Research on the Reconstruction of the Innovation and Entrepreneurship Education System in Application-oriented Universities from the Perspective of Specialization and Innovation Integration

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Abstract: With the in-depth implementation of the innovation-driven development strategy, the reconstruction of the innovation and entrepreneurship education system of application-oriented colleges and universities, as an important base for cultivating high-quality application-oriented talents, is particularly important. From the perspective of the integration of specialization and innovation, this paper discusses the necessity, current situation, dilemma and promotion strategy of the reconstruction of the innovation and entrepreneurship education system in application-oriented universities. The integration of specialization and innovation emphasizes the deep integration of professional education and innovation and entrepreneurship education, aiming to improve students' practical ability and comprehensive quality. At present, application-oriented colleges and universities have made some progress in innovation and entrepreneurship education, but they still face difficulties such as imperfect curriculum system, weak teachers, and lack of practice platforms. In order to build an innovation and entrepreneurship education system that meets the requirements of the new era, colleges and universities need to strengthen school-enterprise cooperation, optimize curriculum settings, improve teachers, and improve practice platforms, so as to better enhance students' innovation and entrepreneurship capabilities and provide strong talent support for the national innovation-driven development strategy.

Keywords: Application-Oriented Universities; Specialization and Innovation Integration; Innovation and Entrepreneurship Education System; School-Enterprise Cooperation; Platform of Practice

1. Introduction

Within the context of a knowledge-driven economic paradigm, innovative capacity has emerged as the pivotal catalyst propelling socioeconomic advancement, has become the core indicator to measure national competitiveness [1-3]. The convergence of disruptive technological breakthroughs and value chain reengineering has created a new operational matrix for global production systems, the society's demand for talents is undergoing a structural transformation - from a single-skilled talent to a compound talent with professional knowledge, innovative thinking and cross-border integration capabilities. As a key link between higher education and industrial needs, the pedagogical reconfiguration of competency cultivation frameworks in industry-aligned higher education institutions demands immediate strategic recalibration. The traditional education paradigm places too much emphasis on the systematic inculcation of subject knowledge, and relatively ignores the training of practice-oriented thinking and the cultivation of entrepreneurial ability, resulting in some graduates being unable to solve complex problems and cope with market changes [4].

The concept of innovation and integration provides a strategic framework for solving this dilemma. Its core lies in building a double helix training system of "professional education + innovation and entrepreneurship education": on the one hand, it deepens the integration of industry and education,

integrates the cutting-edge technology of the industry and the real needs of enterprises into the curriculum design, and realizes the transformation of knowledge into ability through project-based learning and discipline competitions; On the other hand, a full-chain practice platform of "innovation workshop-entrepreneurship nursery-incubator" has been built, and resources such as venture capital and intellectual property services have been introduced to form a closed-loop ecology of "education-practice-transformation" [5]. This paradigm shift not only requires the curriculum system to shift from "discipline-oriented" to "problem-oriented", but also requires the teaching organization form to shift from "classroom-centered" to "scenario-centered", and cultivate students' systematic thinking and business insight through interdisciplinary team projects and industrial proposition research [6]. The practice shows that the college graduates who implement the integration of specialization and innovation perform significantly better than the traditional model in terms of employment rate, entrepreneurship rate and transformation of scientific research achievements. This reform not only reshapes the value chain of talent training, but also provides a continuous talent dividend for regional industrial upgrading, embodying the essential purpose of tertiary education in advancing synergistic development of socioeconomic ecosystems.

2. The Necessity of Reconstructing the Innovation and Entrepreneurship Education System in Applied Universities from the Perspective of Specialized and Innovative Integration

2.1 Adapting to the Needs of Talent Cultivation in the New Era

The co-evolution of technological infrastructure and industrial value chains necessitates dynamic recalibration of human capital archetypes in the knowledge ecosystem. Applied universities need to cultivate high-quality applied talents with innovative spirit, entrepreneurial awareness, and practical ability to meet the needs of economic and social development in the new era. The reconstruction of the innovation and entrepreneurship education system from the perspective of specialized and innovative integration helps to closely the synergistic convergence of entrepreneurial pedagogy and disciplinary necessitates knowledge recombination, enhancing students' comprehensive quality and competitiveness in employment.

