Effectiveness of Innovative Capability Cultivation in New Business Education Undergraduate Mentorship: A Jiangsu University Case Study

Naili Sun[1], Xinwei Zhang[1], Saijuan Du[2]

[1] Business School, Jiangsu Normal University, Xuzhou 221116, Jiangsu, China

[2] Undergraduate Academic Affairs Office, Jiangsu Normal University, Xuzhou 221116, Jiangsu, China

Abstract: This study explores the effectiveness of the undergraduate mentorship system in New Business Education (NBE) by analyzing a Jiangsu-based university case study. Empirical findings confirm its role in enhancing student engagement in research and academic competitions, fostering innovation capacity. However, challenges such as inadequate research guidance, low participation rates, and suboptimal outputs persist. To address these issues, this paper proposes strategic improvements, including refining the selection mechanism, enhancing performance evaluation, and optimizing talent development frameworks. These insights contribute to advancing mentorship efficacy in cultivating interdisciplinary business professionals.

***Keywords*:** new business education; undergraduate mentorship system; innovation capacity cultivation mechanism

1. Introduction

The rapid advancement of technologies such as big data and artificial intelligence is reshaping economic structures, resource allocation, and service delivery, presenting both challenges and opportunities for higher education (Zhang et al., 2024). Recognizing education as a cornerstone of national development, China's policies emphasize aligning educational reforms with technological progress to enhance innovation and talent cultivation.

Traditional business education struggles to meet evolving industry demands, necessitating the development of NBE. As an interdisciplinary framework integrating emerging technologies and pedagogical innovations, NBE aims to cultivate professionals equipped with advanced skills, entrepreneurial capabilities, and adaptive problem-solving abilities (Huo & Liu, 2023). Despite theoretical advancements, practical challenges persist in optimizing NBE implementation (Wang et al., 2024).

The undergraduate mentorship system bridges academic learning with innovation by fostering critical thinking and problem-solving through personalized guidance. Leading Chinese universities have pioneered mentorship initiatives, yet inconsistencies highlight the need for systemic refinement (Sun et al., 2024; Peng, 2023).

This study examines the impact of the undergraduate mentorship system on student innovation within the NBE framework, utilizing six years of data from a Jiangsu-based business school. By analyzing student engagement, identifying operational challenges, and proposing strategic improvements, this research contributes to strengthening NBE implementation and advancing innovation-driven business education.

2. Literature Review

New Business Education (NBE) integrates interdisciplinary knowledge, innovative pedagogy, and industry collaboration to cultivate technologically proficient graduates (Wang et al., 2024). Studies emphasize curriculum integration with data analytics and computer science (Qi et al., 2024), discussion-based teaching over lectures (Song, 2024), and competition-driven learning to enhance practical skills (Kang & Guo, 2024). However, rigid credit systems hinder rapid adoption of reforms.

Since the Ministry of Education's 2001 Guidelines for Enhancing Undergraduate Education Quality, mentorship programs have been implemented in Chinese universities, initially focusing on institutional design (Jing, 2005; He, 2012). Recent studies highlight mentorship's role in fostering research and innovation, particularly in Emerging Engineering Education (Wu et al., 2022; Sun et al., 2023), but empirical studies on NBE-specific mentorship remain limited.

While research underscores the need for an integrated NBE talent development framework, gaps persist. Most mentorship studies adopt faculty-centric perspectives, overlooking student experiences. Further empirical research is needed to optimize mentorship's role in fostering innovation.

3. Mechanisms and Effectiveness Analysis

3.1 Analysis of Innovation Capability Cultivation Mechanisms

The undergraduate mentorship system in NBE addresses traditional business education's limitations by enhancing student innovation through faculty-student relationships. This system mitigates information asymmetry in academic planning and integrates theoretical learning with practical application. It fosters innovation through two key dimensions: knowledge accumulation and practical engagement (see Figure 1). Mentors guide students in interdisciplinary exploration beyond core curricula while providing hands-on research experience, enhancing problem-solving, collaboration, and critical thinking skills. Tailored mentorship further supports students in overcoming learning barriers and unlocking innovation potential (Wang et al., 2024).

