Research on the Construction of an Integrated Education Model for "Technical and Skilled Talents" in Finance and Economics Majors under the School-Enterprise Cooperation Model

Tingni Li*

Hainan Vocational University of Science and Technology, Haikou, 570203, China
**Corresponding author: ltn9969@163.com*

Abstract: *Under the background of the digital economy, technological changes and model innovations in the finance and economics industry have put forward new requirements for talent cultivation. Aiming at the problem of insufficient adaptability of the traditional education model, this research constructs an integrated education model for "technical and skilled talents" in finance and economics majors from the perspective of school-enterprise cooperation. By explaining the conceptual connotation of integrated education and the theoretical logic centered on knowledge integration, process coordination, and value symbiosis, this study analyzes practical dilemmas and missing elements. Based on the perspectives of system theory and educational ecology, it proposes a path for element reconstruction, and ultimately constructs a competency-oriented collaborative education framework that covers the curriculum system, practice platforms, teaching staff, and evaluation safeguards. Through key designs such as project-based teaching, virtual-real integration platforms, and dual-teacher structures, this model promotes the deep integration of knowledge, skills, and literacy, providing a systematic solution for the reform of finance and economics education.*

Keywords: *Finance and economics majors; Technical and skilled talents; Integrated education model; School-enterprise cooperation; System construction*

Introduction

Under the macro background where the digital economy has become a new engine for global economic growth, the finance and economics industry is undergoing profound transformations driven by fintech, big data analysis, and intelligent tools. This poses new requirements for the competency structure of finance and economics talents, demanding a solid theoretical foundation, proficient technical application skills, and comprehensive professional qualities. However, the problems in traditional finance and economics education, such as the disconnection between theoretical teaching and practical application, and the misalignment between the talent supply side and industry demand side, are becoming increasingly prominent. This makes exploring an educational path that can effectively bridge this gap of great theoretical value and practical urgency. This research is based on the perspective of school-enterprise cooperation and is committed to constructing an integrated education model for "technical and skilled talents" in finance and economics majors. Its necessity lies in: from a theoretical perspective, it helps to enrich and expand the specific application and interpretation of the industry-education integration theory in the field of finance and economics education; from a practical perspective, it provides an operable framework system for solving the homogenization dilemma in talent cultivation and enhancing the contribution and adaptability of talents to industrial development. This research, through systematically analyzing its theoretical logic, practical dilemmas, and reconstruction paths, aims to provide theoretical support and practical guidance for the new round of finance and economics education reform.

1. Theoretical Logic of Integrated Education for Technical and Skilled Talents in Finance and Economics Majors

1.1 Conceptual Definition and Connotation Analysis of Integrated Education

As a modern educational philosophy, the core essence of integrated education lies in breaking down the barriers between knowledge impartation and ability cultivation in traditional education, achieving deep penetration and organic integration of different educational elements. In the educational context of finance and economics majors, integrated education specifically refers to the systematic integration of academic knowledge, professional techniques, and vocational skills throughout the entire talent cultivation process. It transcends simplistic "additive" thinking, which mechanically juxtaposes theoretical courses and practical operations, and instead pursues a "chemical reaction-like" integration. Its connotation is reflected in the fusion of knowledge structure and ability literacy, the integration of theoretical teaching and practical application, and the blending of campus culture and corporate spirit. This integration aims to cultivate versatile talents capable of deeply understanding the core principles of finance and economics theories while skillfully utilizing modern technological tools to solve complex economic problems, thereby laying a conceptual foundation for subsequent discussions on specific models of school-enterprise collaboration[1].

1.2 Theoretical Basis and Characteristic Analysis of Technical and Skilled Talents

The conceptual framework of technical and skilled talents is constructed upon human capital theory, constructivist learning theory, and situated learning theory. Human capital theory reveals the significant value of specific skills and knowledge as a form of capital for individual productivity and socio-economic development. Constructivist theory emphasizes that learning is an active process where learners construct internal mental representations rather than passively receiving information, requiring educational environments to provide ample opportunities for active exploration and practice. Situated learning theory further indicates that learning is inherently a process of participating in communities of practice, gradually moving from peripheral to central involvement, where the effectiveness of knowledge and skills is highly dependent on their context. Based on these theories, technical and skilled talents in finance and economics majors demonstrate distinct composite characteristics. These characteristics encompass not only systematic understanding of disciplinary theoretical systems such as accounting, finance, and economics, but also operational capabilities with modern information technologies including big data analysis, intelligent tax software, and fintech platforms, along with higher-order professional skills for analysis, decision-making, communication, and innovation in actual business environments.

