

Thoughts on the Integration and Development of Entrepreneurship Education and Professional Education under the Background of New Engineering

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Abstract: Under the background of the new engineering sciences, integrating innovation and entrepreneurship education into professional education is an important task in the reform of college teaching. The integration of entrepreneurship education and professional education in higher education institutions is an effective way to implement the development strategies of "improving independent innovation capabilities and building an innovative country" and "promoting employment through entrepreneurship." It is also a vital pathway to vigorously advance innovation and entrepreneurship education and to support the independent entrepreneurship initiatives of college students. Higher education institutions must deeply explore the necessity and implementation pathways of the organic combination of the two.

1. Introduction

To implement the development strategies proposed at the 20th National Congress of the Communist Party of China, proposed "strengthening the construction of the national innovation system, enhancing innovation driven development" and "promoting mass entrepreneurship and innovation, and stimulating the innovation vitality and creative potential of the whole society", the Ministry of Education recently issued the <Implementation Opinions on Deepening the Reform of Innovation and Entrepreneurship Education in Higher Education Institutions>(hereinafter referred to as the <Opinions>), requiring all regions to integrate innovation and entrepreneurship education into the entire process of talent cultivation, and cultivate high-quality talents with innovative spirit, entrepreneurial awareness, and innovation and entrepreneurship ability^[1]. The Opinion mainly includes the following points:

1) Requires that higher education institutions update their teaching content, establish a curriculum system related to innovation and entrepreneurship, strengthen practical teaching activities, and improve students' practical operational abilities.

2) Encourages universities to introduce and cultivate innovative and entrepreneurial teachers

with practical experience, and enhance their ability in innovation and entrepreneurship education.

3) Provide students with a platform for practice and experimentation, it supports the construction of innovation and entrepreneurship practice bases in universities, including laboratories, incubators, etc.

4) Encourage cooperation between universities and enterprises to jointly develop courses, provide internship and practical training opportunities, and promote the improvement of students' innovation and entrepreneurship abilities.

5) Request to improve the policy support system for innovation and entrepreneurship education, including funding support, tax incentives, etc., to provide a favorable policy environment for students' innovation and entrepreneurship; Require universities to establish an entrepreneurship guidance service system, providing services such as entrepreneurship consulting, project evaluation, and risk control.

Therefore, this article attempts to start from the basic connotation of innovation and entrepreneurship education, and on the basis of the necessity of integrating innovation and entrepreneurship education into professional education, analyze the main problems and challenges in the current practice of integrating innovation and entrepreneurship education with professional education, and strive to provide useful inspiration for optimizing the application-oriented talent training model of the integration and development of innovation and entrepreneurship education and professional education.

2. Analysis of Problems Existing in Innovation and Entrepreneurship Education

The innovation and entrepreneurship education in some colleges and universities has just started and is separated from professional education. The content is simple, and students are unable to apply it in practice. The ability to innovate and start businesses is far below the social requirements and lacks effectiveness. The main manifestations are as follows:

2.1 The understanding of the connotation and essence of innovation and entrepreneurship education is not in place

Concepts are the forerunners of actions, and misalignments at the cognitive level will inevitably lead to deviations or delays in actions. Many teachers, even leaders dedicated to innovation and entrepreneurship education, still have misunderstandings about the connotation and essence of innovation and entrepreneurship education. The most typical manifestation is the one-sided understanding of innovation and entrepreneurship education as education oriented towards establishing businesses and training bosses, or as employment education. As a result, innovation and entrepreneurship education has returned to the old path of traditional employment education in the past, and has been alienated into entrepreneurship skill training and job-seeking skill training. In the implementation process, it is simplified into adding a few entrepreneurship or employment guidance courses, treating innovation and entrepreneurship education as a replica of employment education or a second classroom for professional education. Clarifying the essence and connotation of innovation and entrepreneurship education scientifically is a prerequisite for accurately implementing the integration of innovation and entrepreneurship education with professional education. Its core should be to cultivate college students' spirit, consciousness, thinking, and ability of innovation and entrepreneurship, improve the comprehensive quality of college students, and cultivate them into high-quality compound talents of innovation and entrepreneurship.

