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Research on Teaching Model Reform and Implementation Paths of "International Trade Practice" under "AI+" Context

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Abstract: The "AI+" wave is reshaping the higher education ecosystem, providing impetus for the reform of business and management courses. Taking the International Trade Practice course as its subject, this paper explores reform proposals and practical pathways within the context of artificial intelligence. The paper first reviews the current application of AI technology in education and within this specific course, analysing the shortcomings of traditional teaching across four dimensions: content, methodology, practice, and assessment. Building upon this foundation, it constructs the "Intelligent Practice Community" teaching model and proposes a four-tiered implementation pathway encompassing technological integration, resource restructuring, faculty empowerment, and assessment innovation. Finally, it outlines safeguarding measures for curriculum reform, providing theoretical and practical guidance for the course's deep transformation towards intelligentization.

1. Introduction

The advancement of artificial intelligence propels all sectors of society towards a new paradigm of intelligence. Within education, AI serves as a revolutionary force driving transformative change. The CPC and the State Council have advocated accelerating the digital transformation of education and reforming talent cultivation models[1]. International Trade Practice, a core course in relevant university programmes, aims to develop students' operational skills and comprehensive competencies. This course is characterised by its strong practical, integrated, and timely nature. However, traditional teaching models suffer from shortcomings such as an overemphasis on theory over practice, slow content updates, monotonous teaching methods, and outdated assessment approaches. This results in a significant gap between the students produced and the demands of digital trade ecosystems and corporate recruitment needs. In the "AI+" era, leveraging artificial intelligence to resolve teaching challenges and achieve a shift in course delivery from "knowledge transmission" to "capability generation" is an urgent task. This research, grounded in an approved project, follows a methodology of "problem diagnosis – model construction – pathway design – solution proposal" to deliver a comprehensive, feasible, and forward-looking blueprint for intelligent course enhancement. This aims to elevate talent cultivation quality and serve the strategic demands of China's high-quality open economy development.

2. Primary issues with traditional teaching models in theoretical course instruction

Whilst AI technology presents new developmental opportunities for course delivery, the traditional teaching model for International Trade Practice persists with four structural contradictions.

2.1 Outdated teaching content disconnected from industry practice

The current domestic and international trade environment is in a state of constant flux, with new foreign trade models, business formats, and regulations emerging continuously—such as digital trade, cross-border e-commerce, and market procurement trade. However, traditional International Trade Practice textbooks are compiled and published over extended periods, with their core content typically lagging 1-3 years behind trade practices. Instructors themselves struggle to continuously update their knowledge and access the latest global trade information, leading to outdated classroom content. Consequently, there exists a gap between the knowledge students acquire and the practical requirements of foreign trade enterprises, diminishing the practicality of professional education.

2.2 Practical teaching is overly formalised, lacking depth and immersion

Currently, the practical components of theoretical courses in many undergraduate institutions primarily rely on fixed-function standalone or web-based simulation training software. While the workflow design of such training software is highly standardised, the scenario settings are relatively simplistic and fail to realistically simulate the risks and complex strategic interactions inherent in trade activities. Students can complete exercises merely by applying theoretical knowledge through predetermined steps, failing to experience the process of responding to unforeseen circumstances or making strategic decisions in real trade scenarios. Consequently, practical skills development falls short of expectations, and students' ability to tackle complex real-world trade challenges remains inadequately honed.

2.3 Teacher-centred teaching methods with passive student participation

The "teacher lectures, students listen" approach remains a dominant feature of the didactic teaching model. This approach fails to sufficiently emphasise students' central role in the classroom, inhibiting their enthusiasm for active inquiry and collaborative learning. Theoretical classroom interactions typically remain confined to superficial question-and-answer exchanges, lacking substantive critical discourse and the collision of perspectives. This results in a stagnant classroom atmosphere, hindering the cultivation of students' critical thinking and innovative awareness, ultimately leading to suboptimal learning outcomes.

2.4 Monolithic assessment systems fail to measure holistic competence

The current assessment framework places excessive emphasis on end-of-term closed-book examinations, with content predominantly focused on the memorisation and comprehension of theoretical knowledge. This model of "determining grades by a single examination" struggles to comprehensively and objectively evaluate students' practical operational skills, teamwork spirit, risk awareness, and business ethics demonstrated throughout the learning process. Formative assessments are either absent or perfunctory, with feedback often delayed, failing to provide timely and effective guidance or motivation for student learning.

3. Establishing the "intelligent practice community" teaching model for international trade practice in the "AI+" context

To systematically address the shortcomings of traditional teaching models in course delivery, this study proposes the "Intelligent Practice Community" teaching model. Guided by constructivism, situated learning, and connectivism theories, and supported by an AI-powered platform, this model aims to create a collaborative smart learning ecosystem involving teachers, students, machines, and industry partners.

