

Research on the path of innovation and entrepreneurship education in colleges and universities under the background of new engineering

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ABSTRACT: the new engineering education is closely related to the education of innovation and entrepreneurship. It is an important and urgent task for colleges and universities to choose the path of innovation and Entrepreneurship education under the new engineering background. Based on the literature review, empirical studies and case studies at home and abroad, this paper puts forward the path choice of innovation and entrepreneurship education in colleges and universities under the background of new engineering, it includes paying attention to practical ability training, strengthening cooperation with industry, training global talents and paying attention to social sustainable development. The choice of these paths will help colleges and universities to improve the quality and effect of innovation and entrepreneurship education, and train talents with innovative spirit and entrepreneurial ability.

Key Words: New Engineering Background; innovation and entrepreneurship education in colleges and universities; path research

1. Introduction

Under the background of New Engineering Course, innovation and entrepreneurship education in colleges and universities has become an important issue of educational reform and development. With the rapid development of science and technology and the change of social demand, the demand for innovative and entrepreneurial talents is increasing day by day, to cultivate more innovative and entrepreneurial talents. The purpose of this study is to explore the path choice of innovation and entrepreneurship education in colleges and universities under the background of new engineering, so as to help colleges and universities better train talents with innovative spirit and entrepreneurial ability. Through the study of path selection and practical experience, further optimize the content and mode of innovation and entrepreneurship education to meet the needs of the new engineering era.

2. The importance of college innovation and entrepreneurship education in the context of new engineering

2.1 the relationship between innovation and entrepreneurship education in the context of new engineering, Innovation and entrepreneurship has become an important driving force to promote the development of science and Technology and social progress. New Engineering Education emphasizes interdisciplinary learning and interdisciplinary integration to cultivate students' innovative thinking and practical ability, while innovative entrepreneurship education provides students with the opportunity to apply what they have learned to practical problem solving and entrepreneurial innovation. The two are closely linked and complement each other.

2.2 increasing demand for innovative and entrepreneurial talent with the rapid development of science and Technology and economic transformation and upgrading, the demand for innovative and entrepreneurial talent is increasing. Under the background of New Engineering, there is an urgent need for talents with scientific and technological background, innovative spirit and entrepreneurial ability. The Innovation and entrepreneurship education in colleges and universities can meet this demand and provide more innovative and entrepreneurial talents for the society.

2.3 the role of colleges and universities in the training of innovative and entrepreneurial talents colleges and universities play an important role in the training of innovative and entrepreneurial talents. First of all, the university is the source of knowledge and innovative leader, through the new engineering education to cultivate students' innovative thinking and technical ability. Secondly, universities can provide rich resources and platforms for innovation and entrepreneurship, such as business incubators and Science Park. Finally, the cooperation between colleges and industry can promote technology transfer and industrial upgrading, build up the cooperation platform between colleges and enterprises, and train innovative and entrepreneurial talents.

3. The path choice and practice of innovation and entrepreneurship education in colleges and universities

3.1 the present situation and characteristics of the path of innovation and entrepreneurship education in different colleges and universities have their own unique characteristics and path choice in innovation and entrepreneurship education, to meet the needs of different groups of students. First of all, some comprehensive universities focus on training students' comprehensive quality and innovative ability. These universities usually provide students with the basic knowledge and skills of innovation and entrepreneurship by offering courses of innovation and entrepreneurship, organizing innovation and entrepreneurship competitions and entrepreneurship practices. They focus on developing students' innovative and entrepreneurial awareness, which enables students to solve problems and create opportunities in an interdisciplinary environment. Second, engineering universities focus on technological innovation and industrial transformation. These universities often work with companies and research institutes to implement a combination of production, teaching and research education

model. Through activities such as project practice, Scientific Research Cooperation and technology transfer in cooperation with enterprises, students are able to combine their technological capabilities with the actual needs of the industry, develop their capabilities in the field of technological innovation and entrepreneurship. Therefore, different colleges and universities have different characteristics and path choices in innovation and entrepreneurship education. Comprehensive universities focus on training comprehensive quality and innovative ability, engineering universities focus on technological innovation and industrial transformation, application-oriented universities focus on practical ability. These different educational methods and paths aim to meet the needs of different groups of students and train innovative and entrepreneurial talents to adapt to different industries and fields. And different colleges and universities can learn from each other and exchange experience to constantly improve the quality and level of innovation and entrepreneurship education.