1.3 The Constituent Dimensions of the Theoretical Logic of Integrated Education

The theoretical logic of integrated education forms a multidimensional and comprehensive framework, primarily composed of three core dimensions: knowledge integration, process coordination, and value symbiosis. The knowledge integration dimension focuses on the structural reorganization of declarative knowledge (knowing what) and procedural knowledge (knowing how). For instance, it involves combining traditional financial management theories with Python-based financial data analysis techniques to form new, integrated knowledge units. The process coordination dimension emphasizes the connection and collaboration within the educational process. It requires that various stages, such as course learning, project development, and internship training, are no longer isolated phases but rather interconnected and continuous processes, achieving a virtuous cycle of "learning through doing" and "doing through learning." The value symbiosis dimension adopts a broader perspective, exploring how educational institutions and industrial organizations, through resource sharing and complementary advantages, collaboratively create educational value that cannot be achieved by any single entity. This addresses the dynamic demands for talent quality driven by industrial upgrading and ensures the long-term alignment of educational supply with talent demand.、

1.4 The Internal Connections of Theoretical Logic in Educational Practice

The various dimensions of the aforementioned theoretical logic do not exist in isolation within educational practice; rather, they constitute an organic whole characterized by interdependence and mutual reinforcement. Knowledge integration serves as the foundation and starting point of integrated education, providing the substantive content for process coordination. Without a restructured,

integrated knowledge system, any form of process coordination would lack substantive meaning. Process coordination acts as the pathway and guarantee for achieving knowledge integration. By creating authentic or highly simulated application scenarios, it enables learners to effectively internalize and transfer integrated knowledge. Without coordinated organizational processes, knowledge integration is prone to becoming superficial[2]. Value symbiosis represents the inevitable outcome and value enhancement resulting from the joint action of the first two dimensions. Successful knowledge integration and process coordination ultimately cultivate high-quality talents that meet the needs of multiple stakeholders, thereby consolidating and deepening the cooperative ecosystem between schools and enterprises, while simultaneously contributing to the continuous renewal of knowledge systems and the ongoing optimization of the educational process. This inherent interconnectedness determines that the construction of an integrated education model must undergo systematic top-level design, as the absence or weakness of any single component will affect the overall educational effectiveness.

2. Realistic Dilemmas and Element Reconstruction of Integrated Education in Finance and Economics Majors

2.1 Multidimensional Manifestations of Realistic Dilemmas in Integrated Education

The structural dilemmas faced by finance and economics majors in promoting integrated education demonstrate systematic multidimensional characteristics. At the level of goal orientation, there exists a value tension between academic orientation and vocational orientation, with significant deviations between talent cultivation standards and industry demands for technical skills. This ambiguity directly results in a fragmented curriculum system, where traditional theoretical courses and emerging technical application courses lack effective cohesion. Cutting-edge content such as fintech and big data analysis struggles to be organically integrated into the existing teaching framework, creating disconnections and delays in the knowledge system.

At the implementation level, teaching activities show serious disconnection from real business scenarios, with a noticeable ecological gap between academic environments and professional working contexts. This situational disparity not only hinders students' knowledge transfer and skill application but also leads to structural imbalances between talent cultivation and employment needs. Meanwhile, collaborative barriers between educational institutions and industrial organizations further constrain educational outcomes. The cooperation depth in key areas such as resource sharing, personnel exchange, and joint curriculum development remains insufficient, making it difficult to form sustained and stable educational synergy, ultimately affecting the overall effectiveness of integrated education[3].

2.2 Analysis of Systemic Deficiencies in Educational Elements

The root cause of the current integrated education dilemmas lies in the systemic absence and structural imbalance of core elements. From the perspective of curriculum elements, there is a severe shortage of teaching resources that meet the requirements for integrating technical and skilled training. The development of project-based teaching materials and real case databases significantly lags behind, failing to support interdisciplinary knowledge integration and competency development. This absence of curriculum resources directly constrains the speed and quality of teaching content updates, creating a time lag between talent cultivation and industry development.

The shortage of qualified teaching staff is particularly prominent. The proportion of dual-qualified teachers possessing both theoretical depth and industrial practical experience remains relatively low, which restricts the implementation effectiveness of integrated teaching. The weakness in platform elements manifests in insufficient practical teaching conditions, with a scarcity of comprehensive training platforms capable of simulating real business environments. This deprives students of immersive learning experiences. Furthermore, the absence of mechanism elements results in a lack of institutional safeguards for school-enterprise cooperation, making it difficult to ensure the enthusiasm and sustainability of both parties' engagement in the educational process. The mutual constraints among these elements form a compound systemic bottleneck that can only be broken through comprehensive element reconstruction.

