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The Teaching Model of Integrating Professional, Entrepreneurial, and Smart Education in Accounting: Digital Elements, Connotations, and Framework

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Abstract. With the development of "big data, AI, mobile internet, cloud computing, and IoT" (or "big intelligence moving cloud and things") digital technologies, higher education urgently needs to establish an interdisciplinary talent cultivation model that integrates professional education, innovation-entrepreneurship education, and smart education. Taking the accounting program in applied undergraduate colleges as a practical case, this study analyzes the intrinsic implications and digital intelligence elements of integrating innovation-entrepreneurship education with professional education. It proposes a teaching model characterized by "university-enterprise collaboration, triple-chain integration, and competition-training synergy": by collaborating with enterprises to establish an intelligent financial training platform, the deep coupling of professional education chain, innovation and entrepreneurship education chain, and smart education chain can be achieved; Based on the "student+scenario+project" training system, build an advanced path of "virtual simulation - physical practice - achievement incubation". Restructuring teaching elements and bridging competency-building pathways offers a transferable paradigm for universities to cultivate interdisciplinary talents who excel in expertise, technology, and innovation.

Keywords: digital intelligence; innovation-entrepreneurship education; Accounting education; Interdisciplinary Integration of Professional, Innovative, and Smart Education

1. Introduction

The development of digital technologies such as big data, artificial intelligence, mobile internet, cloud computing, and the Internet of Things (i.e. "big intelligence moving cloud and things") is driving the transformation of accounting talent cultivation from a bookkeeping-oriented model to a management decision-making-oriented paradigm [1], requiring accounting education to shift towards an interdisciplinary and innovative integration model. However, the current lack of integration of school enterprise resources and the low degree of curriculum system integration seriously restrict the cultivation of innovative and intelligent accounting talents [2]. Existing research mostly focuses on the integration of ideas and goal synergy between entrepreneurship education and professional education, but there is insufficient exploration of teaching models in the context of smart

education. The consensus in academia (Ren Yongli, 2015; Li Yayuan, 2016) indicates that entrepreneurship and innovation education is an important extension of professional education, and a new paradigm of education needs to be constructed by cultivating core competencies such as innovative thinking and entrepreneurial ability. The close integration of entrepreneurship education and professional education is a common consensus among scholars engaged in innovation and entrepreneurship education teaching, research, and practice [5,6].

This study is based on the accounting major and proposes a teaching model that integrates innovation and entrepreneurship education with intelligent accounting education. Based on the fundamental task of cultivating morality and talents, multiple intelligent technology tools are integrated to establish a teaching model of "integration of specialization and innovation, collaboration between industry and education, and integration of science and education", realizing the maximum value of digital empowerment of accounting talent cultivation, research and innovation, achievement transformation, social services, and accounting culture inheritance. This article summarizes the inherent meaning and digital elements of the integration of innovation and entrepreneurship education with accounting education, and proposes a teaching model of "school enterprise cooperation, three chain integration, and competition training integration", which provides a replicable path for cultivating composite accounting talents and promotes the digital transformation of education and the deep integration of industry and education.

2. The intrinsic meaning of the intelligent integration of entrepreneurship education and accounting professional education

2.1. Cognitive innovation in interdisciplinary exploratory science education

In the era of digital intelligence, the cultivation of accounting talents needs to be based on the core concept of "discipline integration - digital intelligence empowerment - innovation collaboration", and reconstruct a T-shaped knowledge system: horizontally integrating big data analysis and entrepreneurship education, vertically connecting business analysis and strategic decision-making capabilities, and forming a digital knowledge architecture that supports resource allocation. In the implementation of teaching, relying on the intelligent financial laboratory to build a closed-loop process of "scene presentation → problem exploration → collaborative practice", teachers transform into learning guides and drive independent exploration through visualized business scenarios (such as supply chain, financial sand table, etc.). This model achieves a deep coupling between the acquisition of professional knowledge and the cultivation of numerical intelligence skills, promoting the transformation of accounting education from knowledge imparting to ability building.

2.2. Innovation of the "Six pairs of dual-elements" model for practical education

To meet the new demand for intelligent accounting professionals in the era of development and changes, the integration of industry and education empowered by digital intelligence and the dual education of schools and enterprises are the key to educating accounting professionals in the intelligent era. Based on the dual mainline of "theory+practice", we will create a "school enterprise dual base" training platform, set up a "physical+online" dual classroom scene, form a "university teacher+industry mentor" dual mentor team, deepen the "school enterprise+school school" dual cooperation mechanism, and implement a "school enterprise+society" dual dimensional evaluation. This teaching model that

integrates theory and practice not only strengthens students' accounting professional competence and professional ability, but also effectively bridges the gap between school enterprise supply and demand by reproducing real business scenarios and aligning with industry standards, ultimately forming a dynamic adaptation mechanism between talent supply and industry demand.