3.2 principles and factors for the selection of innovative entrepreneurship education paths in colleges and universities the following principles and factors need to be taken into account when choosing innovative entrepreneurship education paths in order to ensure the quality and effectiveness of education. First of all, to adapt to the needs of social development is the first principle in choosing a path. Colleges and universities need to pay attention to social hot spots, industry trends and technological changes in order to better understand the social demand for innovative and entrepreneurial talents. The school should analyze and study the needs of the field of innovation and entrepreneurship through regular research and cooperation with all walks of life in order to formulate the path of innovation and entrepreneurship education in line with the needs of social development. Secondly, the school's own resources and characteristics are also important factors in choosing the path. Each university has its own unique educational resources and characteristics. According to its own characteristics and advantages, schools can choose their own path of innovation and entrepreneurship education. For example, if a school has a strong faculty and research strength in a particular field, it can focus on fostering technological innovation and scientific entrepreneurship. When choosing the path of innovation and entrepreneurship education, colleges and universities should take into account the needs of social development and the characteristics of their own resources. At the same time, cooperation with other educational institutions and enterprises is also an important factor to promote the development of innovation and entrepreneurship education. Through reasonable choice of path, colleges and universities can better cultivate innovative spirit and entrepreneurial ability of talents, for social and economic development to make a positive contribution.

3.3 successful practice cases of innovation and entrepreneurship education path in colleges and universities. Some colleges and universities have made remarkable achievements in the field of innovation and entrepreneurship education, and have provided successful practice cases. Here are a few examples: first, some colleges and universities offer students a full range of support for innovation and entrepreneurship by partnering with companies to build entrepreneurship training and support platforms. These collaborative platforms provide entrepreneurship education courses, mentoring, venture capital resources, etc. . By working with enterprises, students can better understand the operation of enterprises and start-up process, and gain practical experience, and establish cooperation and resource network with professionals. Secondly, some colleges and universities take an active part in the College Alliance to build the innovation and entrepreneurship education ecosystem. In this ecosystem, universities can cooperate and help each other across disciplines, and jointly organize innovation and entrepreneurship contests, entrepreneurship lectures and entrepreneurship projects. This kind of inter-university cooperation can provide more study and practice opportunities, and develop students' innovative thinking and cooperation ability.

4. The construction of the evaluation system of innovation and entrepreneurship education

4.1 the importance of evaluation of innovation and Entrepreneurship Education Evaluation of innovation and Entrepreneurship education evaluation is an important means to ensure the quality and effect of innovation and entrepreneurship education in colleges and universities. The aim of the evaluation is to provide an objective and comprehensive evaluation of students' innovative and entrepreneurial ability and quality, and to provide guidance for the improvement of educational models and methods in colleges and universities. The evaluation of innovation and entrepreneurship education is not only related to students' personal development and employment competitiveness, but also related to the sustainable development of innovation and entrepreneurship education in colleges and universities. First of all, the evaluation of innovation and entrepreneurship education needs to pay attention to students' innovation and entrepreneurship ability and quality. This includes students' creative thinking ability, problem solving ability, team cooperation ability, communication ability and so on. The evaluation can assess the students' comprehensive ability by examining the innovative and entrepreneurial projects they have completed, the competitions they have participated in and the practical activities they have taken part in. Secondly, the evaluation of innovation and entrepreneurship education needs to pay attention to the effectiveness of college education models and methods. The evaluation can examine whether the educational model and method can really stimulate students' innovation potential and entrepreneurial spirit from the aspects of curriculum arrangement, teaching resources and teachers' strength. In addition, students' feedback and comments can be collected to understand their evaluation of the curriculum and teaching methods, so as to provide guidance for the improvement of higher education. Finally, the evaluation of innovation and entrepreneurship education also needs to consider the social impact of universities and sustainable development. The education of innovation and entrepreneurship should be closely combined with the social needs and the development of the industry, and can provide practical application and employment support for students. The evaluation can assess the educational effect and social impact of colleges and universities by tracking the employment situation and innovation and entrepreneurship of graduates.

