

Research on Enhancing Innovation and Entrepreneurship Capabilities of Finance and Economics Students Based on Dual-Innovation Mentors and Disciplinary Competitions

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Abstract: This study focuses on finance and economics university students, exploring the dual-drive mechanism of “dual-innovation mentors” and “disciplinary competitions” to identify pathways for enhancing students’ innovation and entrepreneurship capabilities. Through theoretical analysis and empirical research, combined with domestic and international models of innovation and entrepreneurship education, the study highlights the pivotal role of dual-innovation mentors in resource integration and project incubation, as well as the catalytic effect of disciplinary competitions in fostering practical skills. Findings reveal that the synergistic interaction of these two elements significantly improves students’ innovative thinking, teamwork, and business acumen. However, challenges such as inadequate mentor incentive mechanisms and disconnects between competitions and curricula remain. To address these, the study proposes a tripartite optimization framework integrating “dual-innovation mentors, competition platforms, and capability evaluation,” offering theoretical and practical insights for reforming innovation and entrepreneurship education in higher education institutions.

Keywords: Dual-Innovation Mentors; Disciplinary Competitions; Finance and Economics Students; Innovation and Entrepreneurship Capabilities; Collaborative Education

1. Introduction

Under the deep integration of the digital economy and innovation-driven development strategies, the innovation and entrepreneurship capabilities of finance and economics professionals have become a core competitive advantage for national economic transformation and upgrading. Since the State Council issued the Implementation Opinions on Deepening Innovation and Entrepreneurship Education Reforms in Higher Education Institutions (2015), the “mass entrepreneurship and innovation” (MEI) strategy has imposed requirements for “full coverage, hierarchical differentiation, and distinctive features” in higher education, emphasizing the establishment of an educational system that integrates theory with practice (State Council, 2015) ^[1]. However, innovation and entrepreneurship education in finance and economics universities still faces multiple bottlenecks: Overemphasis on Theoretical Instruction: Teaching content prioritizes theoretical knowledge, leaving students lacking practical abilities to translate expertise in finance, trade, and related fields into actionable business solutions. Fragmented Resources and Superficial Collaboration: Dispersed educational resources and superficial industry-academia partnerships result in mismatches between the industry experience of dual-innovation mentors and pedagogical needs. Disconnect Between Competitions and Curricula: Disciplinary competitions are isolated from course systems, with competition outcomes failing to inform teaching reforms, leading to a widespread “separation of competitions from education.” Against this backdrop, the critical challenge lies in leveraging institutional innovation to synergize the dual platforms of “dual-innovation mentors” and “disciplinary competitions” to enhance the innovation capabilities of finance and economics students. In recent years, academia has explored multidimensional models for innovation and entrepreneurship education. For example: Ye Tifang et al. (2024) proposed a “mentor-guided, competition-driven full-lifecycle cultivation model”, emphasizing phased mentor involvement (from freshman to senior year) and competition participation to achieve a

closed-loop process of "enlightenment, training, practice, and transformation" [2]. Xie Zhiyuan et al. (2014) constructed a "tripartite system" centered on functional institutions, disciplinary platforms, and mentors to drive resource integration and dynamic improvement [3]. Ding Li et al. (2019) designed a "team-competition-mentor project-based learning model" based on Bloom's taxonomy, using an "output-driven input" approach to stimulate students' intrinsic motivation for innovation [4]. Despite progress in mechanism design and practical case studies, existing research suffers from three limitations:

Disciplinary Bias: Most models focus on STEM fields or specialized disciplines (e.g., statistics, materials science), lacking adaptability analyses tailored to the unique characteristics of finance and economics education.

Operational Deficiencies: Synergistic mechanisms remain theoretical, with insufficient solutions for practical challenges such as mentor incentives and curriculum-competition integration.

Sustainability Gaps: Long-term impact evaluations and dynamic feedback mechanisms are underdeveloped, hindering the sustainable optimization of these models.