2.3. Upgrade of teaching practice driven by "Big Intelligence Moving Cloud and Things"

Under the background of digitalization, accounting education needs to promote the three in one reform of "curriculum reconstruction practice transformation evaluation upgrade". In terms of curriculum restructuring, a modular system of "theoretical innovation+digital intelligence empowerment+professional innovation integration" will be constructed: intelligent finance and taxation, business data analysis will be integrated into core courses such as "Financial Management", and a virtual real integration teaching platform will be built based on VR/AR technology to achieve dual activation of professional cognition and innovative thinking. Gradual maker training completes practical transformation: Through the teacher-student collaborative mechanism, intelligent financial and tax project mining (creative incubation), business finance integration competition training (ability building), and school enterprise co construction incubation base (product transformation) are carried out, forming a closed loop of "classroom works → commercial products". Innovate data-driven 3D evaluation model: collect multimodal data such as RPA operation logs and business plan iteration data, use machine learning to generate capability radar charts, and dynamically track the collaborative development of "professional competence (criterion application) ×technical literacy (tool deployment) × business thinking (model innovation)".

3. The digitization elements of the integration of entrepreneurial education and accounting education

The three core elements of the integration of entrepreneurship education and accounting education are digital technology, data infrastructure, and intelligent scenarios. The technical support layer is based on the "Big Intelligence Mobile Cloud IoT" cluster, and uses VR/AR to build a virtual simulation laboratory to achieve business and financial decision-making training. IoT technology connects physical and digital spaces, and intelligent analysis tools (data storage/algorithm models/knowledge graphs/natural language processing) form an intelligent graph of the entire teaching, learning, research, and evaluation chain, supporting precise teaching.

Building a three-dimensional data pool of "teaching practice management" in the data foundation layer: integrating multi-source data such as smart environment recognition, training feedback, and equipment interaction to construct an accounting smart teaching environment database; Collecting student academic data (classroom performance/process learning/final assessment) through intelligent terminals to form a competency map; Dynamically obtain teacher research data (case contributions/practical guidance/classroom quality), and construct a teacher development capability model; Pay attention to the comprehensive quality evaluation of students, and use course evaluation data, entrepreneurial works, and achievement transformation data to achieve teaching optimization, accurate evaluation, and individual development diagnosis.

The scenario application layer is built with four major scenarios: smart teaching space (double innovation cloud platform+cloud accounting practice base, etc.), smart learning system (precise resource push based on learning ability graph, etc.), smart teaching and research platform (targeted push of teaching cases, sharing of innovative project resources, etc.), and three-dimensional evaluation system (multidimensional evaluation of professional competence×technical ability× innovative thinking), to achieve innovation in application scenarios such as smart teaching environment, smart learning, smart teaching and research, and smart evaluation [7]. By empowering the reconstruction of teaching space through technology, driving precise education through data, and promoting capability transition through scenario innovation, we aim to achieve the digital transformation of accounting education. (Figure 1)

