Research on the Mechanism and Practice of Innovative and Entrepreneurial Education in Colleges and Universities under the Background of Integration of Production and Education

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Abstract. Under the background of “mass entrepreneurship and innovation”, innovation and entrepreneurship have become the core competitiveness of colleges and universities. In order to solve the problem of cultivating the creativity and imagination of students in teaching cultivation, it is advocated to examine the innovation and entrepreneurship of universities in the context of collaborative innovation of production and education, which will help to further explore the dual-creation of colleges and universities based on the background of integration of production and education. The path of human ability. By optimizing the teaching system with the support of professional background, and aiming at cultivating students’ entrepreneurial awareness and ability, they will improve the practice of dual creation, further stimulate students' entrepreneurial passion, and coordinate student development with future careers.

The Background of Integration of Production and Education Helping Universities to Create and Cultivate Talents

The Integration of Production and Education has Become an Inevitable Choice for Universities to Promote Innovation and Entrepreneurship

Foreign research on the integration of production and education has a history of more than 100 years and has developed a multi-direction and multi-development mode of school-enterprise cooperation. However, in China, the research time is relatively short, and it mainly focuses on surface research, and the research on its mechanism is less. With the deepening of higher education, major colleges and universities have responded to the economic and social transformation and breakthrough, and have broken through the bottleneck of the scientific and technological innovation topic and the actual disconnection of industrial demand. They have begun to focus on the goal of cultivating people, attach importance to cooperation with industry, and cultivate high-quality application types. Double talent. In the 13th Five-Year Plan of National Education, it is also mentioned that we should promote the transformation of qualified universities into application-oriented ones, shift the orientation of running schools to enhancing students' employment and entrepreneurship abilities, and transfer the mode of running schools to the integration of production and education and the cooperation between schools and enterprises [1]. On the basis of vigorously developing innovation and entrepreneurship in colleges and universities, the in-depth exploration of the integration of production and education from the two aspects of industrial demand and talent cultivation can make the combination of industry, education and talents more suitable for the development and needs of the times and society.
Strengthening the Significance of Professional Innovation and Entrepreneurship Education

Cultivate Students' Dual Practical Ability to Make Students More Competitive. Innovation and entrepreneurship education is an important teaching reform carried out by colleges and universities in recent years, and it is also an important part of the connotation construction and characteristic development of colleges and universities in the new era environment. In the process of strengthening innovation and entrepreneurship education, colleges and universities take the professional subject knowledge as the horizontal basis, the innovative and entrepreneurial talents training mechanism as the vertical orientation, and the combination of professional skills education and innovation and entrepreneurship education, can cultivate a large number of professional types with practical innovation ability. Innovate talents to enhance their own employment competitiveness.

Improve the Quality of Colleges Education and Make it More Sustainable. Innovation and entrepreneurship education is a new field of exploration in higher education this year. B.S. Chen pointed out at the National Education Work Conference that education standards determine the quality of education, and all relevant education departments should speed up the construction of education standardization. Based on their own school-running orientation, colleges and universities fully integrate innovation and entrepreneurship education into students’ daily learning life through professional teaching and practice innovation, paying attention to teaching methods and combined talent training objectives, so that universities can promote innovation and entrepreneurship education. In the process of checking and filling in the gaps, and steadily improving the quality of running schools, thus stimulating the development potential of institutions of higher learning.

Research on the Mechanism of the Integration of Production and Education in the Whole Process of Innovation and Entrepreneurship Education

The Competition Mechanism of the Integration of Production and Education in the Whole Process of Innovation and Entrepreneurship Education

Introducing competition in the process of innovation and entrepreneurship education will become the main theme of the combination of colleges and industries. The fierce competition can promote the development of students’ dual ability. From the series of innovation and entrepreneurship events, it can be seen that the recognition of the judges and enterprises is the key to determining the success of students’ innovative and entrepreneurial works and their ability to compete. The emergence of such competitions is not only the requirements of the era of industrial development, but also the ability of college students to demonstrate their dual creativity.

The Evaluation Mechanism of the Integration of Production and Education in the Whole Process of Innovation and Entrepreneurship Education

The evaluation of dual-innovation education can not only summarize the data, but should conduct a comprehensive evaluation from the aspects of the effectiveness of the society and the results of talent cultivation. Its effect is evaluated by universities, industry and society [2]. The university mainly evaluates the formation of the teacher's dual education concept, the development of the school's dual-innovation curriculum and practice, the students' dual creativity and curriculum satisfaction. The industry pays attention to the evaluation of the comprehensive ability and quality of students who graduated from employment. The society focuses on the comprehensive evaluation of the school's talent training, employment and entrepreneurship, awards for innovation and entrepreneurship of teachers and students of all kinds of competitions, and graduates' ability to grasp entrepreneurial opportunities.

The Mechanism of Environment Construction in the Whole Process of Innovation and Entrepreneurship Education

In order to achieve a better double-education effect, colleges and universities work together to carry out double-initiative activities, organize students to conduct business visits and study, and fully
integrate innovation and entrepreneurial knowledge in the process of training, so as to create a more conducive to college students to improve their ability to create and enhance their ability. A good environment for cognition. At the same time, the public's propaganda on the knowledge of innovation and entrepreneurship education has been continuously strengthened, and the idea of injecting entrepreneurship into college students is better.