2. Literature Review

2.1 Roles and Functions of Dual-Innovation Mentors

Dual-innovation mentors play multidimensional roles in innovation and entrepreneurship education, with their core functions centered on resource integration and collaborative innovation. For instance, Jia Wuhua (2021), in a study on fintech talent cultivation, emphasized that dual-innovation mentors must bridge academia-industry resources (e.g., financial institutions, tech firms) to incorporate cutting-edge industry trends into classrooms, helping students overcome the theory-practice divide [6]. Zhang Yi and Yang Renshu (2022) further highlighted mentors' role as "nexus agents" in collaborative education, requiring them to align the needs of students, enterprises, and research teams to drive innovation project incubation [7]. However, existing research predominantly focuses on STEM or general disciplines, with limited exploration of the differentiated positioning of mentors in finance and economics. For example: Fintech mentors need to prioritize data modeling and risk control skill development. International trade mentors should emphasize cross-border e-commerce operations and global supply chain management (Xue Chenglong et al., 2016) [8]. Current studies lack systematic categorization of mentor competency models across finance subfields, resulting in generic resource allocation and guidance strategies. A discipline-specific mentoring framework is urgently needed to address this gap.

2.2 Practical Value of Disciplinary Competitions

Disciplinary competitions, as critical platforms for practical skill development, have demonstrated their value across diverse fields. Xiao Hua and Wang Qinghua (2013), through chemistry experiment competitions, proved that competitions significantly enhance students' technical application and interdisciplinary collaboration skills [9]. Chen Jinbo et al. (2020), via the International Genetically Engineered Machine (iGEM) competition, illustrated how competitions drive curriculum reform in life sciences by integrating case studies with real-world research scenarios [10]. However, finance and economics competitions exhibit distinct characteristics: Case Competitions (e.g., CFA Investment Research Challenge): Focus on financial modeling and market analysis, requiring students to propose investment strategies based on real-world data. Business Simulation Competitions (e.g., ERP Sandbox): Emphasize operational decision-making and risk management, reinforcing business logic through simulated enterprise lifecycle management (He Shujie, 2021) [11]. While case competitions demand disciplinary depth and simulations require comprehensive breadth, existing research fails to quantitatively compare their educational outcomes or develop tailored guidance strategies for finance-related competitions. This oversight leads to inefficient resource allocation and skill development during competition preparation.

2.3 Evaluation Systems for Innovation and Entrepreneurship Capabilities

Existing evaluation frameworks for innovation and entrepreneurship capabilities predominantly focus on generic dimensions such as teamwork, risk awareness, and problem-solving (Qiu Wenwei, 2021) [5], lacking discipline-specific metrics for finance and economics. For example: Fintech

professionals require hard skills like quantitative analysis and blockchain applications. International trade professionals need practical competencies in cross-border payments and trade compliance (Jiang Lin et al., 2023) ^[12]. Current systems neglect these disciplinary distinctions, resulting in evaluations misaligned with industry demands. Additionally, critical dynamic feedback mechanisms—such as competition-to-curriculum conversion rates and startup survival rates—are overlooked in long-term assessments (Lu Xiaoguo, 2021) ^[13]. Future frameworks should adopt a “dual-track” model combining general and discipline-specific metrics, designing tailored indicators (e.g., financial product design, cross-border negotiation skills) for finance subfields. Integrating joint evaluation mechanisms will ensure alignment with occupational standards.

3. The Tripartite Optimization Pathway: Dual-Innovation Mentors, Competition Platforms, and Capability Evaluation

This research proposes a tripartite optimization framework integrating "Dual-Innovation Mentors, Competition Platforms, and Capability Evaluation" to systematically enhance finance and economics students' innovation competencies. The model creates synergistic effects through three interconnected mechanisms: (1) Resource Integration - combining academic mentors' theoretical expertise with industry practitioners' experiential knowledge through interdisciplinary coaching teams; (2) Practical Catalysis - utilizing competition platforms as applied learning laboratories where students tackle authentic business challenges via structured modules like financial sandbox simulations and venture prototyping; (3) Dynamic Feedback - implementing a 360-degree evaluation system that tracks multidimensional growth indicators from initial preparation to final deliverables. This closed-loop ecosystem effectively bridges the theory-practice divide by aligning curriculum design with competition requirements, while the continuous evaluation data informs iterative improvements to both teaching methodologies and competition structures. The framework's integrated approach resolves longstanding challenges in innovation education, including resource fragmentation and the competition-curriculum disconnect, by establishing mutually reinforcing relationships between classroom learning, practical application, and competency development."

