Research on Cross-Cultural Critical Thinking Teaching in Applied Undergraduate English Courses from the Perspective of Artificial Intelligence

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Abstract: This paper explores innovative methods for teaching cross-cultural critical thinking in applied undergraduate English courses supported by artificial intelligence (AI) technology. First, it analyzes the current application of AI technology in English teaching and its potential in cross-cultural critical thinking instruction. Next, it explains the theoretical foundations of cross-cultural communication skills and critical thinking abilities, and proposes teaching design and implementation strategies that incorporate AI technology. Finally, by examining specific teaching practice cases, it assesses the effectiveness and issues of AI technology in cross-cultural critical thinking teaching. The study shows that AI technology can provide diversified learning resources and personalized learning paths, effectively enhancing students' cross-cultural communication skills and critical thinking abilities.

***Keywords*:** Artificial Intelligence; Applied Undergraduate; English Courses; Cross-Cultural Critical Thinking; Teaching Research

1. Introduction

In the context of globalization, cross-cultural communication skills and critical thinking abilities have become important training objectives in applied undergraduate English courses. However, traditional teaching methods have many limitations in developing these two abilities. With the rapid development of AI technology, its application in the field of education has become increasingly widespread, bringing new opportunities to English teaching. Through intelligent teaching tools and personalized learning paths, AI technology is expected to solve some problems in traditional teaching and improve teaching effectiveness. This study aims to explore how to use AI technology for cross-cultural critical thinking teaching in applied undergraduate English courses, analyze its potential and practical application effects, and propose corresponding teaching strategies and evaluation methods. Through in-depth research and practical case analysis, this study hopes to provide valuable references and guidance for future teaching practices.

2. Integration of Artificial Intelligence and Applied Undergraduate English Courses

2.1 Current Application of AI Technology in English Teaching

The application of AI technology in English teaching has shown promising results, covering aspects such as classroom instruction, student self-study, and assessment. For example, natural language processing technology can help develop intelligent writing assistant tools that correct students' grammar and vocabulary errors in real-time; machine learning algorithms can analyze students' learning behaviors and provide personalized learning suggestions; intelligent recommendation systems can push suitable learning resources and tasks based on students' learning progress and interests[1]. These applications not only improve teaching efficiency but also enhance students' learning experience and outcomes.

2.2 Characteristics and Needs of Applied Undergraduate English Courses

Applied undergraduate English courses emphasize practicality and the cultivation of practical skills, with curricula typically including language skills training, professional English applications, and cross-cultural communication. Students need to use English for communication and critical thinking in real-life contexts, so course design must balance the enhancement of language skills and cross-cultural communication skills. Additionally, with the acceleration of globalization, the demand for versatile talents with cross-cultural critical thinking abilities is increasing, further prompting applied undergraduate English courses to focus on cross-cultural perspectives and critical thinking skills in their teaching.

2.3 Potential of AI in Cross-Cultural Critical Thinking Teaching

AI technology has immense potential in cross-cultural critical thinking teaching. By providing diverse cultural materials

and simulating cross-cultural communication scenarios, AI can help students better understand the thinking styles and values of different cultural backgrounds. Moreover, intelligent learning systems can tailor personalized learning paths based on students' learning characteristics and needs, ensuring that each student receives the most suitable learning resources and tasks. This not only improves teaching effectiveness but also stimulates students' interest and initiative in learning, thereby enhancing their cross-cultural communication skills and critical thinking abilities[2].

3. Theoretical Foundations and Methods of Cross-Cultural Critical Thinking Teaching

3.1 Theoretical Foundations of Cross-Cultural Communication Skills

The cultivation of cross-cultural communication skills is an essential part of cross-cultural critical thinking teaching. Bennett's Developmental Model of Intercultural Sensitivity (DMIS) emphasizes that by experiencing the stages from unconscious cultural differences to conscious cultural adaptation, individuals can gradually enhance their cross-cultural communication skills. Byram's model of intercultural communicative competence posits that cross-cultural communication skills comprise four dimensions: attitudes, knowledge, skills, and critical cultural awareness[3]. These theoretical models provide a solid foundation for cross-cultural critical thinking teaching, guiding the setting of teaching objectives and content.

