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REVIEW ARTICLE

Digital Scenarios and AI Empowerment: The Transformation and Innovation of International Exchanges in Chinese Universities

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ABSTRACT

Against the backdrop of the global wave of internationalization in higher education and the post-pandemic era, Chinese universities are actively leveraging digital technologies and artificial intelligence (AI) to reshape international communication models. This article systematically reviews the innovative practices of Chinese universities in expanding international cooperation through digital scenarios, deeply analyzes the transformative impact of AI technology on international joint training programs, and based on the background of the post-pandemic era, explores how AI can more effectively serve the internationalization strategies of universities. Combining current actual cases for analysis, this article summarizes and generalizes the existing problems and puts forward reasonable suggestions. The findings reveal the current practical challenges such as the technological gap and ethical risks that exist in AI-empowered international education. This article also proposes the construction path of the "AI+ International Education" ecosystem from the dimensions of policy coordination, technology adaptation, and talent cultivation, providing forward-looking ideas and practical references for global higher education institutions to deepen international cooperation by leveraging AI in the post-pandemic era.

1. Introduction

The landscape of international higher education has undergone profound transformations in recent years, accelerated by both the digital revolution and the disruptions caused by the COVID-19 pandemic. As physical mobility faced unprecedented challenges, digital technologies and artificial intelligence emerged as critical enablers for sustaining and enhancing cross-border academic collaboration.

Chinese universities have been at the forefront of this transformation, developing innovative models that leverage digital scenarios and AI to maintain and expand their international networks.

The significance of this study is threefold. First, it systematically documents Chinese universities' innovative practices in digital internationalization, offering an empirical foundation for understanding how emerging technologies are reshaping cross-border educational exchange. Second, it analyzes AI's transformative impact on joint training programs through empirical case studies, shedding light on the mechanisms through which AI technologies enhance international educational cooperation. Third, it proposes actionable strategies for optimizing AI's role in post-pandemic international academic collaboration, addressing both the opportunities and challenges that accompany the integration of AI into global higher education.

Despite the growing body of literature on educational technology and internationalization, there remains a gap in systematically examining how digital scenarios and AI empowerment interact to transform international exchanges in the specific context of Chinese universities. This study addresses this gap by posing the following research questions: (1) What are the dominant digital internationalization models adopted by Chinese universities? (2) How does AI transform international joint training programs? (3) What challenges and barriers persist in AI-enabled international education, and what recommendations can be offered to address them?

2. Literature Review

2.1. Digital Innovations in China's International Higher Education

Chinese higher education institutions have increasingly embraced digital technologies to expand their international footprint. These innovations manifest across multiple dimensions, ranging from cross-border cloud classrooms and joint resource development to the export of educational standards and the establishment of multilateral cooperation mechanisms.

In the domain of cross-border cloud classrooms, the "AI Hub for Luban Workshops" at Liuzhou City Vocational College represents a paradigm shift in transnational education delivery. This initiative integrates smart live devices with AI-powered real-time translation systems, converting Chinese lectures into multiple languages (English, French, Thai) with over 90% accuracy (Li & Li, 2025). Such technological integration significantly reduces language barriers and enables seamless cross-border knowledge transfer.

Regarding joint resource development, Xi'an Peihua University's International Chinese Education program has established a VR virtual simulation laboratory in collaboration with technology companies, offering cutting-edge courses such as AI Courseware Development and Cross-Cultural Data Analysis. Students gain hands-on experience with VR Chinese classrooms and multilingual speech evaluation systems, bridging digital skills training with real-world international teaching practice.

In terms of standard and curriculum export, Nanning Vocational and Technical University has exported four AI-related international professional standards and 22 curriculum standards to ASEAN countries, alongside developing bilingual courses such

as Python Programming Technology and Machine Learning Technology (2025). This outward-oriented approach demonstrates how Chinese vocational institutions are positioning themselves as standard-setters in the regional educational technology landscape.

