

Practice and Effect Evaluation of Innovation and Entrepreneurship Education Model for University Students

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Abstract: As the global economy thrives and technological advancements continue unabated, enhancing national innovation, entrepreneurship, and their associated capabilities have become pivotal for the growth of nations. For universities, fostering innovation and entrepreneurship education serves dual purposes: it cultivates students' comprehensive qualities and holistic growth, while also addressing the current employment challenges faced by university graduates and facilitating the translation of knowledge into practical productivity. Nevertheless, despite the widespread implementation of such education in domestic universities, a considerable disparity persists between the actual outcomes and anticipated goals. The practice and assessment of the effectiveness of university student innovation and entrepreneurship education models remain an ongoing process. This article delves into this domain, aiming to establish an evaluation framework that measures the efficacy of such education models. Through sustained practical experimentation and evaluation, we can refine and enhance these education models, thereby elevating the quality and effectiveness of innovation and entrepreneurship education. Furthermore, universities should fortify their collaborations with enterprises, strengthening the school-enterprise partnership mechanism and providing students with richer practical opportunities and resource support.

1. Introduction

As globalization and the knowledge-driven economy prevail, the focus on innovation and entrepreneurship education has emerged as a pivotal segment in higher education [1]. This educational ideology, stemming from Western nations, has evolved into a well-established educational framework and teaching approach over the years of its development and application [2]. In contrast, China's exploration and implementation of such education were relatively delayed, emerging only in the past decade and garnering significant attention [3]. Given its rapid ascent in the initial stages, it's imperative to delve into the current state of innovation and entrepreneurship education in China, assess its limitations, and foster its balanced progress [4]. The escalating number of university graduates now confronts a glutted job market, making the employment landscape increasingly challenging [5]. In this milieu, the importance of innovation and entrepreneurship education is paramount. It serves not only to enhance students' employability but also fosters their holistic development, innovative mindset, and practical proficiency.

Concurrently, fostering innovation and entrepreneurship education serves as a pivotal avenue for enhancing the quality of university education. This approach facilitates a profound integration between university education and societal needs, aligning it more closely with market demands and the trajectory of social progress [6]. Nevertheless, despite the widespread adoption of such education in Chinese universities, several issues and challenges persist in the actual teaching practices [7]. One notable concern is the low level of student interest in these courses. Some innovation and entrepreneurship curricula tend to be overly theoretical, lacking in practical relevance and applicability, which hinders students' enthusiasm. Additionally, some instructors employ outdated teaching methods devoid of innovation and interactive elements, impeding students' full engagement in the learning process [8]. A second challenge is the difficulty in

accurately capturing the practical relevance and applicability of these courses. The fundamental goal of innovation and entrepreneurship education is to cultivate students' innovative mindset and practical proficiency. Consequently, practical instruction occupies a central role. However, owing to resource constraints and insufficient conditions, numerous universities struggle to offer sufficient practical opportunities and platforms, thus impeding students' ability to genuinely grasp the practical skills associated with innovation and entrepreneurship.

Concurrently, the ambiguity surrounding requirements and assessment criteria for innovation and entrepreneurship courses in certain universities poses challenges in accurately gauging students' practical abilities and innovative prowess. Furthermore, the current efficiency of measuring and evaluating these courses is conspicuously low. Currently, many universities predominantly rely on traditional means, such as examinations and assignments, to assess these courses, which frequently fail to capture the true essence of students' innovative capabilities and practical proficiency. Given this backdrop, a re-evaluation of the practical effectiveness of innovation and entrepreneurship education in China is imperative. Primarily, a profound understanding of students' needs and interests is crucial to fine-tuning course content and teaching methods, thereby better aligning with their real-world situations and demands. Additionally, the enhancement of practical teaching is essential, offering more hands-on opportunities and platforms to empower students in mastering practical skills in innovation and entrepreneurship. Moreover, establishing a more scientific and justifiable evaluation system is also necessary to comprehensively and objectively assess students' innovative abilities and practical proficiencies.

