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Research on the Construction of Financial Laboratories under the Framework of "One Linkage, Two Integrations, and Three Synergies"

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Abstract: Current financial education faces prominent challenges such as insufficient industry-education collaboration and lagging practical teaching, which constrain the cultivation of applied financial talents. This study innovatively proposes a "One Linkage, Two Integrations, and Three Synergies" construction paradigm: One Linkage: Precise alignment between teaching scenarios and professional scenarios to achieve seamless school-enterprise resource integration; Two Integrations: Dual integration of curriculum content with occupational standards, and teaching processes with production workflows, to restructure the practical teaching system; Three Synergies: A synergistic mechanism involving government, schools, and enterprises to consolidate multidimensional resources. This model aims to resolve the structural mismatch between talent supply and industry demands, providing theoretical innovation and practical guidance for the development of financial laboratories.

Keywords: financial laboratories, one linkage, two integrations, three synergies

Introduction

In the era of digital economy, the rapid innovation of financial business models has exacerbated structural imbalances in talent cultivation systems. Traditional financial laboratories commonly face practical challenges, including a disconnection between teaching content and industry trends, a separation of training scenarios from real-world operations, and ineffective mechanisms for industry-education collaboration. These issues have led to a significant mismatch between the quality of talent cultivation and actual industry demands. The key to resolving this contradiction lies in constructing a new type of educational platform with deep industry-education integration, achieving substantive reform in the educational supply side through a reconstructed laboratory development paradigm. This study focuses on this core proposition, aiming to explore innovative pathways for financial laboratory construction.

1. The Conceptual Framework of the "One Linkage;Two Integrations;and Three Synergies" Financial Laboratory

The "One Linkage, Two Integrations, and Three Synergies" financial laboratory represents an innovative experimental teaching paradigm grounded in industry-education integration theory and interdisciplinary innovation principles. Its core lies in addressing structural contradictions in financial education - particularly the "theory-practice disconnect" and "resource fragmentation" - through systematic mechanism design, thereby achieving deep integration of the education chain, industry chain, and innovation chain. This model operates through three fundamental dimensions:

(1) Precision alignment between instructional scenarios and professional contexts through virtual simulation technologies ("One Linkage")[1];

(2) Curriculum system reconstruction by incorporating occupational competency frameworks and industrial technical standards ("Two Integrations");

(3) Multi-stakeholder resource integration via university-enterprise, inter-university, and university-local government collaboration mechanisms to establish an open, shared experimental teaching ecosystem ("Three Synergies").

Operationally, this model reconstructs competency development pathways through a progressive "value transm ission-process reengineering-ecological symbiosis" framework: Cognitive transformation is facilitated through virtual -physical scenario integration;Competency iteration loops are formed via occupational standard internalization;Reso urce allocation efficiency and technological innovation emerge from collaborative networks.Methodologically, this f ramework transcends the unidimensional limitations of traditional experimental teaching. Through its tiered "conte xtualized construction-standardized development-ecological incubation" system, it elevates financial laboratory educ ation from instrumental training to paradigmatic innovation.

2. The Necessity of Constructing the "One Linkage; Two Integrations,;and Three Synergies" Financial Laboratory

2.1 Addressing the Challenges of On-Campus Internships

Finance education now faces dual challenges in practical training: While FinTech development has created new demands for quantitative analysis positions, insufficient industry-academia collaboration results in scarce internship opportunities, often limited to basic operational roles. Meanwhile, traditional curricula overemphasize theoretical knowledge, and teaching methods like virtual simulation fail to accurately replicate real business processes, hindering students' ability to develop comprehensive professional cognition.

The "One Linkage;Two Integrations;and Three Synergies" financial laboratory addresses these issues by: Simulating authentic workflows from banking, securities, and insurance sectors (e.g., virtual trading platforms, financial big data analysis systems); Creating immersive "campus-as-workplace" training environments through deep integration of instructional and professional scenarios. For instance, after implementing commercial bank operation platforms and futures trading simulation systems, students can complete end-to-end processes from account opening, risk assessment to investment decisions, significantly improving on-campus internship participation rates. This innovative approach effectively mitigates traditional internship resource shortages through its "virtual-physical integration" pedagogy, which finally facilitates direct student engagement with financial positions, bridges the gap between traditional and modern teaching methodologies, drives comprehensive optimization of teaching systems, curriculum structures, instructional materials, and pedagogical tools, finally accelerates the reform of applied talent cultivation.