2.3 Theoretical Basis and Principle Framework for Element Reconstruction

Element reconstruction does not constitute a simple modification of the original system but rather

represents a comprehensive innovation based on systems theory and educational ecology. Systems theory emphasizes that the overall function of a system originates from nonlinear interactions among its elements, requiring the reconstruction process to focus on interconnections and structure. Educational ecology focuses on energy exchange and balance between the educational system and the external environment, suggesting that reconstruction must aim to enhance the system's adaptability to industrial and technological changes.

Based on this, element reconstruction should follow the following principle framework: first, the Systematic Principle, which involves designing curriculum, teaching staff, platforms, and mechanisms as an integrated whole; second, the Dynamic Adaptability Principle, which ensures the reconstructed element system possesses rapid responsiveness to evolving finance and economics practices and technological iterations; third, the Symbiotic Principle, which aims to construct an ecological structure enabling value creation for multiple stakeholders including schools, enterprises, and students, thereby establishing a foundation for the sustainable development of integrated education[4].

2.4 Integration Pathways and Interaction Mechanisms of Reconstructed Elements

The reconstructed educational elements must be transformed into practical educational capabilities through effective integration pathways and interaction mechanisms. The core of the integration pathway lies in using "projects" as the nexus to drive element fusion. By introducing real-world enterprise projects or designing highly simulated comprehensive projects, theoretical knowledge points, technical operation standards, and vocational skill requirements are integrated and embedded throughout the entire project completion process. This approach breaks down course boundaries and promotes the unified reconstruction of curriculum content, teaching methods, and learning evaluation around projects. Regarding interaction mechanisms, it is necessary to establish a collaborative mechanism characterized by "information sharing, resource complementarity, process co-management, and outcome co-creation."

This mechanism relies on establishing regular school-enterprise communication channels, jointly building and sharing teaching resource databases and practical training platforms, collaboratively developing talent cultivation plans and quality evaluation standards, and jointly conducting technological research and achievement transformation. Through such deep interaction, various educational elements are activated and generate synergistic effects, ultimately forming an integrated educational ecosystem capable of self-optimization and continuous evolution.

3. Systematic Construction of the Integrated Education Model under School-Enterprise Collaboration

3.1 Overall Objectives and Positioning of the Integrated Education Model

The overarching objective of the integrated education model is to systematically cultivate versatile finance and economics talents possessing an integrated knowledge structure, proficient technical application skills, and outstanding professional qualities. This goal positioning transcends the limitations of traditional education where knowledge transmission and skill training remain fragmented, emphasizing the coordinated development of theoretical understanding, technical operation, and professional judgment within authentic or highly simulated business contexts. Its core lies in shaping the ability to navigate uncertainty and address complex business challenges, enabling students to not only master declarative knowledge of "what things are" but also acquire procedural knowledge of "how to do them" and conditional knowledge of "when and why to apply specific approaches."

In terms of value orientation, this model commits to constructing a highly open and deeply coupled educational ecosystem. It requires the proactive integration of industry technical standards, business processes, and innovation culture throughout the entire talent cultivation process, thereby achieving dynamic balance between educational supply and industrial demand in scale, structure, and quality. This objective system provides value orientation and evaluation benchmarks for subsequent design phases, ensuring that talent cultivation activities consistently revolve around core goals while avoiding deviations due to localized optimization. The positioning of this model reflects higher education's strategic response to talent demands in the digital economy era, characterized by a fundamental shift in educational paradigm from supply orientation to demand orientation[5].

3.2 Collaborative Design of Curriculum System and Teaching Resources

The reconstruction of the curriculum system serves as the core pivot for implementing the integrated education model, with its design logic derived from the reverse decomposition and reconstruction of professional competencies in finance and economics. This system abandons the linear structure solely based on disciplinary knowledge, shifting toward a modular and project-based architecture centered around a "competency map." This architecture typically consists of four mutually supportive and progressively advancing modules: general literacy, professional theory, technical application, and comprehensive innovation. These modules are interconnected through specific competency linkages, forming a spiral progression path from fundamental cognition to complex comprehensive application.

The depth of collaborative design is reflected at the level of teaching resources and curriculum implementation. It requires the transformation of authentic business scenarios from partner enterprises, practical problems awaiting solutions, and currently utilized technological platforms into core learning resources through pedagogical adaptation. These resources, using "projects" as carriers, are systematically embedded into different curriculum modules, forming a series of challenging learning tasks. For example, authentic corporate investment and financing decision cases can be integrated with data analysis tools to design a long-term project requiring comprehensive application of financial management theories, Python data processing, and business acumen. This design compels students to proactively establish interdisciplinary knowledge connections while solving ill-structured problems, thereby achieving deep integration and meaningful construction of knowledge, skills, and literacy.