2.2 Promoting the Reform and Innovation of Higher Education

The reconstruction of the education system is an important measure to promote the reform and innovation of higher education. Through the integration of specialized and innovative education, it can promote the innovation of teaching content, methods, and means, stimulate students' interest and enthusiasm, improve teaching effectiveness and the quality of talent cultivation. At the same time, the implementation of innovation and entrepreneurship education also helps universities to form distinctive talent cultivation models, enhance the university's reputation and influence.

3. Current Status of Innovation and Entrepreneurship Education System in Applied Universities

3.1 The Concept of Innovation and Entrepreneurship Education is Gradually Becoming Popular

In recent years, with the increasing attention and support of the state to innovation and entrepreneurship education, applied universities have gradually realized the importance of innovation and entrepreneurship education and have begun to integrate it into the talent cultivation system. Many universities actively promote the concept of innovation and entrepreneurship education by offering innovation and entrepreneurship courses, organizing innovation and entrepreneurship competitions, and stimulating students' interest in learning and entrepreneurial enthusiasm.

3.2 The Resources for Innovation and Entrepreneurship Education are Continuously Enriched

To catalyze the evolution of entrepreneurial pedagogy ecosystems, we must implement cross-boundary synaptic reinforcement in educational value chains, applied universities have continuously strengthened the construction of innovation and

entrepreneurship education resources. Many universities have established innovation and entrepreneurship education centers or internship bases to provide students with high-quality practice platforms; at the same time, they actively introduce external resources, establish cooperative relationships with enterprises, industry associations, and others to jointly promote the development of innovation and entrepreneurship education.

3.3 The Innovation and Entrepreneurship Education System is not yet Perfect

While applied universities have made notable progress in pedagogical development, their educational frameworks still exhibit areas requiring refinement. Two primary issues merit attention: Firstly, innovation education frequently remains superficial due to fragmented implementation strategies and insufficient theoretical depth. Secondly, the disconnect between entrepreneurial training programs and core academic curricula hinders effective knowledge transfer, resulting in students' limited capacity to employ disciplinary expertise in addressing real-world innovation challenges. This systemic compartmentalization undermines the practical application of academic knowledge in entrepreneurial contexts.

4. The Dilemma of Restructuring the Innovation and Entrepreneurship Education System in Applied Universities

4.1 Difficulty in Transforming Educational Concepts

Some applied universities still hold traditional concepts that emphasize theory over practice and knowledge transmission over ability cultivation. This mindset leads to a lack of sufficient attention and support for innovation and entrepreneurship education in universities, making it difficult to form an effective education system.

4.2 Unreasonable Curriculum System Design

There is a "two-skin" phenomenon between innovative and entrepreneurial courses and professional courses in many applied universities. Innovative and entrepreneurial courses often appear as elective courses or lectures, lacking effective connection and integration with professional courses. This kind of curriculum setting makes it difficult to the solution of practical problems in innovative and entrepreneurial practice.

4.3 Insufficient Teaching Staff

Higher education institutions emphasizing applied disciplines face notable challenges in developing qualified faculty for innovation and entrepreneurship education. A significant proportion of current instructors demonstrate limited hands-on expertise and mentorship capabilities in entrepreneurial practices, hindering their ability to effectively support students' practical learning needs in these areas. Concurrently, institutions encounter systemic obstacles in both recruiting professionals with substantial innovation-driven industry experience and implementing comprehensive faculty development programs to enhance existing staff's entrepreneurial competencies.

4.4 Lagging behind in the Construction of Practical Platforms

Applied universities currently encounter systemic obstacles in establishing practice-oriented innovation ecosystems. This situation arises from two primary factors: Firstly, constrained financial capacities significantly limit these institutions' ability to construct specialized platforms for entrepreneurial skill development. Secondly, inadequate collaborative partnerships among academic institutions, corporate entities, and professional organizations hinder the creation of synergistic support mechanisms.

5. Strategy for the Reconstruction of the Innovation and Entrepreneurship Education System from the Perspective of Specialized and Innovative Integration in Applied Universities

(1) Applied universities should update their educational concepts and establish the concept of specialized and innovative integration. Universities recognize the importance of education, integrate it into the talent cultivation system, and closely combine it with professional education. At the same time, universities should also strengthen the publicity and promotion of education, improve the awareness and participation of teachers and students.

