Academic Journal of Science and Technology
ISSN: 2771-3032 | Vol. 21, No. 3, 2026

Reforming Auditing Education in the AI Era: A Three-Stage Progressive Teaching Model and Its Policy Implications for Higher Education

Li Li*

International College, Guangzhou College of Commerce, Guangdong 511363, China
*Corresponding author: lisat23@163.com

Abstract: As artificial intelligence and digital technologies become deeply embedded in the auditing profession, the structural gap between conventional university curricula and evolving industry demands has grown increasingly pronounced. This paper reports on a systematic teaching reform of an undergraduate Auditing course, validated across multiple academic cycles, which addresses three core pedagogical pain points: fragmented knowledge structures, the failure to integrate AI and digital tools into instruction, and insufficient team-based project experience. Drawing on diagnostic surveys of 225 students, the course was redesigned around a "Three-Stage Progressive" model encompassing two coordinated innovations: a "Three-Module, Five-Dimensional Integration" content restructuring, and a dual-track approach combining AI-driven instructional methods with team-based project learning and portfolio assessment. Post-reform data show significant improvements in student academic performance, digital competency, and professional identity. On this basis, the paper advances five higher education policy recommendations for reforming accounting and auditing programmes in the AI era, addressing curriculum governance, industry-embedded practicum frameworks, and competency-oriented assessment systems.

Keywords: Auditing curriculum reform, competency-based learning, higher education policy, digital transformation.

1. Introduction

The convergence of big data analytics, robotic process automation, and generative artificial intelligence is driving a profound structural transformation in the auditing profession. Regulatory frameworks — including the revised standards of the Chinese Institute of Certified Public Accountants and the Accounting Industry Information Technology Construction Guidelines — increasingly demand that practitioners possess competencies in data-driven risk identification, AI-assisted evidence evaluation, and cross-functional collaboration. These developments place mounting pressure on higher education institutions to move beyond textbook-centred, didactic instruction toward active, technology-integrated, and professionally oriented pedagogy.

Yet existing research identifies persistent structural barriers to such reform. Accounting and auditing curricula at Chinese universities remain heavily reliant on static textbook content, with limited integration of authentic industry cases or digital tools [1-3]. Assessment systems continue to privilege end-of-semester examinations over process-based, competency-oriented evaluation [4]. Team-based project learning — central to authentic auditing practice — remains largely absent from course design [5].

This paper reports on a multi-cycle teaching reform of an undergraduate Auditing course at a Chinese university, implemented between 2022 and 2025 and validated through complete teaching cycles. The reform centres on a Three-Stage Progressive model built around two coordinated innovations. The paper presents the diagnostic basis for reform, describes the design of each innovation, reports measurable outcomes, and derives policy implications for higher education governance and curriculum reform in the AI era.

2. Diagnosing the Core Pedagogical Problems

2.1. Student Needs Analysis

At the outset of the reform, a structured diagnostic survey was administered to 225 third-year accounting undergraduates. Three clusters of findings emerged.

First, a significant gap between knowledge and application was evident. While 73% of students reported familiarity with core auditing concepts, only 12% could accurately explain them in applied contexts, and over 70% were unable to independently apply theoretical knowledge to case-based analysis. This "know but cannot use" pattern reflects fragmented knowledge architecture rather than surface-level content deficits.

Second, students' industry awareness was sharply at odds with their technical readiness. Nearly half of respondents identified data analytics and AI collaboration as the most critical future competency for auditors, yet over 70% had never used a data analysis tool in any academic or practical context, and 40% reported no familiarity with relevant software. This paradox between forward-looking awareness and technical incapacity represents a structural deficit with direct consequences for graduate employability.

Third, a clear gap existed between students' learning preferences and the course's actual provision. Seventy percent of students expressed strong preference for role-play simulations and collaborative project formats, yet 75% had never participated in a complete team-based audit simulation, and 68% regarded existing end-of-term examinations as inadequate measures of their problem-solving ability. Students were motivated for active, practice-oriented learning that the existing course design could not provide.

2.2. Course-Level Diagnostic Findings

Systematic analysis of the existing course design revealed three structural deficiencies that closely mirrored the student need gaps. Content was anchored to a nineteen-chapter textbook structure with simplified, adapted case materials that lacked the complexity of real commercial contexts and provided insufficient stimulus for deep professional reasoning. Instructional methods prioritised theoretical exposition with minimal integration of digital or AI tools, creating a disconnect from the pace of the profession's digital transformation. Assessment centred on individual final examinations, failing to capture collaborative competencies, process-based learning outcomes, or digital tool application skills.

2.3. Three Core Pain Points

Synthesising student needs and course diagnostics, three core pedagogical pain points were identified:

Point 1 (Content): Audit theory knowledge structures are not effectively internalised — students accumulate isolated facts without constructing the integrated professional framework required to navigate complex, multi-variable audit environments.

Point 2 (Method): AI and digital tools remain disconnected from instructional practice — classroom activities do not create conditions for students to develop the human-AI collaborative judgement demanded by contemporary audit work.

