a pilot application in the graduate Intercultural Communication course at Xi'an Technological University, and gradually promote it to graduate courses in related majors based on implementation results, realizing expansion from a single course to a course cluster. During the pilot application, the project will record implementation conditions, teacher workload, student participation, and technical difficulties, and in turn revise the teaching plan. At the same time, through course-sharing resources and teaching experience sharing, the course can be further expanded.

The expected value of the project lies in giving students more opportunities to participate in simulated intercultural situations, supporting personalized practice and formative feedback, and encouraging teachers to reflect on course design and the use of digital tools. Its actual effects on intercultural communicative competence, learning engagement, and instructional efficiency can be examined through continuous classroom practice and data analysis. The project will significantly enhance students' intercultural communicative competence and adaptability in real or simulated contexts and increase student participation and learning engagement. Through AI-supported personalized learning and process evaluation, it can also improve learning efficiency and teaching precision. At the same time, the project will also promote the improvement of teachers' teaching philosophy and digital literacy, transforming from traditional lecture-based classes to smart, interactive ones.

4. Conclusion

Addressing insufficient contexts, limited personalized support and lack of formative feedback in graduate-level Intercultural Communication courses, the paper constructs an AI-empowered "Three-Stage, Six-Loop" teaching model and explains its implementation in terms of instructional stages, the course knowledge graph, learning support, and assessment design. The model offers a framework for integrating AI into intercultural communication education for graduate students to enhance their intercultural communicative competence and comprehensive ability. Future research can further expand the scope of empirical research, test the applicability and effectiveness of this teaching model in different disciplinary backgrounds and institutional

environments, and provide more sufficient practical evidence for human-machine collaborative education.

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Disclosure statement

The author declares no conflict of interest.

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