3.1 Conceptual innovation: from "teacher-centred" to "human-machine collaboration"

The core principle of the "Intelligent Practice Community" model is to achieve a fundamental shift from teacher-led knowledge transmission to student-centred, human-machine collaborative competency development. Within this framework, artificial intelligence functions not merely as an auxiliary tool but integrates into the educational ecosystem as an equal "cognitive partner" and "context designer". Through deep-level interaction with teachers, students, and industry mentors, it collaboratively engages in knowledge construction, practical environment creation, and learning process optimisation, thereby forging a dynamic, open, and continuously evolving intelligent learning community[2,3].

3.2 Core essence and three-tier structure of the model

The model's core lies in forming a "practice community" united by the shared objective of "cultivating students' comprehensive digital trade competencies." Its structure comprises three tiers: Objective Layer (Top-level): Defines "comprehensive digital trade competencies" as the cultivation goal, encompassing professional knowledge, practical skills, digital literacy, cross-cultural competence, and professional ethics; Activity Layer (Middle Tier): Designing a series of intelligent, student-centred teaching activities spanning the entire "pre-class, in-class, post-class" process; Support Layer (Base Tier): Comprising an "AI-powered teaching platform" and a "transformed teaching faculty", providing technical and human resources to underpin teaching activities.

3.3 Closed-loop design of intelligent teaching activities

Pre-class intelligent diagnostics and personalised preparation: Utilising AI platforms alongside micro-lessons and pre-assessments to diagnose learning needs, generating bespoke preparatory task packs and knowledge maps. Educators then analyse teaching priorities and challenges with precision based on platform-generated learning analytics reports, designing differentiated instructional strategies. In-class immersive interaction and collaborative analysis: Classroom focus shifts from knowledge transmission to competency internalisation. VR/AR technologies can create highly simulated trade scenarios (e.g., cross-border supply chain disruption crises), where students engage in group role-play (e.g., as foreign trade agents or customs declarants) to collaboratively explore solutions to high-fidelity problems. AI assistants provide real-time data support and rule queries while recording each group's decision-making process. Instructors assume roles as coaches, facilitators, and catalysts. Post-class targeted consolidation and extension training: AI platforms automatically deliver practice cases and supplementary resources addressing individual knowledge gaps or skill deficiencies based on in-class performance. Standardised assignments (e.g., document completion) receive automated marking and feedback from AI systems, enabling teachers to focus on in-depth critique and guidance for comprehensive, innovative group project reports.

3.4 Data-driven holistic evaluation framework

Transcending the limitations of traditional single-exam assessments, a multifaceted evaluation framework is established encompassing: "Knowledge Application (25%), Skill Execution (35%), Collaborative Contribution (15%), and Innovative Thinking (25%)". Following comprehensive recording of student behaviour and corresponding outcome data across simulation training, group discussions, and resource learning phases, the AI platform employs intelligent algorithms for integrated analysis. This ultimately generates visualised "competency radar charts", providing scientific foundations for teaching reflection and improvement, alongside student self-awareness and career planning.

4. Practical pathway for the "intelligent practice community" in international trade practice under the "AI+" paradigm

To implement the "Intelligent Practice Community" teaching model, a systematic, phased practical pathway must be designed.

4.1 Technology integration pathway: establishing an integrated "cloud-edge-endpoint" teaching environment

Technological integration is a prerequisite for the operation of the "Intelligent Practice Community" teaching model, necessitating the establishment of a stable, efficient, and open intelligent teaching environment.

(1) Cloud Platform Development (Central Hub): Introduce or collaboratively develop an AI teaching platform integrating teaching management, resource centres, data middleware, and algorithm engines. This platform should possess capabilities for personalised recommendations, virtual simulation integration, and data aggregation/analysis. Institutions should prioritize a hybrid cloud architecture to ensure data security while balancing scalability and cost-effectiveness.

(2) Edge Facility Upgrades (Perception and Interaction): Renovate and establish "Smart Trade Training Labs" equipped with high-performance devices to create immersive training environments. Institutions should deploy edge computing nodes for local data processing. This configuration ensures seamless real-time experiences for users while alleviating strain on the central cloud.(3) Terminal Access Assurance (Touchpoints and Entry Points): Guarantee convenient and stable access to cloud platforms and applications via diverse terminals for both staff and students. The institution should develop dedicated mobile applications to facilitate and support ubiquitous learning for all users.

4.2 Resource reconstruction pathway: building a "dynamically generated, continuously evolving" smart resource repository

Teaching resources must transition from static textbooks to a dynamic resource ecosystem. The resource reconstruction pathway must establish a dynamic collection mechanism, initiated by deploying an “information radar network” to automatically harvest data into a “raw data pool”. This raw data is subsequently processed through a “machine auto-tagging + instructional design team manual refinement” model for intelligent annotation and reconstruction, converting it into structured teaching resources for the “teaching resource repository”. This closed-loop system then records resource usage data, employs intelligent algorithms to recommend high-quality content and phase out obsolete material, thereby enabling continuous, data-driven iteration of the resource ecosystem.