Point 3 (Context): Team-based project simulation cannot be realised — individually-oriented instruction fails to cultivate the role clarity, interpersonal communication, and multi-layer review competencies that are intrinsic to professional audit practice.

3. The Three-Stage Progressive Teaching Model

In response to these three pain points, the reform advances coordinated innovations across three dimensions — content, method, and context — forming the core framework of the "Three-Stage Progressive" model. Guided by the course ethos of Integrity, Truth-Seeking, and Practice, the model operates as a mutually reinforcing system: content restructuring consolidates the knowledge foundation; AI-driven methods strengthen applied competency; and team-based contextual learning cultivates collaborative professional identity. The three dimensions are interdependent, constituting a closed loop that runs throughout the entire teaching cycle.

3.1. Content Restructuring: Three-Module Progression and Five-Dimensional Integration

Addressing the pain point of fragmented knowledge, the course reorganises its original nineteen-chapter linear textbook structure into three progressively sequenced competency modules, corresponding to three developmental stages: professional identity and regulatory literacy; core audit process and technical methods; and integrated business-cycle audit practice. This restructuring replaces the accumulation of disconnected content with a vertical progression of competency development, enabling students to advance systematically from conceptual familiarity to applied professional capability.

Across all three modules, the course simultaneously pursues a "Five-Dimensional Integration" approach, embedding five cross-cutting elements: value leadership, interdisciplinary knowledge, AI and digital tools, industry-specific scenarios, and authentic case contexts. This design responds to the broader requirements of new liberal arts education and ensures that course content possesses both theoretical rigour and direct relevance to the digital transformation of the auditing profession.

3.2. Instructional Innovation: AI-Driven Methods and Team-Based Experiential Context

Addressing the remaining two pain points simultaneously, the course introduces coordinated innovations in both instructional method and learning context. On the methodological side, AI tools are repositioned from occasional demonstrations to regular instructional partners embedded throughout the teaching cycle. Students engage with real financial data scenarios in which AI performs preliminary analysis, and are then required to critically evaluate AI outputs, apply professional judgement, and reach independently reasoned conclusions. This human-AI collaborative workflow, repeated across multiple teaching units, enables students to internalise a working practice that mirrors contemporary AI-augmented audit environments, effectively closing the gap between classroom instruction and professional reality.

On the contextual side, the course constructs a semester-spanning team project environment anchored by a simulated annual audit engagement with a fictional company. Students are organised into audit project teams and assigned distinct professional roles, rotating positions across the semester so that each student experiences multiple audit functions within a single engagement. Assessment shifts from terminal examinations to a longitudinal portfolio model that captures individual competency development over time, including preparation records, analytical reports, working papers, peer evaluations, and a final group audit report. This assessment design aligns evaluation logic with the collaborative, process-intensive nature of professional audit work.

4. Implementation Outcomes

4.1. Academic Performance

Longitudinal performance data from 2023 to 2025 show consistent improvement across three consecutive teaching cycles. In the most recent cycle, the overall pass rate reached 92.50% and the distinction rate 42.33%, representing significant gains over pre-reform benchmarks. Pre- and post-module assessments consistently showed students shifting from unfamiliarity to mastery across four core knowledge units, with the proportion of self-assessed competent responses rising markedly after instruction. Students reported that their mode of knowledge acquisition had shifted fundamentally — from passive retention toward active, transferable professional understanding.

4.2. Digital and AI Tool Competency

Student self-assessed competency across four digital and AI tool domains improved substantially between the start and end of the course:

Table 1. Pre- and post-class self-assessment

Competency Domain	Pre-Course	Post-Course	Change
Data sensitivity	43%	85%	+42%
IT application ability	44%	82%	+38%
Industry-finance integration	44%	79%	+35%
Problem-solving capability	45%	76%	+31%

These gains are directly attributable to the course's design of embedding AI tool engagement as a regular instructional activity rather than a supplementary exercise. Through repeated practice in authentic data environments, students progressively internalised digital tool use as a professional working habit rather than remaining at the level of conceptual awareness.

4.3. Professional Identity and Collaborative Competency

Career identification — measured by survey items assessing students' sense of professional mission and intention to enter the auditing profession — rose from 53.60% at the start of the first semester to 88.40% by the end of the second semester. Students consistently identified the role-rotation mechanism as the primary driver of this change: by occupying multiple audit positions within a single engagement, students developed a concrete understanding of how different roles within an audit team are systemically interdependent, strengthening both professional belonging and vocational commitment.

5. Policy Implications for Higher Education Reform

The foregoing experience generates five policy-level recommendations applicable to higher education institutions reforming accounting and auditing programmes, and more broadly to any professional education programme confronting the challenge of preparing graduates for AI-era workplaces.

5.1. Adopt Competency-Anchored Curriculum Governance

Accreditation and quality assurance frameworks should require that professional course design begins from industry-defined competency profiles rather than textbook chapter sequences. The three-module restructuring reported here demonstrates that organising content around a developmental progression — from professional identity formation, through skills acquisition, to integrated practice — produces meaningfully stronger learning outcomes than additive content accumulation. Institutional teaching committees and programme accreditation bodies should incorporate reverse-design principles into the standards governing professional course approval.