2.2 The content of innovation and entrepreneurship education lacks systematicity

The content of innovation and entrepreneurship education in many colleges and universities is singular, still mainly focusing on classroom teaching of theoretical knowledge, and some schools only hold lectures to publicize entrepreneurship policies, with no professional knowledge in innovation and entrepreneurship education content. The setting of innovation and entrepreneurship courses is relatively arbitrary and has a high degree of blindness, mainly scattered in elective courses of general education, without forming a fixed module^[2]. There are no systematic textbooks and case compilations, and there is also a lack of corresponding teaching outlines. Innovation and entrepreneurship education has not been integrated into the entire process of talent cultivation, and it is only aimed at some students, and most students have not received entrepreneurial skill training.

2.3 The platform for innovation and entrepreneurship education is not perfect

The construction of innovation and entrepreneurship education platforms in many colleges and universities is not strong enough, and the number of scientific research innovation platforms, practical training platforms, and entrepreneurship incubation bases available for students to carry out innovation and entrepreneurship training is relatively small and needs further improvement^[3]. Moreover, laboratories have not been fully opened and are still managed in a closed manner, which cannot meet the needs of students for innovation and entrepreneurship training. As a result, innovation and entrepreneurship education is not attractive to students, most people are unwilling to participate in innovation and entrepreneurship activities, and only a very small number of entrepreneurial projects can be incubated, and the level is not high^[4].

2.4 There is a lack of teachers for innovation and entrepreneurship education

Innovation and entrepreneurship education mainly aims to cultivate students' innovative practice abilities, while professional skills are cultivated through professional education. To effectively integrate innovation and entrepreneurship education with professional education, teachers need more than just professional knowledge; they must also have rich entrepreneurial practice experience. Many newly established applied undergraduate colleges and universities do not pay enough attention to the training of innovation and entrepreneurship education teachers, and the teaching level of teachers is relatively low, lacking a high-level team of teachers with profound professional knowledge and rich innovation and entrepreneurship experience. To complete the task, these colleges and universities arrange professional course teachers or counselors to undertake innovation and entrepreneurship education work. Professional course teachers, although they have a deep professional foundation and can play an important role in theoretical teaching, lack relevant knowledge of innovation and entrepreneurship education and have no entrepreneurial practice experience; counselors, although they have a solid foundation in ideological and political education, lack professional knowledge and innovation and entrepreneurship practice experience. Due to the lack of innovation and entrepreneurship education theory knowledge and entrepreneurial practice skills, these teachers focus on theoretical course teaching, use single teaching methods, and are often just theoretical, with low innovation and entrepreneurship practice guidance ability^[5]. The content they teach is not operable and cannot integrate innovation and entrepreneurship education with professional education, and the practicality is very low.

3. Strategies for Integrating Entrepreneurship Education into Professional Education

3.1 Update concepts and enhance the awareness of integration

Under the call of "mass entrepreneurship, innovation for all" and the requirements of the Ministry of Education, local colleges and universities have begun to pay attention to innovation and entrepreneurship education, but this is far from enough. To implement innovation and entrepreneurship education as a new teaching concept and model, it is necessary to further update concepts and enhance the awareness of integration. First, they should completely get out of the cognitive misunderstandings of innovation and entrepreneurship education in thinking and accurately understand the basic connotation of innovation and entrepreneurship education, transcending the vulgar understanding of innovation and entrepreneurship education. This is the premise for promoting the integration of innovation and entrepreneurship education into professional education. Second, they should deeply understand the internal unity of innovation and entrepreneurship education and professional education at the level of talent cultivation goals. Innovation and entrepreneurship education and professional education are neither "parallel lines" nor "opposites." Integrating innovation and entrepreneurship education into professional education will give professional education a new talent cultivation value proposition; while integrating professional education into innovation and entrepreneurship education provides a broad space for the achievement of innovation and entrepreneurship education goals.

3.2 Build a complete entrepreneurship education system that combines theory with practice and classroom with extracurricular linkage.