3.2 Cultivation and Assessment of Critical Thinking Skills

Critical thinking skills are crucial for students to effectively communicate and solve problems in cross-cultural interactions. Critical thinking encompasses various abilities, such as analysis, evaluation, and creative thinking, and its cultivation requires systematic instructional design and diverse teaching methods. When assessing critical thinking skills, various tools can be used, such as case studies, debates, and project reports, to comprehensively evaluate the depth and logic of students' thinking. By integrating AI technology, dynamic assessment and feedback on students' critical thinking skills can be achieved, further enhancing teaching effectiveness[4].

3.3 Design and Implementation of Cross-Cultural Critical Thinking Teaching Methods

The design of cross-cultural critical thinking teaching methods should combine theoretical foundations with actual teaching needs, employing various teaching methods such as discussion, case analysis, and project-based learning. The discussion method cultivates students' critical thinking and expressive abilities through group discussions and classroom debates; the case analysis method helps students understand behaviors and thinking patterns in different cultural contexts through the analysis of real cases; the project-based learning method enhances students' cross-cultural communication and teamwork skills through the design and implementation of cross-cultural projects[5]. With AI technology, these teaching methods can become more efficient and personalized, further improving teaching outcomes.

4. Practice and Evaluation of AI-Assisted Cross-Cultural Critical Thinking Teaching

4.1 Selection and Application of Intelligent Teaching Tools

Choosing suitable intelligent teaching tools is crucial in cross-cultural critical thinking teaching. Currently, there are various AI-driven language learning applications available on the market, such as Duolingo and Grammarly, which can help students with personalized language training. Additionally, virtual reality platforms like Google Expeditions and AltspaceVR can simulate real cross-cultural communication scenarios, providing an immersive learning experience. Intelligent assessment systems like Edmodo and Knewton can provide instant feedback and evaluation based on students' learning data[6]. Effective application of these tools can not only enhance teaching efficiency but also provide students with richer and more diverse learning resources, thus strengthening their cross-cultural critical thinking skills.

4.2 Evaluation of Teaching Effectiveness and Feedback Mechanisms

An effective evaluation of teaching effectiveness and feedback mechanisms is crucial for ensuring teaching quality. In cross-cultural critical thinking teaching, evaluation should not only focus on students' language skills but also assess their cross-cultural communication and critical thinking abilities. A multidimensional evaluation system can be adopted, including classroom performance, assignment quality, and project outcomes. By integrating AI technology, real-time analysis of students' learning data can be achieved, providing personalized feedback. For example, intelligent assessment systems can analyze students' writing and speaking performances through natural language processing technology and provide specific improvement suggestions[7]. Additionally, online surveys and learning logs can be part of the feedback mechanism to help teachers understand students' learning experiences and needs, further optimizing teaching design.

4.3 Practical Cases and Effectiveness Analysis

In actual teaching, the application of AI technology has yielded significant results. For example, in the applied undergraduate English courses at a certain university, teachers have conducted a series of cross-cultural critical thinking teaching activities by integrating intelligent teaching tools and virtual reality platforms. Through these activities, students have not only improved their language skills but also made significant progress in cross-cultural communication and critical thinking abilities. Specific cases include students engaging in cross-cultural communication simulations via virtual reality platforms, completing cross-cultural themed essays using intelligent writing assistant tools, and conducting self-assessments and improvements through intelligent assessment systems. Effectiveness analysis of the teaching practices shows that the application of these intelligent tools has greatly enhanced students' learning motivation and outcomes, proving the tremendous potential of AI technology in cross-cultural critical thinking teaching[8].

5. Conclusion

This study explores the application of AI technology in cross-cultural critical thinking teaching within applied undergraduate English courses, revealing its great potential in improving teaching effectiveness and student abilities. First, the current application of AI technology in English teaching and the needs for cross-cultural critical thinking teaching were analyzed, highlighting AI's advantages in providing diverse cultural materials, simulating cross-cultural communication scenarios, and offering personalized learning paths. Next, based on the theoretical foundations of cross-cultural communication and critical thinking skills, teaching design and implementation strategies incorporating AI technology were proposed. Finally, through specific teaching practice cases, the practical application effects of AI technology in cross-cultural critical thinking teaching were evaluated, demonstrating its effectiveness in enhancing students' cross-cultural communication and critical thinking abilities. This study provides valuable references and guidance for future cross-cultural critical thinking teaching and suggests further exploration of AI technology's possibilities in education.

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