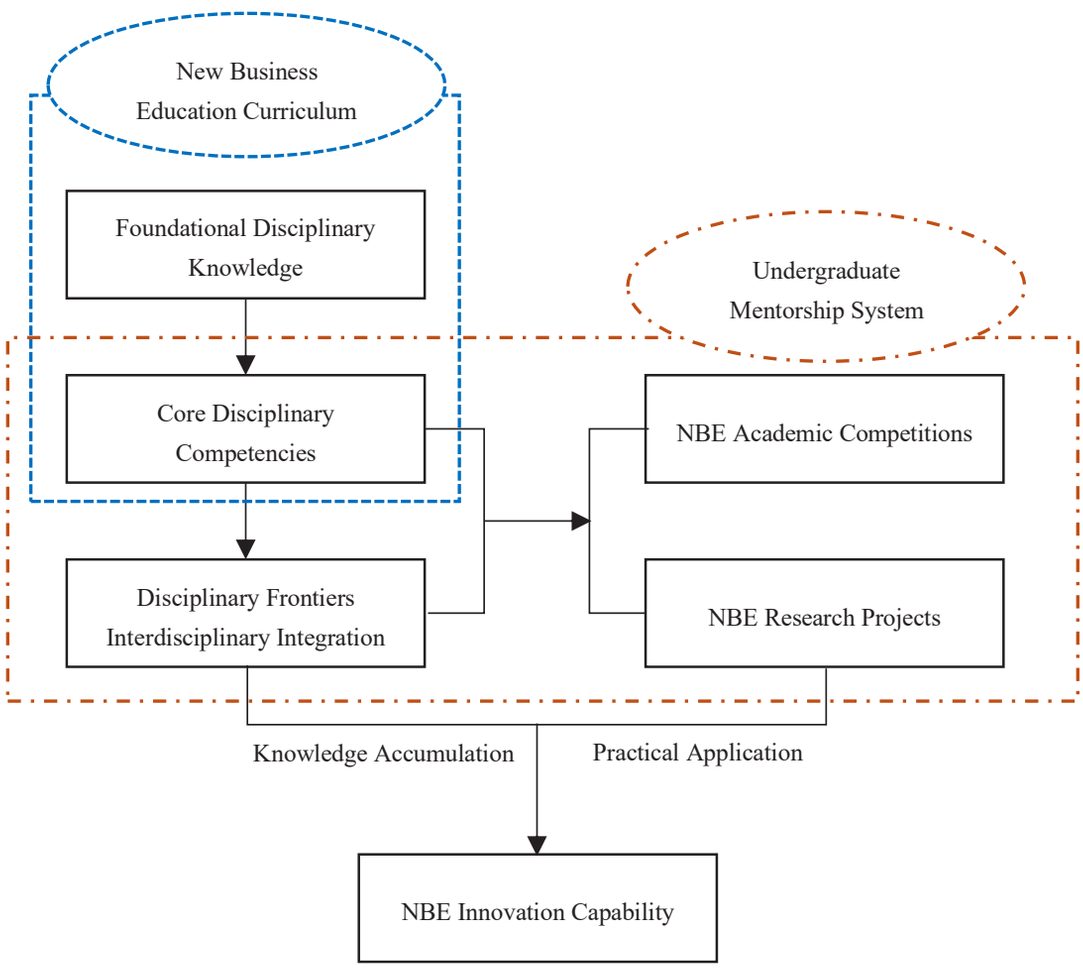

Figure 1. Innovation Capability Cultivation Mechanism in New Business Education via Undergraduate Mentorship System

3.2 Analysis of Implementation Effectiveness

A three-year analysis of a Jiangsu business school demonstrates its effectiveness. Despite a 23.5% decline in enrollment (from 1,773 in 2019 to 1,356 in 2023), innovation-related achievements significantly increased. Annual research projects and competition awards rose from 37.3 (2018–2020) to 66 (2021–2023), with national-level successes increasing from 9.3 to 15.7, provincial from 14.3 to 27.3, and local from 10 to 20. Initial implementation (2021) showed marginal improvement, but subsequent years exhibited notable gains (see Figure 2).