To effectively promote college student entrepreneurship education, in classroom teaching, colleges and universities should fully implement the talent cultivation plan based on the organic combination of general education and professional education with "basic + professional" as the basic structure, both in the basic platform stage and in the professional education stage, focus on cultivating entrepreneurial talents and set up relevant courses. For example, in the basic platform, the education system should include employment and entrepreneurship guidance courses in public compulsory courses, and set up a series of entrepreneurship education courses with characteristics such as the KAB entrepreneurship foundation for college students as elective courses for students. In the pilot professional education, the education system should set up entrepreneurship practice, professional entrepreneurship, small and medium-sized enterprise entrepreneurship management, etc. as professional compulsory courses. Through the main channel of teaching, the education system should systematically educate students on entrepreneurship theory and knowledge, and strengthen the cross-integration of professional courses and entrepreneurship courses. In the practical teaching link, the education system should propose basic practice, innovative practice, creative practice, and other models, using practical teaching carriers such as professional internships, practices, and open laboratory projects to strengthen the cultivation of students' "learning to apply" abilities.

3.3 Strengthen school-enterprise cooperation

Enterprises are the service objects for the training of engineering professionals, and they are also powerful evidence for testing talent training, allowing enterprise needs to guide student training. Strengthening school enterprise cooperation is necessary to introduce the production environment and requirements of enterprises into the talent cultivation of universities, and to cultivate students based on the social needs of enterprises. Strengthening cooperation between schools and enterprises

can leverage the advantages of equipment and experience in actual production, enhance students' ability to solve practical problems, and learn professional knowledge from the perspective of actual production.

3.4 Building a faculty team for innovation and entrepreneurship education

Colleges and universities should adopt two methods of on campus cultivation and off campus recruitment to build a team of innovation and entrepreneurship education teachers and improve their teaching level. On the one hand, every semester, teachers are organized to participate in specialized training courses on innovation and entrepreneurship education reform in domestic universities, learn advanced experience in innovation and entrepreneurship education, and improve the teaching level of innovation and entrepreneurship education. At the same time, professional teachers are arranged to intern in enterprises for one year, go deep into the production line, familiarize themselves with the production, quality control, and management processes of enterprises, and improve their ability to guide innovation and entrepreneurship practice; On the other hand, enterprises hire technical backbone and senior management personnel as part-time mentors, sign innovation and entrepreneurship education service agreements, issue appointment letters, regularly come to the school to teach students innovation and entrepreneurship courses, introduce knowledge of intellectual property, enterprise management, financial and tax declaration, etc. to innovation and entrepreneurship teams, and cultivate a team of innovation and entrepreneurship education teachers with profound professional foundation and rich entrepreneurial practice experience.

4. Conclusions

Integrating innovation and entrepreneurship education into professional education and building a comprehensive innovation and entrepreneurship education system based on "new engineering disciplines" is an inevitable requirement for the development of the times and an important way to improve the innovation and entrepreneurship abilities of college students. Student entrepreneurship not only meets the needs of higher education reform, but also adapts to the cultivation of versatile and creative talents. Entrepreneurship education for college students should adhere to the educational philosophy of "giving students the autonomy of learning" and "giving students the choice of success", organically integrating entrepreneurship education and professional education, creating a new talent cultivation system with the cultivation of students' innovation and entrepreneurship abilities as the core, creating better conditions for learning to generate talents, and creating a new cultural atmosphere conducive to the cultivation of innovative talents; Continuously deepen quality education, guide and teach students to make reasonable choices that are suitable for their success. On the basis of adhering to innovative education, we should promote entrepreneurship education through innovative education and promote educational and teaching reform through entrepreneurship education.

The cultivation of innovative and entrepreneurial talents is a systematic project that requires close cooperation among universities, governments, and society. It requires the organic combination of the three to provide students with a broad platform for innovation and entrepreneurship. At the same time, we should continue to learn advanced experiences in innovation and entrepreneurship education at home and abroad, deepen the reform of teaching content and methods, create a good environment for students to innovate and start businesses, comprehensively cultivate students' professional qualities, improve their innovation and entrepreneurship abilities, and adapt to the demand for innovative talents in social development.

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