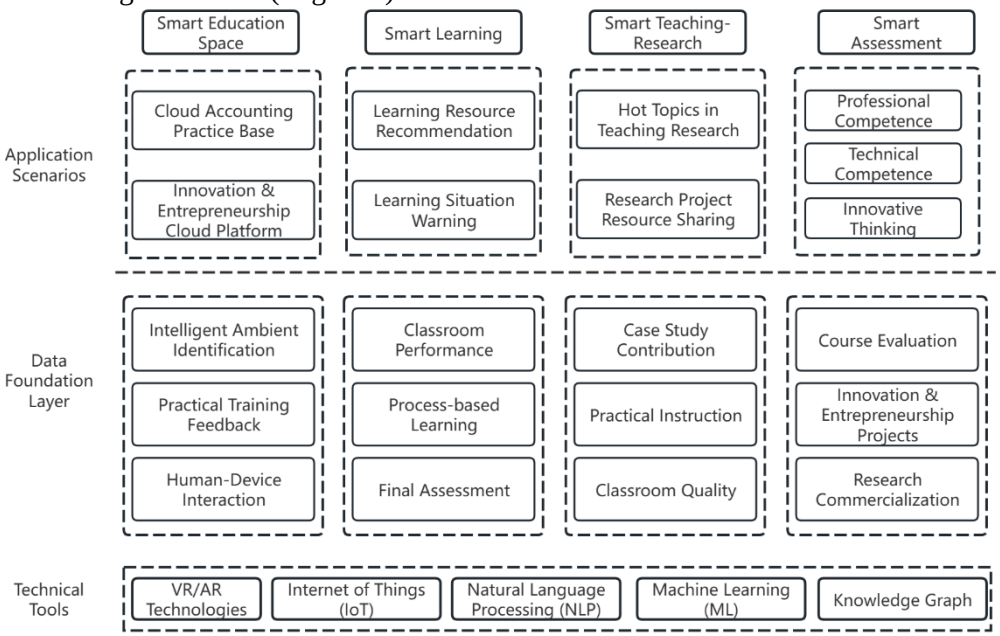

Figure 1: Core Architectural Framework for the Integration of Professional, Innovative, and Smart Education in Accounting

4. Construction of teaching mode for accounting major

This study takes applied undergraduate accounting programs as an example to construct a teaching model featuring "university-enterprise co-creation, triple-chain integration, and competition-training synergy": (1) Collaborative development of a digital-intelligent accounting teaching environment between universities and enterprises facilitates resource sharing; (2) Integrating theoretical instruction with practical training across on-campus laboratories and off-campus internships effectively bridges the professional education chain, innovation-entrepreneurship chain, and smart education chain; (3) A progressive "theory → skills → innovation → practice" competition-training system is designed to cultivate interdisciplinary accounting talents.

4.1. Digitally-intelligent teaching environment co-created through university-enterprise collaboration

4.1.1. Construction of digital-intelligence technology platforms

Enterprise-grade financial systems such as SAP and Oracle NetSuite are introduced to construct an intelligent experimental platform. Machine learning and AR/VR technologies are integrated to develop immersive virtual-physical interaction scenarios, including digital twin financial optimization, RPA development, and business decision-making simulations. A shared resource repository is established through university-enterprise collaboration, with enterprises granting access to industry databases. Intelligent data anonymization tools are employed to generate teaching datasets, forming a closed-loop "data-tools-scenarios" ecosystem that supports practical training in market analysis, risk modeling, and other applied exercises.

4.1.2. Construction of tiered practical training bases

Firstly, a tiered practical scenario system is designed based on competency progression. For lower-grade students, elementary scenarios focus on validating fundamental skills such as intelligent invoice management and automated voucher generation. For second- and third-year students, intermediate scenarios facilitate business-finance integrated decision-making training. Senior students engage in advanced scenarios featuring commercial project innovation practices, establishing an "operation → analysis → creation" competency transition pathway.

Secondly, a synchronized virtual-physical interaction platform is developed through university-enterprise collaboration, jointly constructing an intelligent financial laboratory and big data center. Through on-campus guidance by corporate mentors and faculty participation in technological R&D, bidirectional empowerment of "research-teaching" is achieved.

4.1.3. Reconstruction of the learning ecosystem through "Resources-Tools-Space" integration

A fully coordinated accounting learning ecosystem is established by reconstructing physical and virtual spaces and integrating university-enterprise resources.

（1）Innovative Course Resources with Converged Media Assistance

Virtual simulation cases and dynamic data dashboards are adopted to achieve visualized teaching of commercial scenarios.

（2）Reform of Interactive Teaching Models Based on Tools and Platforms

Tools such as financial robot RPA and the Virtual Business Social Environment (VBSE) platform are utilized to enhance multidimensional interaction.

（3）Construction of an Integrated Learning Space

A hybrid learning environment comprising "Smart Laboratories (physical) + Digital Twin Platforms (cloud) + Enterprise Workstations (practical)" is developed to realize end-to-end online and offline business-finance integrated training.

4.2. Instructional design for the triple-chain integration of "Professional Education + Innovation & Entrepreneurship + Smart Education"

Constructing a Triple-Chain Integrated Accounting Curriculum System ("Professional + Innovation & Entrepreneurship + Smart") Based on the "Big Intelligence, Mobile Internet,

Cloud Computing, and IoT" Technological Framework to Achieve Deep Theory-Practice Synergy.

4.1.2. Three-dimensional integrated curriculum design of "Professional Education + Innovation & Entrepreneurship Education + Smart Education"

(1) Constructing "Technology-Embedded" Traditional Accounting Professional Courses

Project-based task-driven approaches are adopted to facilitate the transformation of course deliverables into commercial products. In courses such as Basic Accounting and Financial Management, RPA financial robots and Tableau visualization tools are embedded, while virtual simulation platforms are leveraged to restructure teaching content. This enables students to acquire relevant accounting skills for digital-intelligence scenarios from the perspectives of enterprise management and business decision-making[8].