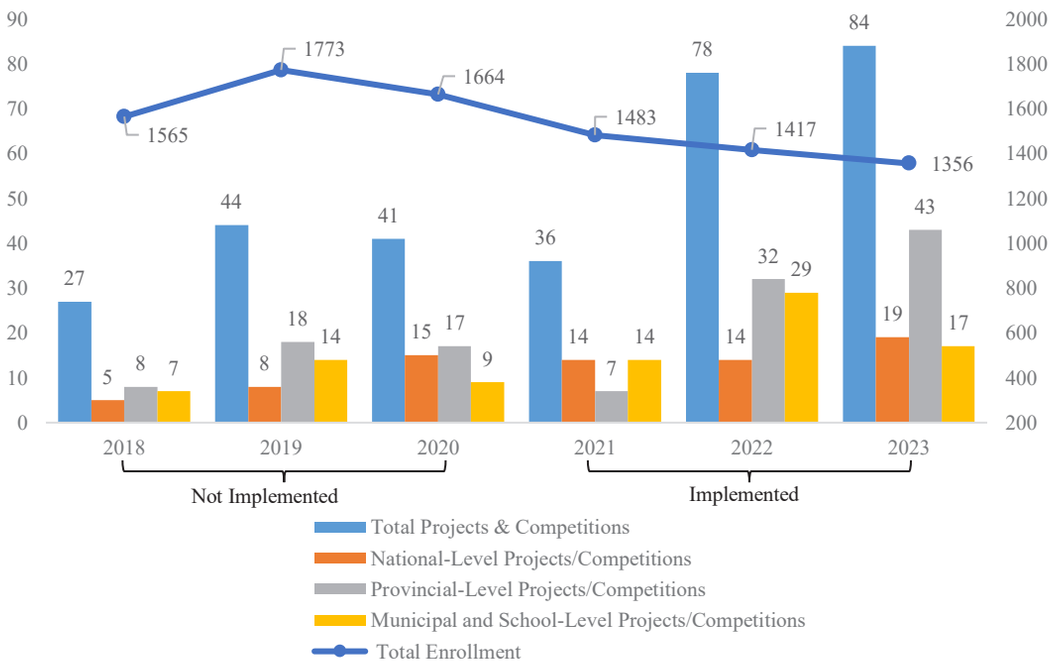

Figure 2. Three-Year Pre-/Post-Implementation Comparison of Undergraduate Research Projects & Competition Awards

Furthermore, student interviews highlight three pathways enhancing innovation: (1) theoretical grounding through disciplinary mastery, (2) practical skill development via research and competition participation, and (3) psychological empowerment through personalized mentorship.

4. Critical Analysis of Implementation Challenges

Despite its potential, mentorship in NBE faces systemic challenges. A student survey (Table 1) identifies two main issues. First, low participation rates hinder inclusivity. While students value mentorship, only 16.09% of respondents engaged in research and 20.69% in competitions. This gap between institutional goals and student involvement limits innovation development. Second, output efficiency remains suboptimal, with only 42.86% of research participants completing projects with tangible results, and just 66.67% of competitors securing awards.

Table 1. Mentorship Effectiveness from Student Perspectives

Category	Competency	Strongly Agree (%)	Agree (%)	Participation (%)	Output (%)
Research Projects	Problem Identification & Formulation	71.43%	21.43%	16.09%	42.86%
	Experimental Design & Execution	64.29%	28.57%		
	Data Analysis & Interpretation	64.29%	28.57%		
	Academic Writing & Presentation	71.43%	21.43%		
	Interdisciplinary Application	78.57%	21.43%		
Competitions and Entrepreneurship	Opportunity/Risk Assessment	61.11%	22.22%	20.69%	66.67%
	Business Strategy Development	61.11%	16.67%		
	Communication & Negotiation	61.11%	16.67%		
	Innovative Problem-Solving	55.56%	27.78%		
	Interdisciplinary Application	55.56%	22.22%		

Four institutional barriers contribute to these challenges: mentor-mentee mismatches due to rigid selection processes, weak faculty-student communication, faculty workload constraints, and incentive structures prioritizing quantifiable outputs over mentorship quality. Addressing these issues requires improved mentor selection, enhanced communication frameworks, faculty development programs, and revised evaluation metrics.

5. Strategic Recommendations

To enhance mentorship effectiveness, several reforms are necessary. First, refining mentor-mentee selection can improve compatibility through detailed faculty profiles and student portfolios, alongside pre-selection engagement opportunities. Probationary periods should allow reassignment for better alignment. Second, performance evaluation must incorporate qualitative indicators, such as critical thinking progression and skill development, through student self-assessments, peer reviews, and faculty evaluations. These insights should inform mentorship reports affecting promotion criteria and funding. Third, mentorship infrastructure must be optimized by integrating mentorship-focused courses into curricula and establishing standardized project milestones. Investment in research labs, funding pools, and digital collaboration platforms is essential. Finally, mentorship incentives must be restructured to recognize mentorship outcomes alongside research productivity in tenure reviews. Distinguished mentors should receive monetary awards and institutional support, while students should be incentivized through scholarships and graduate school advantages.

6. Conclusion

This study evaluates the undergraduate mentorship system's impact on innovation development in NBE. Findings confirm its effectiveness in increasing research participation and competition success, yet structural challenges — mentor-mentee mismatches, faculty engagement constraints, and rigid evaluation models — hinder its full potential.

To address these limitations, four key reforms are proposed: dynamic mentor selection, comprehensive evaluation frameworks, enhanced mentorship infrastructure, and incentive-aligned faculty engagement. These strategies can transform mentorship into a catalyst for interdisciplinary innovation, equipping students with critical competencies for an evolving global business environment. Beyond NBE, these insights offer a framework for optimizing mentorship in higher education.

Acknowledgments

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