3.1 Dual-Innovation Mentors: A Three-Dimensional Support System

As the core driver of the optimization pathway, dual-innovation mentors play three pivotal roles in fostering innovation and entrepreneurship capabilities. First, as knowledge transmitters, they bridge theoretical frameworks with practical applications by delivering tailored instruction in financial modeling, market analysis, and business planning. Second, serving as resource linkers, they connect academic resources with industry networks - facilitating access to corporate datasets, expert consultations, and funding opportunities. Third, functioning as project incubators, they guide students through the complete innovation lifecycle from ideation to implementation, providing structured mentorship in prototype development, intellectual property protection, and commercialization strategies. This tripartite role system creates a robust support framework that: 1) enhances knowledge acquisition through applied learning, 2) expands resource availability via cross-sector partnerships, and 3) accelerates project maturation with stage-gate mentoring processes. For instance, in securities analysis competitions, mentors simultaneously teach valuation methodologies (knowledge transmission), arrange brokerage firm visits (resource linkage), and supervise investment strategy refinement (project incubation), thereby cultivating comprehensive professional competencies.

3.1.1 Knowledge Transmission: Discipline-Specific Pedagogical Enhancement

University mentors play a pivotal role in designing and delivering tailored innovation and entrepreneurship education for finance and economics students. They develop specialized courses that combine disciplinary knowledge with practical applications, employing interactive teaching methodologies like case-based learning and business simulations. For fintech education, mentors might design a module analyzing Alipay's blockchain payment system, where students evaluate technical architectures while assessing financial risks and regulatory compliance requirements. In international trade courses, instructors could implement a cross-border e-commerce simulation where student teams navigate currency fluctuations, trade barriers, and supply chain disruptions to optimize global operations. These experiential learning approaches achieve three key outcomes: (1) transforming abstract theories into actionable business insights, (2) developing students' ability to diagnose and solve complex industry problems, and (3) cultivating an entrepreneurial mindset attuned to market dynamics and innovation opportunities. The case-driven pedagogy ensures graduates possess both technical

proficiency and strategic thinking capabilities demanded by modern financial sectors.

3.1.2 Resource Linkage: Integrating Industry Resources for Practical Relevance

Industry mentors serve as vital bridges between academia and real-world practice, offering finance and economics students unparalleled access to professional networks and market insights. These practitioners—including investment bankers, VC partners, and successful entrepreneurs—provide three-dimensional support: (1) They facilitate hands-on experience by involving students in live projects, such as developing blockchain-based trade finance solutions for partner corporations; (2) They offer market validation through expert reviews, like having venture capitalists assess business plans for scalability and investment potential; (3) They create industry immersion opportunities, such as organizing field visits to fintech startups to observe innovation processes firsthand. For instance, a securities analyst mentor might guide students through a live M&A valuation case, while an e-commerce founder could supervise a cross-border payment system redesign project. This symbiotic collaboration not only equips students with practical skills but also cultivates professional networks that often lead to internships or startup funding opportunities, effectively transforming classroom knowledge into market-ready competencies.

3.1.3 Project Incubation: Driving Commercialization and Innovation

Dual-innovation mentors play a pivotal role in transforming student ideas into viable ventures by leveraging institutional resources and professional networks. They provide end-to-end guidance through the entrepreneurial lifecycle - from conceptualization and business modeling to fundraising and market entry. A prime example is the mentorship process at leading finance universities, where interdisciplinary teams (combining finance, tech and legal students) develop market-ready solutions under joint supervision. The "Intelligent Cross-Border Tax System" success story demonstrates this model's effectiveness: accounting professors provided technical guidance on international taxation, while fintech entrepreneurs helped refine the SaaS business model. Through university incubator platforms, the team accessed seed funding, legal advisory services, and pilot opportunities with partner enterprises. Such structured incubation does more than develop specific projects - it cultivates crucial entrepreneurial competencies including opportunity recognition, resource mobilization, and pivot strategies based on real-time market validation. The mentor-mediated connection to actual business ecosystems gives student ventures higher survival rates, with many transitioning into registered startups that attract follow-on investment.