2. Practice Mode

2.1. Exploring New Models for Cultivating Applied Talents

In the contemporary era of progressively pragmatic and groundbreaking higher education, universities, as the foundation for talent development, must adapt to the rapid advancements of our times and proactively delve into novel methodologies for fostering practical talents [9]. The essence of this approach lies in constructing a profoundly unified framework for talent cultivation that encompasses scientific research, academic instruction, and societal contributions, aiming to elevate the caliber of educational outcomes and satisfy society's hunger for competent professionals (depicted in Figure 1). At the forefront of this endeavor is the enhancement of students' hands-on capabilities and innovative mindset. Consequently, universities must prioritize the pivotal role of scientific research and seamlessly align it with the cultivation of practical talents [10]. This alignment involves two primary aspects: firstly, initiating research projects that are pertinent to the development of practical talents, thereby motivating faculty to conduct research with practical implications; secondly, fostering a symbiotic relationship between research and teaching, translating research achievements into cutting-edge and stimulating experimental curricula.

Applied research is particularly important in local undergraduate institutions. Local undergraduate institutions should focus on the needs of local economic growth, combine with the characteristics of local industries, and carry out applied scientific research with local characteristics. This not only helps to enhance the scientific research strength of the school, but also provides intellectual support for local economic growth, achieving a positive interaction between scientific research and the economy. Teaching is the foundation and key to talent cultivation. In the mode of cultivating applied talents, universities should attach importance to the status and role of experimental teaching, and highlight the practicality and innovation of experimental teaching. Universities should increase investment in experimental teaching, build advanced experimental teaching facilities, and provide students with sufficient experimental conditions and resources. At the same time, strengthen the construction of experimental teaching faculty, and improve the level and ability of teachers in experimental teaching. Universities should reform experimental teaching methods and introduce project-based and case-based teaching methods to make experimental teaching more practical. Through the design and implementation of experimental projects, we need to cultivate students' practical abilities and innovative spirit.

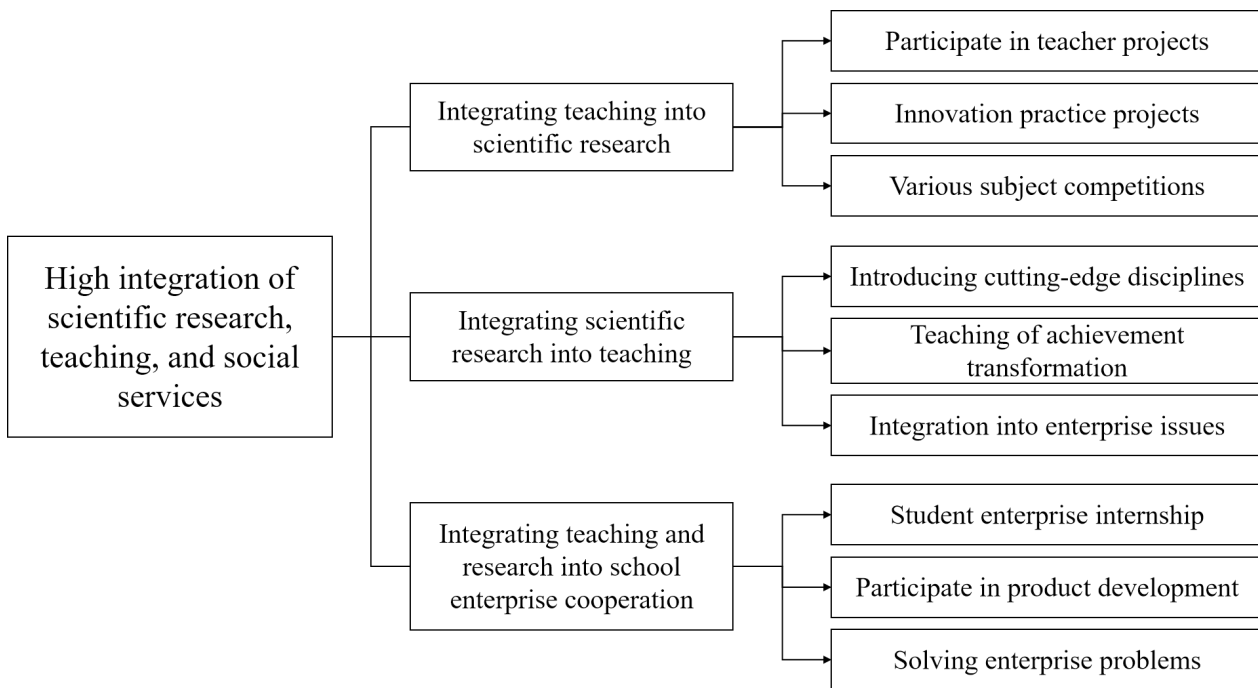


Figure 1: A highly integrated talent cultivation model integrating research, teaching, and social services