Using an applied undergraduate institution in Chongqing as a case study, this study systematically examines the technology integration in core accounting courses and highlights key aspects of "professional-innovative-smart" (PIS) convergence education. (Table 1).

Table 1: Examples of technology integration and "Professional-Innovation-Smart" (PIS) convergence education in accounting curriculum content

NO.	Course	Embedded Technologies	Integrated Education Examples
1	Basic Accounting	Blockchain electronic voucher, data conversion and processing tools (Excel Power Query)	Simulating Full-Cycle Accounting Processes for Startup Registration's First Month Using Distributed Ledger Technology
2	financial accounting	AI-Powered Financial Statement Generation	Replicating End-to-End Financial Processes of Listed Companies Using Digital Twin Systems
3	Marketing	Big Data Customer Profiling	Simulating Live Streaming Commerce in Virtual Broadcasting Labs to Generate Real-Time Sales-Financial Linkage Reports
4	financial management	Python Quantitative Analysis of Enterprise Valuation Models and Robotic Process Automation (RPA) for Fund Monitoring	Designing Business Plan Simulations for Investment Pitching Based on Financial Data
5	Tax Law and Tax Accounting	Big Data Audit Simulation and Intelligent Tax Robot	Tax Planning Simulation for Startups
6	Cost management accounting	Machine Learning-based Cost Prediction and IoT-enabled Production Energy Consumption Monitoring	Zero-Inventory Business Plan Based on Cost Analysis
7	Auditing	Blockchain audit, VR audit simulation cabin	Simulating On-Site Verification for Startups in VR Environments

(2) Developing Interdisciplinary Financial Digital Intelligence Courses

Applied accounting education requires the establishment of composite courses such as "Accounting+AI". Drawing on advanced practices from domestic universities, this study categorizes financial digital intelligence courses into two types: First, intelligent accounting courses like "RPA Financial Automation" that integrate OCR recognition throughout the entire risk warning process. Second, decision-making courses such as "Big Data Accounting Analysis" that employ machine learning to analyze financial statement data while cultivating innovative thinking through business pitch training. This approach constructs an interdisciplinary knowledge framework of "technology application + decision-making innovation" for students.

（3）Offering Specialized Courses in Comprehensive Financial Simulation with Innovation-Entrepreneurship Empowerment

Driven by digital intelligence and industry-education integration, the accounting program has developed specialized courses featuring "comprehensive simulation + innovation-entrepreneurship empowerment". Through cross-disciplinary role-playing simulations of complete enterprise operation cycles, students engage with multidimensional scenarios spanning market, government, and business environments. This immersive virtual practice simultaneously enhances three critical competencies: business operation execution, strategic decision-making, and innovation-entrepreneurship capabilities.

4.2.2. Establishing a "Virtual Simulation - Hands-on Practice - Course-Embedded" Instructional Process

The cultivation of digitally intelligent accounting professionals requires implementing a three-stage progressive teaching methodology:

（1）Cognitive Foundation Stage (Lower Grades)

Students utilize digital textbooks and tax/finance platforms to simulate comprehensive enterprise operations, mastering fundamental skills in document processing and business analysis.

（2）Practical Reinforcement Stage (Years 2-3)

Through integrated business-finance platforms, students conduct full-process "procurement-production-sales" training to develop collaborative decision-making capabilities across business and financial functions.

（3）Outcome Incubation Stage (Graduating Year)

Industry-academia courses and corporate internships facilitate the transformation of innovative outcomes, including financial robot development and business data analysis, forming a spiral development pathway of "virtual simulation foundation → hands-on practice reinforcement → achievement incubation transition".

4.2.3. Establishing a Comprehensive Assessment System Through Digital Intelligence Technologies

The accounting discipline must develop a competency-oriented, dynamically-tracked, and multi-stakeholder collaborative evaluation system to achieve precise three-dimensional assessment of "professional competence × technical proficiency × innovative thinking"[9]. First, tiered assessment metrics are developed based on multifaceted competency

requirements: the professional dimension evaluates depth of accounting standard application, the technical dimension measures virtual simulation task completion proficiency, and the innovation dimension assesses business model viability and project commercialization rates. Second, a dual-path evaluation mechanism is implemented, combining formative assessments (testing business-finance integration through corporate simulation defenses and supply chain scenario analyses) with summative evaluations that produce competency matrices from innovation project outcomes. Finally, digital intelligence tools create a smart evaluation loop - collecting simulation logs and innovation-entrepreneurship data, applying machine learning to generate personalized competency radar charts and customized learning plans, and establishing a closed-loop "data collection → intelligent diagnosis → dynamic optimization" ecosystem that continuously enhances the educational process.