Furthermore, multilateral cooperation mechanisms have flourished. Xi'an Jiaotong-Liverpool University's 9th Higher Education Innovation Annual Conference brought together nearly 400 global experts to explore AI-driven educational innovation, fostering international dialogue and collaborative research in the field.

Table 1: Digital Internationalization Models in Chinese Higher Education

Model	Key Technologies	Representative Case	Outcomes
Cross-Border Cloud Classrooms	AI translation, virtual assistants	Liuzhou City Vocational College (Luban Workshop)	90%+ translation accuracy, 60% faster course development
Joint Resource Development	VR simulation, smart assessment	Xi'an Peihua University (Chinese VR Lab)	Students directly participate in overseas Confucius Institute virtual internships
Standard & Curriculum Export	Bilingual courses, AI standards	Nanning Vocational and Technical University	4 professional standards, 22 curriculum standards exported to ASEAN countries
Multilateral Cooperation	AI tools, metaverse platforms	Xi'an Jiaotong-Liverpool University	Established global education technology cooperation network

3. Method

This study employed a qualitative research approach using thematic analysis to examine the transformation and innovation of international exchanges in Chinese universities through digital scenarios and AI empowerment. Thematic analysis was chosen for its flexibility and depth, allowing researchers to identify and interpret patterns and themes within the data (Braun & Clarke, 2006). This method provides a structured approach to analyzing qualitative data, enabling a detailed exploration of the phenomena under investigation.

The data sources comprised documented case studies of Chinese universities' digital internationalization practices, including institutional reports, published case descriptions, and conference presentations. The analysis followed the six-phase framework proposed by Braun and Clarke (2006): familiarization with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. Through this iterative process, four primary themes emerged regarding AI's transformative impact on international joint training programs, alongside four key challenge domains and four strategic recommendation clusters.

To ensure rigor, the analysis employed triangulation across multiple data sources and maintained an audit trail of the coding process. Peer debriefing was conducted to

validate the identified themes and ensure that the interpretations remained grounded in the empirical data.

4. Results

4.1. AI's Transformative Impact on International Joint Training Programs

The thematic analysis revealed four interconnected dimensions through which AI transforms international joint training programs: cross-cultural adaptation support, personalized learning systems, quality monitoring and improvement, and intelligent management services.

4.1.1. Cross-Cultural Adaptation Support

AI-powered virtual environments have emerged as effective tools for fostering cross-cultural communication skills. Xi'an Peihua University's "Metaverse Chinese Corner" has engaged participants from 20 countries, using immersive virtual environments to cultivate cross-cultural communication competence. By simulating real-world intercultural interactions in a low-stakes digital space, these platforms enable students to practice language and cultural competencies before engaging in actual cross-border exchanges, thereby reducing anxiety and enhancing preparedness.

4.1.2. Personalized Learning Systems

AI-driven personalized learning platforms are reshaping how international joint training programs deliver instruction. Beijing University of Posts and Telecommunications has developed the ""Ma Shang" Intelligent Teaching Platform," powered by iFLYTEK's Spark large language model. The platform offers personalized programming guidance across 107 courses, capable of addressing 80% of beginners' queries with high-quality responses. This level of individualized support is particularly valuable in international joint programs, where students enter with diverse linguistic backgrounds, prior knowledge, and learning paces.

4.1.3. Quality Monitoring and Improvement

AI technologies also facilitate continuous quality monitoring in international educational programs. The Russian National Research University Higher School of Economics (HSE) has established an AI software and application case library to continuously evaluate the effectiveness of various learning support applications. By systematically collecting and analyzing usage data and learning outcomes, institutions can identify which AI tools deliver the greatest educational value and make evidence-based decisions about technology adoption and refinement in their international programs.