(2) Application-oriented universities should

optimize the curriculum system and promote deep integration of specialized and innovative creation. Universities should design a scientific and reasonable curriculum system for innovation and entrepreneurship based on the characteristics of their majors and market demand [7-9]. On the one hand, universities should incorporate innovation and entrepreneurship courses into the professional teaching plan to ensure that students receive innovation and entrepreneurship education while mastering professional knowledge; on the other hand, universities should also strengthen the connection and integration between innovation and entrepreneurship courses and professional courses, so that students can flexibly apply the knowledge they have learned in innovation and entrepreneurship practice to solve practical problems.

(3) Vocational universities must prioritize faculty development to boost educators' capabilities in fostering innovation and entrepreneurship. Institutions should actively recruit and professionally develop educators possessing relevant experience in startup ventures and commercial initiatives. Furthermore, academic staff should be motivated to engage in collaborative industry partnerships and real-world entrepreneurial projects [10-12]. Concurrent efforts should focus on enhancing pedagogical training programs that specifically address contemporary entrepreneurial competencies, thereby elevating instructional quality in these critical areas. Complementary strategies may include organizing expert-led workshops and mentor-ship sessions featuring seasoned business professionals and angel investors, offering learners hands-on insights into commercial innovation processes.

(4) To optimize innovation and entrepreneurship education, application-oriented institutions should strategically develop hands-on training systems through resource integration. These universities could implement a dual-platform approach by establishing campus-based facilities such as experimental maker-spaces and business incubation centers, while simultaneously forging strategic alliances with commercial entities and professional organizations to create off-campus innovation hubs and apprenticeship networks. This integrated ecosystem enables students to bridge theoretical knowledge with real-world commercial operations, fostering competencies through exposure to actual market dynamics and entrepreneurial workflows. Research indicates such practice-oriented ecosystems significantly enhance students' operational capabilities and industry adaptability [13-15].

(5) To enhance the vitality of innovation-driven education in application-oriented institutions, higher education establishments should optimize their assessment frameworks to better motivate faculty-student engagement in entrepreneurial initiatives. This strategic transformation requires implementing a multidimensional evaluation system that objectively recognizes student accomplishments in creative ventures through transparent metrics and incentive-based recognition programs. Concurrently, academic institutions must recalibrate faculty performance indicators by incorporating innovation mentor-ship metrics into professional evaluations. This institutional realignment should reward educators who actively guide student-led startups, participate in cross-disciplinary innovation projects, and integrate entrepreneurial competencies into curriculum design. Financial incentives coupled with career advancement opportunities could effectively stimulate professors' commitment to cultivating an entrepreneurial ecosystem. The proposed paradigm shift in evaluation methodologies emphasizes three critical dimensions: Establishing milestone-based progress tracking for student innovation portfolios implementing tiered reward systems aligned with project commercialization potential. Developing comprehensive faculty assessment criteria balancing teaching, mentor-ship, and practical innovation outputs. By embedding these mechanisms into institutional governance structures, universities can create sustainable innovation ecosystems that bridge academic rigor with market-oriented entrepreneurship. This approach not only validates experimental learning outcomes but also positions application-oriented universities as engines for regional economic development through talent cultivation and technological innovation.

6. Conclusion

In the new context of deep integration between

specialty and innovation, reconstructing the innovation and entrepreneurship education system in application-oriented universities has emerged as a crucial approach to meeting the talent demands of the new era, deepening educational reform in higher education institutions, and promoting regional economic development. However, application-oriented universities currently face multiple practical dilemmas and significant challenges in advancing the reconstruction of this system. Therefore, universities need to make efforts from multiple dimensions, including innovating educational concepts, improving curriculum structures, strengthening teacher training, building practical platforms, and optimizing evaluation systems, to systematically promote the reconstruction project of the innovation and entrepreneurship education system. The effective implementation of these measures will not only remarkably enhance the overall effectiveness of innovation and entrepreneurship education in application-oriented universities but also lay a solid foundation for cultivating high-quality compound talents with both innovative consciousness and practical abilities.

Acknowledgments

This paper is supported by the 2024 Annual Heilongjiang Province Higher Education Teaching Reform Research General Project "Research and Practice of New Quality Teaching of Special Creation Integration in Local Application-oriented Colleges" （SJGYB2024764）

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