2.2. Strengthen School Enterprise Cooperation

To better cultivate high-quality talents with innovative spirit and practical ability, cooperation between universities and enterprises is particularly important. Through school enterprise cooperation, universities can provide technical support and intellectual resources for enterprises, while enterprises can also provide practical platforms and internship opportunities for universities, achieving complementary advantages between both parties. Universities have abundant teaching resources and research capabilities, while enterprises have market resources and practical operational experience. Through school enterprise cooperation, both parties can share resources and achieve complementary advantages. Enterprises can provide internship opportunities and mentor guidance for universities, enabling students to learn and practice in a real work environment, improving their practical abilities and comprehensive qualities.

Enterprises are direct participants in the market and have a keen insight into market demand and industry dynamics. Through cooperation with enterprises, universities can have a more accurate understanding of market demand and talent growth directions. School enterprise cooperation can help students better understand corporate culture and employment environment, and improve their employment competitiveness. At the same time, enterprises can also select outstanding talents through school enterprise cooperation, injecting new vitality into the growth of the enterprise. Universities and enterprises collaborate to establish internship bases, providing students with internship opportunities. During the internship, students can participate in the actual work of the enterprise under the guidance of their supervisor, understand the operation process and market demand of the enterprise. Universities and enterprises jointly carry out innovation and entrepreneurship projects, encouraging students to apply their learned knowledge to practice. Enterprises can provide funding, venue, and other support for projects, and guide students in project growth and implementation.

3. Effect Evaluation

3.1. A four Level Evaluation Model for Innovation and Entrepreneurship Education in Universities

As universities progressively strengthen their innovation and entrepreneurship education, a

pressing concern arises: how to scientifically, comprehensively, and effectively gauge its educational impact. Traditional satisfaction surveys, while capturing student sentiment on specific aspects, are inherently limited in scope and depth due to their one-dimensional nature. Consequently, the implementation of a four-tier evaluation framework holds significant practical value for universities' innovation and entrepreneurship education. This model transcends mere student satisfaction, incorporating their perspectives on the importance of various educational experiences. By collating and examining student data on both satisfaction and importance, the model determines discrepancies between these two metrics, thereby highlighting educational strengths and areas requiring improvement. This two-dimensional approach ensures a more holistic, unbiased, and profound evaluation.

Figure 2 shows a two-dimensional matrix of student satisfaction composed of satisfaction and importance. By analyzing the evaluation results, universities can understand the needs and expectations of students in innovation and entrepreneurship education, thereby guiding the direction and content of teaching reform. In response to the challenges identified in the evaluation results, universities can optimize resource allocation, strengthen relevant construction and investment, and improve the quality and effectiveness of education. By understanding students' views and evaluations on various aspects of innovation and entrepreneurship education, universities can more accurately meet their needs, promote their comprehensive growth, and enhance their innovation and entrepreneurship abilities.