3.3 Integrated Development of Practical Platforms and Teaching Faculty

The integrated development of practical platforms aims to create a comprehensive environment that seamlessly connects learning spaces with professional workplaces. This platform transcends the simple superposition of physical spaces, instead constructing an educational community characterized by "virtual-real integration and internal-external connectivity" through digital technology. Its core involves establishing a cloud-based collaborative work platform capable of securely accessing desensitized real-time enterprise data streams while integrating various financial business simulation software and virtual simulation systems, thereby forming a highly realistic and dynamically configurable digital twin business environment.

Complementing platform development is the integrated development pathway for teaching faculty. The key lies in constructing a mechanism featuring "two-way appointments and complementary roles," which entails establishing a system for regular university faculty engagement in applied research and technical services within enterprises, while simultaneously creating permanent positions for industry experts to participate in teaching and research development on campus. The resulting "dual-mentor structure" team not only achieves complementary knowledge backgrounds but also plays distinct yet synergistic roles in the teaching process. Academic mentors focus on consolidating students' theoretical foundations and cultivating critical thinking, while industry mentors concentrate on imparting technical expertise, professional standards, and practical experience. Through their collaborative guidance in comprehensive project completion, they naturally integrate academic rigor with practical relevance, ensuring the educational process remains synchronized with industry development frontiers[6].

3.4 Systematic Optimization of Educational Evaluation and Quality Assurance

The systematic optimization of educational evaluation requires a shift from traditional summative, single-subject assessment toward a new paradigm characterized by process-oriented, multi-subject, and developmental evaluation. This paradigm emphasizes continuous tracking and evidence collection throughout the competency formation process, with evaluation design closely aligned to the core objectives of integrated education—namely, the comprehensive manifestation of knowledge integration capabilities, technical skill levels, and professional competencies. The evaluation subjects must expand to include multiple stakeholders such as enterprise mentors, project clients, and peer teams, while comprehensively utilizing diverse methods including project outcome defenses, recorded analysis of technical operation processes, and behavioral assessments in simulated professional scenarios to obtain multidimensional evidence regarding students' competency composition.

The systematic optimization of the quality assurance system relies on establishing a closed-loop management system integrating objective management, process monitoring, outcome assessment, and

feedback regulation. This system continuously collects internal and external data relevant to educational effectiveness through multiple channels, including formative assessments embedded in the teaching process, tracking surveys of graduate career development, satisfaction evaluations from partner enterprises, and analyses of industry technological changes. Using learning analytics technologies and data visualization tools to conduct in-depth mining and interpretation of this data, the system generates diagnostic reports concerning the health status of the educational model. These reports subsequently provide precise data support and decision-making basis for the dynamic updating of curriculum content, improvement of teaching methods, targeted enhancement of faculty capabilities, and iterative optimization of platform functions, thereby driving the entire educational system toward evidence-based continuous improvement and adaptive evolution.

Conclusion

This study, through systematic research on the integrated education model for "technical and skilled talents" in finance and economics majors under the school-enterprise cooperation framework, has constructed a comprehensive logical framework spanning theoretical foundation, dilemma analysis, and model development. The effectiveness of the integrated education model depends on a profound grasp of the three-dimensional theoretical logic encompassing knowledge integration, process coordination, and value symbiosis, coupled with the systematic reconstruction and synergistic interaction of core elements such as curriculum, teaching staff, platforms, and mechanisms. The constructed modular curriculum system centered on competency mapping, virtual-real integrated practical platforms, two-way appointment mechanisms for faculty, and multi-stakeholder closed-loop evaluation systems collectively form an organic and dynamically adaptive talent cultivation ecosystem.

This model provides a concrete implementation blueprint for finance and economics majors to respond to technological changes and enhance the quality of talent cultivation. Future research and practice could further focus on the implementation pathway variations of this model across different types of institutions, the customization of personalized educational paths based on learning analytics technologies, and the tracking and quantitative evaluation of its long-term educational effectiveness, thereby promoting continuous iteration and refinement of the model.

Fund Projects

2024 Ministry of Education Supply-Demand Matching Employment Education Project: "University Student Logistics Management Technical and Skilled Talent Employment Internship Base Project in the Pre-employment Model of Post Internship" Project Number: 2024110326136

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