Research on AI-Enabled Case Expansion: Enhancing Accounting Learning Efficiency for Non-Accounting Business International Students under the Belt and Road Initiative

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Abstract: Against the backdrop of the Belt and Road Initiative, international business students in China encounter prominent obstacles in general accounting learning, including insufficient prior professional knowledge, dual language and cultural barriers, and rigid localized teaching resources, which greatly reduce their learning effectiveness and cross-border business adaptation. Targeting the teaching dilemmas of non-accounting international students, this study adopts literature review and case study to explore the application mechanism of generative AI in accounting case teaching. It constructs a closed-loop pre-class, in-class and after-class AI-empowered teaching model and proposes practical optimization paths regarding case resource development, whole-process teaching implementation and supporting guarantee systems. The findings indicate that generative AI can effectively reduce cognitive load, eliminate cross-cultural learning barriers and realize personalized contextual teaching. This research fills the existing pedagogical gap, facilitates the digital transformation of international accounting education, and provides practical references for cultivating high-quality cross-border business talents for the Belt and Road Initiative.

***Keywords*:** international students; accounting education; artificial intelligence; case expansion

1. Introduction

With the Belt and Road Initiative's development, economic and cultural exchanges have boosted China's international education, and business majors are popular among related international students. As a core general education course, accounting is crucial for their financial literacy but poses high demands. Most business international students lack prior accounting training, facing language and cultural barriers; traditional accounting teaching with localized, outdated cases is ill-suited, leading to low learning efficiency. Generative AI, with its advantages in content generation and customization, provides a new solution for accounting case teaching reform and improving teaching quality.

This study expands AI application in international higher education and fills research gaps in accounting pedagogy reform for non-accounting international students under the Belt and Road Initiative. Optimizing accounting case resources with AI can reduce cognitive load for non-major learners. AI-generated video cases ease cross-cultural adaptation barriers, integrate educational resources via digital tools, enhance learning efficiency, and cultivate comprehensive business talents to support the Belt and Road Initiative's sustainable development.

Following the framework of identifying teaching problems, analyzing AI case expansion mechanisms, constructing a teaching model and proposing implementation paths. It uses three methods—literature review, case study and empirical generalization—to explore AI's application in accounting teaching for international students.

2. Related Concepts and Literature Review

2.1 Definition of Core Concepts

This study focuses on Belt and Road international students in Chinese business majors (e.g., International Trade) without prior accounting background, who have three key traits: dual adaptation needs, general education-oriented learning goals, and overlapping language and disciplinary barriers. Accounting instruction for them is a foundational general education module, aiming to equip them with basic financial knowledge for cross-border business, with teaching practices adapting to their cross-cultural and linguistic characteristics.

2.2 Current Research Status at Home and Abroad

Domestic accounting education research has shifted to digital intelligence, with scholars exploring AI integration from multiple perspectives (Lu, 2026). Practical studies (Xin, 2024; Zhang, 2025a) focus on AI-assisted teaching paths. While

AI has been applied in general business courses (Zhang, 2025b), targeted research on AI video cases for Belt and Road international students is scarce.

Foreign research shows generative AI helps international students bridge academic and social gaps (Wang, 2023; Nazir, 2025), though current policies overlook their needs (Bannister, 2024). Overseas scholars also find AI fits basic accounting tasks (Liu, 2025; Bayani, 2024), providing technical support for AI multi-modal accounting cases.

2.3 Research Gaps and Insights

Literature review shows existing studies confirm AI's value in accounting education and international student support, but notable gaps exist. Domestic research ignores Belt and Road non-accounting international students, while foreign studies lack integration with China's context. Most studies separate AI, case teaching and international student education, leaving a gap this study fills by focusing on AI-driven case expansion for these students.

3. Current Situation of Accounting Learning and Teaching

Accounting teaching for international students adopts domestic frameworks with insufficient customization. Textbooks focus on localized practices and dense theories, unsuitable for non-accounting majors. Teaching relies on lectures with limited exercises, and domestic cases plus language barriers hinder learning. Monotonous, non-tiered resources fail to meet personalized needs, and instructors lack cross-cultural and AI application abilities.

International students face multiple accounting learning challenges: localized cases misaligned with their needs, dual language and professional barriers, rigid text-based cases, and low learning efficiency with weak knowledge application.

Several factors cause these challenges: mismatched teaching resources, inflexible traditional teaching models, superficial digital integration, and insufficient learner analysis leading to generalized instruction.

4. Mechanism and Model Construction of AI-Assisted Accounting Case Expansion

4.1 Mechanism of AI-Enhanced Learning Efficiency

Grounded in China's economic realities and Belt and Road trade practices, AI targets the core learning pain points of non-accounting international students through resource supply, personalized adaptation, cognitive load reduction and cultural integration. It generates real-scenario multilingual cases to replace outdated materials, adjusts case difficulty based on students' proficiency, and embeds abstract accounting theories into tangible practices to break language and cultural barriers, promoting active learning and enhancing cross-border adaptability.

4.2 Design of AI-Empowered Case Teaching Model

This study constructs an AI case teaching model rooted in Chinese business realities, focusing on general education and learning efficiency. The model forms a complete closed loop covering pre-class, in-class and after-class stages: pre-class AI-based learner analysis and customized preview materials lay a solid foundation; in-class AI cases replace one-way lectures, with interactive activities integrating professional knowledge and Chinese business content; after-class tiered exercises and extended resources consolidate learning and deepen understanding of China's economic context.

4.3 Practical Application Scenarios of AI Tools in Case Expansion

Mainstream generative AI tools integrate deeply into accounting case development, closely aligned with China's context and Belt and Road themes. They generate customized cases for domestic and cross-border business scenarios, support bilingual instruction with cultural supplements, provide multi-scenario variant practice to facilitate flexible knowledge application, and offer one-stop question answering with extended guidance to enhance students' independent learning efficiency.

5. Practical Paths for AI-Empowered Case Expansion to Improve Learning Efficiency

5.1 Resource Construction

AI technology will be used to establish a dedicated, standardized cross-border accounting case database for non-accounting international students, categorizing cases by knowledge points, difficulty and language to meet diverse teaching needs. Case content adheres to non-accounting syllabuses, focuses on basic financial operations, prioritizes relatable real cases, and is regularly updated via AI to ensure timeliness and authenticity.

5.2 Teaching Implementation

The traditional teaching structure will be reformed by integrating AI case expansion throughout the teaching process. Pre-class AI assessments inform customized preview materials; in-class AI cases replace one-way lectures, with interactive

activities to foster engagement; after-class AI provides tiered homework and targeted support, paired with bilingual instruction to lower language barriers.

5.3 Support and Guarantee Mechanisms

Faculty development will be enhanced through digital training to improve AI and cross-cultural teaching capabilities. The exam-centered evaluation system will be replaced with a comprehensive process-based assessment, and AI questionnaires will regularly collect student feedback to adjust teaching content and pace, forming a continuous optimization loop.

6. Conclusion and Prospect

Accounting instruction for non-accounting Belt and Road international students faces practical challenges that traditional teaching models cannot address. Artificial intelligence, with its strengths in efficient case generation and personalized adaptation, effectively resolves these pain points. Using AI to expand cases and build an intelligent teaching model enriches resources, optimizes formats, improves learning efficiency, promotes digital education transformation, and has strong feasibility and promotional value for general accounting courses.

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