4.3 Teacher empowerment pathway: implementing the "USIR" four-stage teacher development programme

Teacher transformation requires systematic and sustained support and empowerment[4]. U (Understanding Value, Alleviating Anxiety): Through expert lectures, field visits, and case demonstrations, enable teachers to grasp the significance of AI-empowered education, facilitating a shift in mindset; S (Skill Mastery and Operational Proficiency): Deliver skills training covering AI teaching platform operation, equipment usage and maintenance to ensure foundational competency; I (Deep Integration and Innovative Design): Organise expert-guided activities where teachers integrate AI tools with pedagogical objectives to develop innovative teaching solutions; R (Reflective Research and Outcomes Formation): Encourage teachers to transform teaching practice into research outputs, cultivating leaders in educational reform.

4.4 Evaluation innovation pathway: advancing from "knowledge assessment" to "data-driven credentialing"

Reform teaching management systems and revise course assessment and grading methodologies, clarifying the status and weighting of formative and competency-based assessments while encouraging diversified evaluation approaches[5]. The evaluation innovation pathway requires that a multidimensional assessment model be constructed. This model leverages AI platforms to automate the collection of formative data and its integration into final grades. Furthermore, the application of assessment outcomes must be deepened. This involves generating "digital competency portfolios" or "learning capability radar charts" for individual students, which serves to fully realize the developmental function of assessment.

5. Safeguards for implementing teaching model reform

To ensure the smooth implementation and sustainable operation of the "Intelligent Practice Community" teaching model within the International Trade Practice course, this study proposes the following targeted safeguards across five dimensions: organisational, institutional, funding, ethical, and quality.

5.1 Organisational safeguards: establishing a tripartite collaborative governance mechanism involving schools, faculties and enterprises

At the university level, actively establish an "AI + Curriculum Committee" led by the Vice-Chancellor responsible for teaching, with participation from the Academic Affairs Office, Educational Technology Centre, and partner enterprises. The committee's core function is to coordinate the planning of AI teaching resource development and policy formulation. At the faculty level, each department/school should establish a “Smart Trade Curriculum” teaching and research office and implement a course coordinator system. The teaching and research section head shall primarily undertake teaching programme design, resource development, and faculty training activities. At the enterprise level, foreign trade companies or educational technology firms shall be introduced as partners. These partners shall provide relevant trade business data and part-time enterprise mentors, thereby establishing a long-term collaborative education mechanism characterised by "joint talent cultivation, shared process management, and mutual benefit from outcomes".

5.2 Institutional safeguards: issuing a series of management documents for "ai + curriculum" development

On one hand, local universities formulated the "AI Teaching Resource Generation and Review Management Measures" to clarify implementation rules such as the source of training data for machine learning models, content review processes, and responsible parties. This ensures generated content complies with regulations and course objectives. On the other hand, institutions revised the "Detailed Rules for Calculating Teaching Workload for Faculty". AI resource development, model training, and teaching research were incorporated into performance evaluations and converted into traditional classroom teaching workload, thereby stimulating full-time faculty participation. Thirdly, the "Student Data and Privacy Protection Regulations" must be refined. Adhering to the principle of data minimisation, student learning behaviour data should undergo encryption and tiered authorisation management to effectively safeguard student privacy.

5.3 Funding guarantees: establishing a diversified investment system of "special funds + competitive grants + matching funds"

Higher education institutions should establish dedicated funding for "AI + Course Innovation", allocating no less than ¥50000 per course for hardware upgrades, platform leasing, resource development, and full-time faculty training.Concurrently, higher education institutions should introduce a competitive allocation mechanism whereby courses passing institutional review receive ¥50000 in development funding, subject to annual assessment.Furthermore, faculties are encouraged to secure additional funding through corporate donations and external research projects, thereby creating a funding framework centred on institutional investment with supplementary sources, ensuring the sustained refinement of teaching methodologies.

5.4 Ethical safeguards: establishing an "algorithm transparency + human-machine collaboration" risk prevention mechanism

On one hand, platform providers are required to furnish model interpretability reports, visually presenting the logical pathways, data sources, and confidence levels of generated content, with teaching staff possessing "one-click traceability" privileges. Concurrently, a "dual human-machine review" system is established. All AI-generated cases, data, and evaluation outcomes must undergo review and signed approval by the course lead before classroom deployment, ensuring teaching content adheres to academic standards and value orientations. For scenarios involving cross-border data transmission algorithm invocation, prior filing with the University's Cybersecurity and Informatisation Office is mandatory to prevent algorithmic bias and data breaches.

5.5 Quality assurance: establishing a closed-loop improvement system combining data-driven approaches

Firstly, Institutions should establish a course big data dashboard to monitor key indicators such as student engagement, task completion rates, and competency growth curves in real time, with automated alerts for abnormal fluctuations. Secondly, Institutions should engage external assessment bodies to conduct annual diagnostics on course objective attainment, student satisfaction, and employer recognition, producing quality certification reports. Outcomes will be directly linked to funding renewal and faculty commendations. Thirdly, Institutions should establish a "continuous improvement" mechanism by convening tripartite forums each semester involving "teachers + students + enterprises + experts". Rapidly adjust teaching strategies and resource content based on feedback to achieve a virtuous cycle of "planning-execution-inspection-improvement".

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