**Exploration on the Ways of Professional Innovation and Entrepreneurship Education in Colleges and Universities under the Background of Industry-education Integration**

**Innovation and Entrepreneurship are in Line with the Talent Training System**

First of all, from a personal point of view, college students need to constantly accumulate curriculum knowledge inside and outside the school, cultivate strong thinking ability and problem-solving ability in the learning process, and enhance themselves through practical training. Secondly, from the perspective of the school, the first is that universities should strengthen cross-disciplinary teaching, take the subject knowledge as the horizontal basis, and take innovation and entrepreneurship education as the vertical orientation to adjust the students' knowledge structure to ensure that students can fully apply their professional knowledge. The second is to open a transportation-related innovation and entrepreneurship course or training in a conscious and purposeful manner according to the needs of the industry. The third is to improve the teaching mode, clarify the goal orientation of "double-creative" talents, and establish a student-oriented, teacher-oriented education and teaching model [3]. The fourth is to seek multi-dimensional cooperation, which will increase the resources of the school and increase the opportunities for students to receive guidance. Finally, from a social point of view, all sectors of society should work with the school to establish a relevant practice base, and also need to study the various aspects of student training with the teaching department. The talent cultivation mechanism is shown in Fig. 1.

![Figure 1. Talent Cultivation Mechanism Diagram under the Integration of Production and Education.](image)

**Coordination between Innovation and Entrepreneurship and the Teaching System**

**Correct the Teaching Plan.** According to the professional development situation, the course credits are revised. Under the condition that the basic knowledge of students is unchanged, the basic compulsory courses related to the industry's innovation and entrepreneurship are appropriately added. At the same time, the credits of the elective courses are adjusted to provide more time for students to learn knowledge independently. And more choices.

**Establish a Group of Transportation Knowledge Courses that Integrate with Innovation and Entrepreneurship Education.** Focusing on the professional core curriculum system, we offer
interdisciplinary elective courses related to professional courses [4], such as project innovation and project development courses, starting with the relevance of disciplines and guiding students to master the path and method of professional project research and development.

Explore New Teaching Models. On the basis of classroom teaching, after-school exercises, and final exam-based teaching models, colleges and universities should cooperate with enterprises to explore non-standard answer examinations. At the same time, it is also possible to add two major links of enterprise personnel teaching and enterprise evaluation in the teaching mode to promote production. Teach further integration.

Strengthen the Construction and Cooperation of Teaching Resources. Instructors or companies with strong ability and experience in innovation and entrepreneurship are required to provide professional support in the preparation of books and lectures. With the continuous development of Internet technology, colleges and universities should pay attention to the network education position, open an innovative and entrepreneurial network classroom [5], add online and school-enterprise interactive practice links, and increase students' dual-creation ability.

The innovation and entrepreneurship education of colleges and universities should run through the entire academic life of students. From the perspective of undergraduate students, the goal is to basically cultivate the all-round development of morality, intelligence, body, beauty and labor. It has a solid professional foundation, innovative and pragmatic, and strong practical ability. Application-oriented professionals who meet the needs of the development of the industry; From the graduate level, postgraduate professional practice is an important teaching and research training link in the process of postgraduate training. Full and high-quality professional practice is an important guarantee for the quality of professional degree education. On the basis of the existing undergraduate ability, the postgraduate's ability to innovate and innovate should be reflected in the problem of finding and solving problems. The development process is shown in Fig. 2.

![Figure 2. Undergraduate and Postgraduate's Program Development Process Requirements.](image)

Integration of Innovation and Entrepreneurship with Students' Practical Education

The Innovative Entrepreneurship Course is an open and flexible course. Therefore, based on the content of the professional course, a curriculum model combining simulation and practical training can be established, and a comprehensive innovation and entrepreneurship skill training system can be developed [6]. The practical problems are solved to help students build a complete system of innovative entrepreneurial knowledge and skills, and cultivate students' innovative thinking skills. In order to strengthen students' practical ability, they can carry out special innovation and entrepreneurial activities, such as innovative entrepreneurship training programs and science and technology works entrepreneurship competitions. According to the characteristics of the school's
disciplines and the needs of students' development, build a dual-creative training and discipline competition management system, integrate scattered resources, and promote the development of practical education. At the same time, through the in-depth cooperation of “production, study and research” to attract resources from society, enterprises and other fields, build a platform for college students' entrepreneurial incubation bases, and introduce a number of high-quality, high-level in-house tutors to enter the platform, and strengthen the relationship between students and enterprises. Really combine innovative and entrepreneurial learning with professional practical work.

Innovation and Entrepreneurship Fit in with University Management Mechanism

In order to strengthen the training of students' dual-creation competition ability to meet the needs of social talent development, colleges and universities must formulate a complete education management mechanism to adapt to it, and increase investment to solve the problem of poor school infrastructure and weak teachers, through the development of some flexible and inelastic measures to promote the completion of innovation and entrepreneurship education. Secondly, give full support to students' entrepreneurial innovation work, provide entrepreneurial venues and certain venture capital, and provide some guidance and help for problems encountered in the process of innovation and entrepreneurship. Finally, relevant rules and regulations can be formulated to guarantee students' entrepreneurial innovations. Entrepreneurial achievements can be transformed into certain credits, and material and spiritual rewards, such as award certificates and bonus awards, are awarded to students who participate in innovative and entrepreneurial activities and achieve outstanding results.

Conclusion

As higher education enters the stage of popularization, the integration of innovation and entrepreneurship education and professional education is not only conducive to the construction of the university's own connotation, but also conducive to the improvement of teaching quality. Colleges and universities should transform the traditional single "light theory and light practice" education, integrate the cultivation of innovation ability and practical ability into professional education, and make the relationship between the two from "separation" to "organic integration", further improve students' innovation and practice. Ability to help students develop in an all-round way.

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References