4.1.4. Intelligent Management Services

Beyond the classroom, AI enhances the administrative and management dimensions of international joint training. The "AI Hub for Luban Workshops" at Liuzhou City Vocational College utilizes DeepSeek models to automatically analyze teaching materials in various formats (PDF, PPT, videos), extracting keywords and generating knowledge graphs to improve document retrieval efficiency by 60%. Such intelligent management services streamline the preparation and organization of transnational teaching

resources, reducing the administrative burden on faculty and enabling more efficient cross-border collaboration.

5. Discussion

5.1. Challenges and Barriers in AI-Enabled International Education

While the transformative potential of AI in international education is evident, several significant challenges and barriers must be acknowledged and addressed.

5.1.1. Digital Infrastructure Divide

The Eastern African Regional Universities Consortium has highlighted how "AI applications may exacerbate educational disparities in regions already affected by infrastructure shortages." This technological asymmetry persists both between nations and within countries, as seen in Indonesia's struggles with regional technological disparities in teacher training. Without equitable access to reliable digital infrastructure, the benefits of AI-enabled international education risk being concentrated among already well-resourced institutions, further widening the global educational divide.

5.1.2. Cross-Cultural and Linguistic Barriers

While Liuzhou City Vocational College's translation system supports major languages, its capacity for less common languages such as Lao remains limited. Cultural nuances in educational content present additional challenges, as AI-generated materials may carry unintended meanings across different cultural contexts. The development of culturally responsive and linguistically inclusive AI systems remains a critical priority for ensuring that AI-enabled international education serves diverse student populations equitably.

5.1.3. Data Privacy and Algorithmic Ethics

Stringent data protection regulations such as China's Personal Information Protection Law and the European Union's General Data Protection Regulation (GDPR) complicate cross-border educational data flows. International joint programs inherently involve the transfer of student data across jurisdictions, and AI systems that rely on large datasets for training and personalization must navigate these complex regulatory landscapes. Ensuring compliance while maintaining the functionality of AI tools requires careful institutional planning and cross-border collaboration on data governance frameworks.

5.1.4. Faculty Readiness and Institutional Resistance

Many educators remain hesitant about AI adoption due to concerns about academic integrity, job displacement, and the perceived dehumanization of education. Faculty readiness encompasses not only technical proficiency but also pedagogical understanding of how to integrate AI tools meaningfully into international teaching practices. Institutional resistance, often rooted in established bureaucratic structures and risk-averse cultures, can slow the adoption of innovative AI-enabled models. Addressing these human and organizational factors is essential for sustainable transformation.

5.2. Recommendations

Building upon the identified challenges and the empirical evidence from Chinese universities' practices, the following recommendations are proposed to advance AI-enabled international education.

5.2.1. Developing Glocalized AI Solutions

Institutions should create "global-local" (glocal) AI applications that combine universal technical capabilities with localized adaptations. This approach should prioritize the development of AI tools that support less commonly taught languages, incorporate culturally relevant content and pedagogical approaches, and are designed to function effectively within varying levels of digital infrastructure. By balancing global scalability with local responsiveness, glocalized AI solutions can maximize their reach and impact across diverse international contexts.

5.2.2. Establishing Ethical Frameworks for AI in International Education

International consortia of universities should collaborate to develop ethical guidelines addressing: (a) data privacy and sovereignty in cross-border education; (b) algorithmic bias mitigation to ensure fair treatment of all student populations; (c) academic integrity preservation in AI-assisted learning environments; and (d) equitable benefit distribution from AI innovations in education. These frameworks should be co-created with stakeholders from diverse national and institutional contexts to ensure their relevance and applicability across different regulatory and cultural environments.

5.2.3. Implementing Comprehensive Capacity Building Initiatives

Institutions should invest in training programs for: (a) faculty digital/AI literacy, with special attention to international education applications; (b) technical staff in developing regions to maintain and adapt AI systems; (c) administrative leaders in AI-enabled international program management; and (d) students as responsible users and co-creators of AI tools. Capacity building should be ongoing rather than one-off, recognizing that AI technologies and their educational applications continue to evolve rapidly.