2.2 Resolving the Structural Imbalance Between Talent Supply and Demand

The FinTech revolution and digital transformation have created demand for interdisciplinary professionals, yet traditional education models continue to produce graduates with mismatched competencies due to outdated curricula and disconnected practical training. While industry increasingly requires dual-capability in both finance and technology (e.g., AI and blockchain applications), most universities remain confined to single-discipline knowledge systems with inadequate integration of emerging technical tools. Concurrently, as financial institutions elevate their requirements for practical skills like data analytics, conventional laboratories remain limited to software operation training without cross-functional, process-integrated practice platforms.

The "One Linkage;Two Integrations; and Three Synergies" financial laboratory addresses these gaps through curriculum-Industry Alignment by embedding professional certification standards and technical specifications into lab course design, through scenario-Based Learning by Simulating real business environments (quantitative investing, intelligent risk control, etc.) via virtual reality platforms to establish a progressive "theory-simulation-practical application" training pathway, through Early Career Adaptation by enabling students to acclimate to technological evolution and job requirements pre-graduation. At the same time, we need to establish joint laboratories with enterprises to share data, cases, and technical resources, continuously updating teaching systems based on real-time industry feedback through Dynamic Curriculum Optimization and realize Closed-Loop Improvement by fundamentally resolving the "theory-practice

disconnect" through demand-responsive education. This model serves as both a pivotal mechanism for deepening education supply-side reform and an essential driver for high-quality development in the financial sector.

2.3 Advancing Industry-Education Integration to a Deeper Level

While industry-education integration has achieved phased progress in financial education in recent years, most university-enterprise collaborations remain superficial. Enterprises hesitate to open core business scenarios due to confidentiality and operational continuity concerns, while universities face constraints from rigid curricula and the academia-industry disconnect, resulting in fragmented cooperation. This supply-demand mismatch leads to inadequate R&D support, failing to meet either the cross-domain technology integration demands of rapidly evolving FinTech or the systematic cultivation of "finance + technology + compliance" interdisciplinary talent. A breakthrough in deep-level collaboration mechanisms is urgently needed.

The construction of the "One Linkage;Two Integrations;and Three Synergies" financial laboratory serves as a critical solution to resource fragmentation and a catalyst for deeper education-industry chain collaboration. The digital transformation of the financial department urgently need to form a technology R&D alliances between financial institutions and universities. Establishing joint laboratories integrating real business data with academic research resources to promotes the integration of industry, academia, research, and application. The inter-University Collaboration will Leverages virtual teaching/research platforms to break down disciplinary barriers and enables cross-institutional sharing of experimental case databases and teaching resources, finally eliminating redundant investments through resource pooling. The University-Local Government Partnership aligns with regional economic development needs, positions laboratories as technical support platforms for local industrial transformation enhances scenario-based and practical training through industry feedback. This model reconstructs the industry-education ecosystem across three dimensions. As a core pathway for higher education to implement the national policy of "deepening industry-education collaborative innovation," this approach represents a paradigm shift from fragmented cooperation to systematic integration[2].

3. The Specific Pathways for Constructing the "One Linkage;Two Integrations;and Three Synergies" Financial Laboratory:

The construction of the "One Linkage;Two Integrations;and Three Synergies" financial laboratory requires promoting deep integration of the education chain, industry chain and innovation chain through systematic thinking, with the specific implementation pathways covering the following core contents:

3.1 Alignment between teaching scenarios and professional scenarios

It simulates real financial environments to build a virtual simulation experimental teaching platform that completely replicates financial market operations and creates a highly realistic professional work atmosphere. The platform integrates financial market data, financial tool simulations, trading systems and risk management tools, etc., providing students with an immersive learning experience through rich interface elements and interactive methods. The platform also contains abundant teaching resources and numerous real financial cases covering multiple financial sectors such as banking, securities and insurance, as well as technological fields including artificial intelligence applications, blockchain technology and data mining, providing students with rich learning materials and practical opportunities.