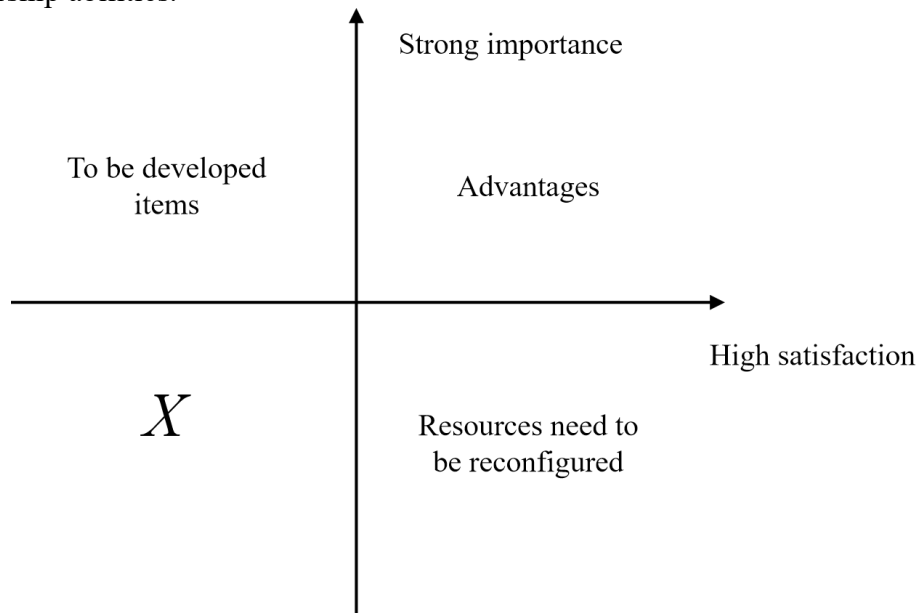


Figure 2: Two dimensional matrix of student satisfaction composed of satisfaction and importance

3.2. Cultivation of Innovation and Entrepreneurship Awareness

The core aspect of innovation and entrepreneurship education revolves around fostering innovation and entrepreneurship awareness. Evaluation holds utmost significance as a crucial mechanism for executing this educational paradigm. Its role extends beyond mere feedback and motivation; it aids in shaping educational policies and propels the refinement of innovation and entrepreneurship teaching models. A pivotal objective within this educational framework is fostering entrepreneurial awareness among students. This awareness encapsulates an individual's comprehension, stance, and predilection towards entrepreneurial endeavors, serving as a key impetus for such activities. Through this education, students grasp the fundamentals, procedures, and potential risks inherent in entrepreneurship. They acquire the fundamental know-how and skills vital for entrepreneurial ventures, thereby attaining preliminary entrepreneurial proficiencies and attributes.

At the same time, innovation and entrepreneurship education can also stimulate students' innovative thinking and creativity, help them discover and seize business opportunities, and realize

their self-worth and social value. The educational content should closely combine market demand and industry growth trends, focusing on cultivating students' innovative thinking and practical abilities. By introducing successful entrepreneurial cases and practical experience, students can have a more intuitive understanding of the process and challenges of entrepreneurship, stimulating their interest and enthusiasm for entrepreneurship. Through cooperation and communication with enterprises, students can gain a deeper understanding of market demand and industry trends, accumulate practical experience, and improve their entrepreneurial abilities. By organizing students to participate in entrepreneurship competitions, entrepreneurship camps, and other activities, students can experience the process and challenges of entrepreneurship firsthand, and cultivate their entrepreneurial awareness and abilities.

4. Conclusions

The ongoing endeavor to elevate the caliber of innovation and entrepreneurship education for Chinese university students is an incremental process, constantly demanding exploration and refinement. The development of an innovative and entrepreneurial educational paradigm and an assessment system tailored to China's unique educational and economic landscape poses a significant challenge, yet it is a pressing necessity. The ultimate objective of this education is to foster individuals who possess innovative thinking, a pioneering spirit, and the capabilities to navigate a rapidly evolving socio-economic terrain. To attain this, we must embark on a multifaceted approach encompassing curricular reforms, instructional innovations, and the establishment of practical platforms. In the realm of curricular design, we must incorporate education in innovation and entrepreneurship into professional education, ensuring that students acquire both domain-specific knowledge and an understanding of the principles and techniques of innovation and entrepreneurship. When considering teaching methodologies, we must embrace a broader spectrum of adaptable and varied approaches, encompassing case studies, project-driven education, and others, fostering real-world learning and growth for our students. Alongside, fostering stronger partnerships with enterprises is crucial to furnish our learners with richer practical opportunities and entrepreneurial resources. To promote hands-on experiences, it's imperative to actively develop innovation and entrepreneurship platforms, offering students venues and chances to engage in entrepreneurial pursuits. Furthermore, hosting diverse innovation and entrepreneurship competitions and events is key to igniting students' passion for these fields and bolstering their capabilities. Lastly, it's vital to establish a rigorous evaluation framework for innovation and entrepreneurship education, ensuring its efficiency and quality are meticulously assessed.

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