5.2.4. Fostering Innovative Partnership Models

Universities should develop new collaboration frameworks such as: (a) industry-academia consortia for joint technology development tailored to international education needs; (b) South-South cooperation platforms for capacity sharing among developing countries; (c) multilateral standards co-creation initiatives to ensure interoperability of systems; and (d) public-private partnerships to finance infrastructure development in underserved regions. These innovative partnership models can pool resources, share risks, and accelerate the equitable diffusion of AI-enabled international education practices.

6. Conclusion

The digital transformation of international higher education, accelerated by pandemic necessities and powered by AI innovations, presents both unprecedented opportunities and complex challenges. This study has systematically documented the digital

internationalization models adopted by Chinese universities—encompassing cross-border cloud classrooms, joint resource development, standard and curriculum export, and multilateral cooperation mechanisms—and has analyzed the multifaceted transformative impact of AI on international joint training programs across four dimensions: cross-cultural adaptation support, personalized learning systems, quality monitoring and improvement, and intelligent management services.

The path forward demands concerted global effort. As emphasized in China's Education Power Construction Plan Outline (2024–2035), international cooperation remains essential for harnessing technology's transformative potential while mitigating its risks. The challenges identified in this study—the digital infrastructure divide, cross-cultural and linguistic barriers, data privacy and algorithmic ethics concerns, and faculty readiness and institutional resistance—require coordinated responses that transcend individual institutions and national boundaries.

Future research should focus on longitudinal studies of AI's impact on international learning outcomes, comparative analyses of different national approaches to AI in education, and the development of more sophisticated metrics for evaluating the quality of digitally-enhanced international programs. By continuing to investigate these areas, the global higher education community can work toward a more equitable, effective, and ethically grounded future for AI-enabled international education.

Ethics Approval and Consent to Participate

This study is based on the analysis of publicly available institutional case studies and documented practices. No human participants were directly involved, and no sensitive personal data were collected. The research adheres to ethical guidelines for qualitative research involving secondary data analysis.

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Conflict of Interest

The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

References

Beijing University of Posts and Telecommunications. (2024). *"Ma Shang" intelligent teaching platform: Personalized programming education at scale*. BUPT Educational Innovation Report.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Eastern African Regional Universities Consortium. (2024). *AI and educational equity in Eastern Africa: Challenges and opportunities*. EARUC Policy Brief.

European Union. (2016). General Data Protection Regulation (GDPR). *Regulation (EU) 2016/679*. Official Journal of the European Union.

iFLYTEK. (2024). *Spark large language model: Technical overview and educational applications*. iFLYTEK Research White Paper.

Li, Y., & Li, X. (2025). AI-powered real-time translation in transnational vocational education: The Luban Workshop model. *Journal of Educational Technology Development and Exchange, 18*(1), 45–62.

Liuzhou City Vocational College. (2025). *AI Hub for Luban Workshops: Smart live devices and AI-powered translation systems*. Luban Workshop Annual Report.

Nanning Vocational and Technical University. (2025). *Export of AI-related international professional and curriculum standards to ASEAN countries*. Annual Internationalization Report.

National Research University Higher School of Economics. (2024). *AI software and application case library for learning support evaluation*. HSE Educational Technology Report.

People's Republic of China. (2021). *Personal Information Protection Law of the People's Republic of China*. Standing Committee of the National People's Congress.

State Council of the People's Republic of China. (2024). *Education Power Construction Plan Outline (2024–2035)*. People's Education Press.

Xi'an Jiaotong-Liverpool University. (2024). *Proceedings of the 9th Higher Education Innovation Annual Conference: AI-driven educational innovation*. XJTLU Press.

Xi'an Peihua University. (2024). *VR virtual simulation laboratory for international Chinese education: Development and outcomes*. Institutional Report.