4.2 principles and methods for the establishment of an evaluation index system for innovation and entrepreneurship education should be guided by the following principles and methods to ensure the accuracy and effectiveness of the evaluation: The evaluation index

should cover students' knowledge, skill and accomplishment. Innovative Entrepreneurship is a comprehensive capability, which includes not only innovative thinking and entrepreneurial skills, but also relevant domain knowledge, team cooperation, market insight and so on. Evaluation indicators should take these aspects into account in order to comprehensively measure students' performance and ability in innovation and entrepreneurship education. Second, the indicators should be targeted and Operability. Evaluation indicators should accurately reflect students' ability and performance in innovation and entrepreneurship, rather than simply assessing course participation or general appearance. It can be measured and evaluated through specific indicators for schools and teachers to improve their teaching and to help students improve their ability to innovate and start businesses. In addition, the construction of evaluation indicators should also fully consider the needs of the industry and the trend of social change. The needs and trends in the field of innovation and entrepreneurship are constantly changing, and the evaluation indicators should be consistent with them. This means that the evaluation index should be closely combined with professional standards and frontier fields, constantly updated and adjusted to adapt to the new engineering background of innovation and entrepreneurship personnel training. Finally, the construction of innovation and Entrepreneurship Education Evaluation Index system needs to adopt a variety of methods and the views of the participants. The construction of Evaluation Index should use questionnaire survey, interview, Case Study and other methods to obtain comprehensive evaluation data. At the same time, students, teachers, enterprises and industry experts should be widely consulted to ensure the scientific and effective evaluation indicators.

4.3 the evaluation system for innovative entrepreneurship education applicable to the new engineering context should have the following characteristics to ensure the effectiveness of the evaluation and its relevance to the needs of the times: first, the evaluation of innovation and entrepreneurship education should fully consider the cultivation of practical ability and innovation consciousness, not only the mastery of subject knowledge. Under the background of New Engineering, innovation and entrepreneurship education emphasizes students' practical ability and innovative thinking, and the evaluation system should attach importance to students' performance in practical projects and the cultivation of innovation ability. This includes assessment of students' participation in innovative entrepreneurship projects, problem solving and the application of technology tools. Secondly, the evaluation system should be combined with new scientific and technological means, such as big data, artificial intelligence and other technologies, to achieve objective, accurate and efficient evaluation. Under the background of New Engineering, Innovation and Entrepreneurship education focuses on training students' ability in new technology field, and it is more appropriate to evaluate students' performance and ability by using new technology means. By using big data to analyze students' innovative and entrepreneurial ability and artificial intelligence technology to carry out automatic evaluation, the subjective interference is reduced.

5. Under the background of New Engineering, college innovation and entrepreneurship education is facing a series of challenges

First of all, how to balance theoretical knowledge and practical ability training is an important challenge. The education of innovation and entrepreneurship needs to pay attention to training students' practical ability, innovative thinking and entrepreneurial consciousness while imparting subject knowledge. In addition, it is also an effective way to combine theory with practice by permeating the elements of innovation and entrepreneurship into the teaching of various subjects. Second, the shortage of teachers and resources is another challenge. Colleges and universities need to strengthen the construction of teaching staff, train more teachers with innovative and entrepreneurial ability and experience, and provide teacher training and support. At the same time, it is necessary to optimize the allocation of educational resources, make full use of innovation and entrepreneurship resources and platforms inside and outside the school, and provide students with a wider range of innovation and entrepreneurship education resources.

6. Conclusion Innovation and entrepreneurship education in colleges and universities is facing new challenges and opportunities under the background of new engineering

Based on literature review, empirical research and case study, this paper puts forward the path choice of innovation and entrepreneurship education in universities under the background of new engineering. Focusing on practical ability training, strengthening cooperation with industry, cultivating global talents and paying attention to social sustainable development are the main path choices. However, further research and practice are still needed to promote the development and innovation of innovation and entrepreneurship education under the background of new engineering.

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