5.2. Establish AI Tool Integration as a Mandatory Curriculum Requirement

Education authorities and university academic affairs offices should issue binding guidance establishing AI tool integration as a core instructional requirement for relevant professional courses, not an optional enrichment. This reform demonstrates that authentic human-AI collaborative workflows can be operationalised within the constraints of a standard classroom environment. Policy frameworks should fund the development of discipline-specific AI instructional resources and simulated dataset repositories, and provide accompanying faculty training to support adoption at scale. Courses that cannot demonstrate meaningful integration of current-generation digital tools should be subject to periodic curriculum review.

5.3. Build Institutional Frameworks for Industry-Embedded Simulation

The finding that 75% of students had never participated in a complete team audit simulation prior to reform reflects the absence of institutional structures requiring experiential, project-based learning in professional programmes. Universities should establish minimum requirements for team simulation contact hours within accounting and auditing degrees, supported by structured partnerships with accounting firms to provide case materials, role specifications, and supervisory input. The semester-spanning project model developed here — built around a single simulated client with progressively increasing complexity — requires no additional facilities and offers a replicable template for institutional adoption.

5.4. Reform Assessment Policy toward Process-Based, Multi-Dimensional Evaluation

The finding that 68% of students regard end-of-term examinations as inadequate measures of professional competency reflects a well-documented validity problem in applied professional education. Education ministries should issue guidance recommending portfolio-based assessment as the standard evaluation model for professional courses, with operational guidance on designing peer evaluation instruments, working paper rubrics, and longitudinal competency tracking records. In the Chinese context, professional qualification bodies including the CPA examination system should explore alignment between university portfolio standards and entry-level professional assessment frameworks.

5.5. Invest in Faculty Capacity for Technology-Integrated Pedagogy

Teaching reform of this nature requires faculty who possess both disciplinary expertise and sufficient technology literacy to design AI-integrated instructional sequences, develop simulated data environments, and facilitate human-AI collaborative reasoning in classroom settings. This combination of competencies remains rare. Universities and education authorities should establish dedicated faculty development programmes in AI-assisted pedagogy, and build incentive structures — including teaching evaluation criteria

and research recognition policies — that formally recognise curriculum innovation as a scholarly contribution of equivalent standing to research publication.

6. Conclusion

This paper has presented and evaluated a comprehensive teaching reform of an undergraduate Auditing course designed to address three interlocking challenges: fragmented knowledge structures, the absence of AI tool integration, and the lack of team-based practical experience. The Three-Stage Progressive model — grounded in systematic content restructuring, driven by the deep integration of digital and AI tools, and contextualised through team project immersion — produced measurable improvements in academic performance, digital competency, and professional identity across multiple implementation cycles.

The five policy recommendations derived from this experience — competency-anchored curriculum governance, mandatory AI tool integration, institutional frameworks for industry-embedded simulation, portfolio-based assessment reform, and targeted faculty capacity investment — are applicable beyond the auditing discipline to any professional education programme facing the challenge of preparing graduates for AI-transformed workplaces.

Future research should examine the transferability of the Three-Stage Progressive model to other accounting and finance courses, investigate the long-term career outcomes of graduates from the reformed programme, and develop standardised assessment rubrics to enable cross-institutional benchmarking of AI-integrated professional education quality.

Acknowledgements

This research was supported by the 2025 University-Level Research Project of Guangzhou College of Commerce (Project No. 2025XJYB013).

References

[1] Bakarich, K. M., & O'Brien, P. E. (2021). The robots are coming … but aren't here yet: The use of artificial intelligence technologies in the public accounting profession. Journal of Emerging Technologies in Accounting, 18(1), 27–43. https://doi.org/10.2308/jeta-2020-0321.

[2] Baldwin, A. A., Chiu, V., Liu, Q., & Muehlmann, B. (2023). Technology agility supported by a growth mindset: A new requirement for accounting curricula. Journal of Emerging Technologies in Accounting, 20(2), 11–28. https://doi.org/10.2308/jeta-2022-0260

[3] Ng, C. (2023). Teaching advanced data analytics, robotic process automation, and artificial intelligence in a graduate accounting program. Journal of Emerging Technologies in Accounting, 20(1), 223–243. https://doi.org/10.2308/jeta-2022-0174

[4] Dogaru, M., Pisīcă, O., Popa, C. Ş., Răgman, A. A., & Tololoi, I. R. (2025). The perceived impact of artificial intelligence on academic learning. Frontiers in Artificial Intelligence, 8, 1611183. https://doi.org/10.3389/frai.2025.1611183

[5] Gordon, M., Daniel, M., Ajiboye, A., O'Sullivan, M., Shadbolt, N., & Harden, R. (2024). A scoping review of artificial intelligence in medical education: BEME Guide No. 84. Medical Teacher, 46(4), 446–470. https://doi.org/10.1080/01425694.2023.2299417.