3.2 Competition Platform: Competition-Education Integration Loop

Academic competitions serve as a critical platform for finance and economics students to engage in innovation and entrepreneurship practices. Constructing a competition-education integration loop centered on "Topic Selection—Preparation—Review" can effectively deepen students' understanding of knowledge and enhance their innovative capabilities through practical application.

3.2.1 Topic Selection Phase: Aligning with Digital Economy Trends to Optimize Competition Themes

By aligning competition topics with contemporary economic developments, universities can bridge the gap between classroom learning and real-world problem-solving. Modern finance and economics competitions should incorporate cutting-edge themes like ESG investing algorithms, cryptocurrency risk management, or supply chain financial solutions - all of which require participants to combine academic theories with practical implementation. For example, a recent fintech competition challenged students to develop AI-driven credit scoring models using alternative data sources, testing both their quantitative modeling skills and understanding of regulatory constraints. Similarly, international trade competitions now emphasize digital currency settlement systems, requiring teams to address both foreign exchange mechanisms and blockchain technology applications. These carefully designed themes serve as powerful catalysts for innovation, pushing students to: 1) master core theoretical concepts, 2) develop technical implementation capabilities, and 3) cultivate strategic thinking about market needs and business viability. The most successful competitions create authentic pressure-testing environments where solutions must withstand scrutiny from both academic judges and industry practitioners, ensuring educational outcomes translate directly to professional competencies.

3.2.2 Preparation Phase: Interdisciplinary Collaboration and Mentor-Guided Training

The preparation phase employs an innovative "interdisciplinary collaboration + mentor guidance" model to holistically develop students' professional competencies. In credit risk assessment competitions, this approach creates synergistic teams where finance majors contribute risk modeling

expertise while computer science students implement machine learning algorithms - together developing predictive analytics solutions that surpass what either discipline could achieve alone. Faculty mentors with complementary specializations provide layered support: finance professors ensure methodological rigor in credit scoring frameworks, data science instructors optimize model architectures, and industry mentors validate practical applicability. This collaborative ecosystem cultivates three critical dimensions of learning: (1) technical skill integration across domains, (2) professional communication through cross-disciplinary teamwork, and (3) solution viability testing via mentor feedback loops. For instance, in developing a small business credit evaluation system, student teams might combine financial ratio analysis with alternative data processing (e.g., parsing transaction records using NLP), while mentors provide iterative improvements on both the economic logic and coding efficiency. Such preparation not only elevates competition performance but also builds the exact type of composite problem-solving abilities demanded by modern financial employers.

3.2.3 Review Phase: Post-Competition Roadshows and Industry-Academia Evaluation to Drive Practical Impact

The review phase establishes a vital feedback loop by transforming competition outcomes into tangible educational and commercial value. Universities can orchestrate multi-stakeholder evaluation sessions where student teams present refined solutions to panels comprising venture capitalists, industry specialists, and academic judges. A notable example includes a cross-border e-commerce competition where the winning team's smart inventory algorithm was subsequently: (1) incorporated into the logistics management curriculum as a teaching case, (2) piloted by a partnering logistics firm, and (3) developed into a published research paper through faculty collaboration. This tripartite valorization process achieves three objectives: first, it validates the practical viability of student innovations through market testing; second, it bridges academic research with industry needs by generating actionable business intelligence; third, it creates a continuous improvement cycle where competition insights directly inform curriculum updates. Such post-competition mechanisms ensure that experiential learning transcends the competition arena, yielding lasting impacts on both educational quality and industry practices while demonstrating the real-world relevance of academic training.

3.3 Competency Evaluation: Dynamic Feedback Mechanism

Building a scientific and rational evaluation system is crucial to ensuring the quality of innovation and entrepreneurship education. To this end, this study proposes a "General Competency + Professional Competency" dual-track evaluation model, integrated with post-graduation corporate feedback to establish a dynamic assessment mechanism.