4.3. Building a "Student + Training Arena + Project" competition-training system

Under the dual drivers of digital intelligence and industry-education integration, the accounting program has established an innovative competition-training ecosystem characterized by "competition-driven motivation, scenario-empowered training, and closed-loop development".

4.3.1. Three-phase interconnected competition-training model

Centered on the triad of "faculty-student co-creation, industry alignment, and digital intelligence empowerment", this model leverages competition platforms like the "Internet Plus" Innovation Competition to establish a comprehensive cultivation pathway from "pain point identification → project incubation → practical validation". The program specifically addresses industry challenges in intelligent taxation and blockchain contracts through cross-disciplinary teams guided by a tiered mentorship system (academic supervisors + industry experts + venture capital advisors). By conducting immersive training in virtual simulation laboratories, the model achieves a pedagogical transformation from "knowledge dissemination" to "commercial validation".

4.3.2. Strengthening practical platform support and enhancing the innovation-entrepreneurship "Training Ground"

Higher education institutions should leverage industry-academia collaboration and alumni networks to fully utilize virtual simulation training labs, specialized innovation-education integration bases, and corporate resources, thereby embedding theoretical accounting knowledge into innovation-entrepreneurship practices and achieving integrated educational outcomes of professional, innovative, and smart education. By strategically coordinating resources, institutions should strengthen the development of on-campus training platforms, maker spaces, and business incubators, creating a comprehensive "proving ground" for accounting faculty-student teams to showcase achievements, cultivate competition skills, and incubate outcomes. This approach fosters the formation of a full-chain competition-training system encompassing "front-end cultivation, mid-end practice, and back-end incubation," ultimately establishing a bidirectional cycle where education feeds back into continuous capability enhancement.

5. Conclusion

In the era of digital intelligence, the integration of innovation-entrepreneurship education with accounting professional education has become an imperative for cultivating interdisciplinary talents. Taking applied undergraduate institutions as a case study, this paper constructs a "university-enterprise co-creation, triple-chain integration, competition-training synergy" teaching model: virtual simulation platforms reshape teaching scenarios, a triple-chain integrated accounting curriculum system is established, and a progressive cultivation pathway of "basic skills → business-accounting integration → innovation incubation" is formed. Higher education institutions should implement context-specific teaching reforms to develop accounting professionals who combine professional depth, technological application, and business innovation capabilities.

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REFERENCES

1. D.P.Tang, B.L.Wang and Y.C. Liu, Reconstruction of accounting education in the "digital intelligence" era: Supply-demand contradictions and factor innovation, *Accounting Research*, 12 (2020) 180-182.
2. X.H.Jiang and L.P.Zhang, etc Analysis of Innovative Talent Cultivation through Cross disciplinary Integration in Accounting Major, *Finance and Accounting Monthly*, 2 (2024) 43-47.
3. Y.L.Ren, Research on the Integration Path of Entrepreneurship Education and Professional Education in Colleges and Universities, *Chinese Journal of Education*, 2 (2015) 53-54.
4. Y.Y.Li, Innovation and Entrepreneurship Education: Connotation Interpretation and Research Prospects, *Ideological and Theoretical Education*, 4 (2016)83-87.
5. Z.Y.Li, My Opinion on Innovation and Entrepreneurship Education, *Teaching in Chinese Universities*, 4 (2014) 5-7.
6. Z.R.Wang, *Introduction to "Broad Spectrum" Innovation and Entrepreneurship Education*, People's Publishing House, Beijing, 2016.
7. S.Y.Liu, Innovation and System Reconstruction of Talent Training Model Empowered by Artificial Intelligence and Education in Both Directions, *Research on the Development of Science and Education*, 2 (2022) 42-56.
8. C.L.Xi, Investigation and Countermeasures on the Current Situation of Accounting Professional Education+Innovation and Entrepreneurship Integration, *Metallurgical Management*, 2 (2022)196-198.
9. F.Ji and H.J.Zhang, Research on the attribution and countermeasures of obstacles in innovation and entrepreneurship education in universities from a process perspective, *Jiangsu Higher Education*, 6 (2023) 58-65.