3.2 Integration of Curriculum Content with Professional Standards, and Integration of Teaching Processes with Production

3.2.1 The integration of curriculum content with professional standards

Optimizing the curriculum system according to the professional standards and technical specifications of the financial industry to ensure the practicality and forward-looking nature of the course content. By introducing the latest industry cases, reports, and policies and regulations, the curriculum system is restructured with a focus on professional positions and close alignment with job requirements. Using work processes as the orientation and professional standards as the objectives, structured and sequential typical job tasks are selected to systematically design teaching projects, reorganize course content, and reshape classroom teaching models, thereby implementing "position-course integration." Simultaneously, the content of vocational skills competitions is incorporated into experimental teaching content,

competition projects into practical projects, and competition training into practical teaching. Examination evaluations, 1+X certificate assessments, and competition evaluations are integrated into teaching assessment and evaluation systems, forming a diversified and multi-dimensional teaching evaluation framework and achieving “competition-certification integration”[3].

3.2.2 Integration of Teaching Processes with Production Processes

A deep integration mechanism with financial enterprises will be established, including jointly building financial laboratories, co-cultivating talents, sharing teaching resources, and collaboratively developing specialized experimental courses. Through approaches such as “inviting enterprises into campuses” and “delivering education into enterprises,” students will be provided with more practical opportunities and authentic learning experiences[4]. Financial industry experts and corporate mentors will be invited to participate in the teaching process, forming a “dual-qualification” teaching team alongside academic faculty members. Together, they will develop talent cultivation programs and teaching plans to ensure close alignment between instructional content and industry needs[5].

3.3 Coordinating Multi-party Resources to Build a Win-Win Education System

3.3.1 School-enterprise Collaborative Education

Deepening cooperation with financial enterprises to jointly establish a school-enterprise collaborative education mechanism. By jointly developing talent training programs, co-building practical teaching bases, and carrying out scientific research projects together, resource sharing and complementary advantages between schools and enterprises can be achieved[6]. Enterprises can provide schools with internship and training opportunities as well as employment positions, while schools can provide enterprises with talent training and intellectual support, creating a win-win situation.

3.3.2 Inter-university Collaborative Development

Different universities often possess distinct characteristics and unique teaching resources in the construction of financial laboratories. Through inter-university collaboration, resource sharing and complementarity can be achieved, facilitating the joint development of specialized financial courses that integrate the strengths of various institutions to create a high-quality curriculum system[7]. Faculty members can enhance teaching quality by exchanging pedagogical methods and research experiences through mutual visits, joint research projects, and participation in each other's teaching activities, thereby promoting the overall improvement of financial education.

3.3.3 University-Local Collaborative Innovation

As an important platform for universities to serve the local economy, financial laboratories can more precisely align with regional financial needs through university-local collaboration, ensuring that the laboratory's functional layout, equipment configuration, and teaching/training content closely match actual industry requirements. By establishing close cooperation with local governments, financial institutions and other stakeholders to jointly develop talent cultivation plans, optimize curriculum design, and strengthen internship and practical training - while leveraging policy planning and project guidance - this approach promotes deep integration between the “academic discipline chain” and “industrial chain.” Such collaborative innovation not only helps cultivate more financial professionals who meet the development needs of local economies, but also effectively integrates regional advantage resources to drive innovative development in the financial industry and facilitate the transformation and upgrading of regional economies.

4.Conclusion

This study aims to systematically address prominent issues in traditional financial education—such as difficulties in on-campus student internships, mismatches between talent supply and demand, and limited forms of industry-education integration—by constructing a “One Linkage;Two Integrations;and Three Synergies” financial laboratory development paradigm. The “One Linkage""mechanism establishes a bridge between teaching scenarios and professional environments, creating a dynamic response system driven by university-enterprise collaboration. The “Two Integrations” approach achieves precise alignment between curriculum content and occupational standards while ensuring substantive unity between teaching processes and production workflows, forming a comprehensive “theory-practice-application” cultivation model. Leveraging the “Three Synergies” framework integrates resources from government, industry, and academia to

build a collaborative education ecosystem characterized by "joint planning, shared resources, and co-created outcomes." Future efforts can enhance the deep coupling between educational supply and industrial demand by refining dynamic evaluation mechanisms and expanding collaborative network dimensions, thereby providing more measurable implementation pathways for financial education reform in the new era.

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