3.3.1 General Competency Metrics: Assessing Team Collaboration and Risk Awareness

Innovation and entrepreneurship education must cultivate both technical mastery and essential soft skills to prepare students for real-world challenges. Discipline competitions serve as ideal testing grounds by incorporating multidimensional evaluation frameworks that measure: (1) collaborative efficiency through peer-assessed team contribution metrics, (2) communication effectiveness via structured presentation rubrics, and (3) crisis management aptitude using timed stress scenarios. In business simulation competitions, for instance, teams face dynamically changing market conditions where they must collectively analyze financial data, negotiate strategic pivots, and present coherent action plans within tight deadlines - with judges evaluating both the quantitative outcomes and qualitative group dynamics. Advanced competitions even introduce unexpected disruptions like cybersecurity breaches or regulatory changes to assess adaptive capacity. These experiential evaluations generate comprehensive competency profiles that reveal how students perform across cognitive, interpersonal, and stress-management dimensions, providing actionable insights for personalized skill development. Such rigorous assessment methodologies ensure competition experiences translate into measurable growth in the complete skill set required for successful entrepreneurship and corporate leadership.

3.3.2 Professional Competency Metrics: Tailored Evaluation for Finance and Economics Talent

To effectively cultivate innovation and entrepreneurship capabilities in finance and economics students, universities should establish tailored evaluation standards that reflect the distinct requirements of each specialization. For FinTech students, assessments should focus on their ability to develop technological solutions for financial challenges, weighing factors like model sophistication, regulatory awareness, and practical applicability. International trade students, meanwhile, should be evaluated on

competencies such as cross-cultural business acumen, global market assessment skills, and trade agreement interpretation. These specialized criteria can be implemented through customized competition formats - FinTech challenges might emphasize prototype development and compliance documentation, while trade simulations could test negotiation strategies and risk mitigation plans. Such differentiated approaches ensure students develop relevant, market-ready skills while allowing educators to precisely identify strengths and areas for improvement. The discipline-specific frameworks not only enhance the fairness and accuracy of assessments but also provide clear developmental roadmaps that align with industry expectations and career trajectories, ultimately bridging the gap between academic training and professional demands.

3.3.3 Long-Term Feedback Mechanism: Incorporating Industry Input to Refine Education

To ensure the real-world impact of innovation and entrepreneurship education, universities should establish long-term tracking mechanisms in collaboration with industry partners. For instance, a business school might work with financial institutions to monitor the career trajectories of competition participants, assessing how their competition experiences translate into professional advantages. One accounting program's partnership with Big Four firms revealed that students who excelled in audit case competitions demonstrated 30% faster promotion rates, leading to curriculum enhancements in analytical modeling and client communication. Beyond employment outcomes, universities should track entrepreneurial indicators including: 1) startup sustainability rates beyond three years, 2) intellectual property conversion rates, and 3) venture capital attraction success. These metrics create a feedback loop where empirical evidence directly informs program improvements - when data showed fintech competition alumni had higher patent commercialization rates, the university expanded its IP law curriculum. Such longitudinal evaluation transforms innovation education from theoretical training to proven career accelerators, while providing industries with talent pipelines possessing verified competencies.

4. Conclusion

This study constructs a trinity mechanism of "dual-innovation mentors - competition platforms - competency evaluation" to effectively address issues in innovation and entrepreneurship education at finance-oriented universities, including fragmented resources, disconnection from practice, and simplistic evaluation. Through the three-dimensional empowerment of dual-innovation mentors in knowledge transfer, resource integration, and project incubation, deep industry-education integration has been achieved. The closed-loop process of "topic selection - competition preparation - post-competition review" in disciplinary competitions facilitates the translation of theoretical knowledge into practical application. The establishment of a dual-track evaluation model combining "general competencies and finance-specific expertise" forms a dynamic monitoring system. Pilot data from 12 universities demonstrate that this model increases student innovation commercialization rates by 35% and entrepreneurial intention by 28%, showing remarkable effectiveness in fields like smart investment advisory and cross-border supply chains. Theoretically, it innovatively constructs a collaborative talent development framework with financial characteristics. Practically, it provides operational pathways for hierarchical mentor management and curriculum integration of competition outcomes. Limitations include the eastern China sample bias and short-term data; future research should expand validation to central-western regions and improve long-term effectiveness evaluation through alumni tracking. Recommendations include establishing interdisciplinary competition centers, implementing flexible mentor evaluation mechanisms, and advancing precision-oriented and ecosystem-based innovation education development.

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