

Research on the Development Path of Innovation and Entrepreneurship Education in Engineering Colleges

Jipeng Zhao^{1,*}, Dongxu Liu²

¹Organization Department, North China Electric Power University, Baoding 071003, PR China

²Department of Economics and Management, North China Electric Power University, Baoding 071003, PR China

* Corresponding author. E-mail address: 138286331@qq.com (Jipeng Zhao).

Abstract: Under the background of the establishment of new engineering, undergraduate colleges have more requirements for the development of innovation and entrepreneurship education. However, under the background of new engineering, there are still some problems in the innovation and entrepreneurship education of undergraduate colleges. Therefore, the article will analyze the problems in the innovation and entrepreneurship education of undergraduate colleges under the background of new engineering, and propose relevant solutions.

Keywords Engineering colleges, Innovation and entrepreneurship education, Development path

INTRODUCTION

Innovation and entrepreneurship education is aimed at cultivating talents with basic entrepreneurial qualities and pioneering personalities. It is not only an education focused on cultivating students' entrepreneurial awareness, innovative spirit, and innovative entrepreneurial ability, but also faces the whole society and targets Those entrepreneurial groups who intend to start a business, have already started a business, and have successfully established a business will be trained in innovative thinking and entrepreneurship training in stages and at different levels [Hong, 2017]. Innovation and entrepreneurship education is essentially a practical education.

In 1991, the Tokyo International Conference on Entrepreneurship and Innovation Education broadly defined "entrepreneurship and innovation education" as: cultivating the most pioneering personality, including the pioneering spirit, adventurous spirit, entrepreneurial ability, independent working ability and technical, social and management skills Cultivation. The Ministry of Education stated in the "Opinions on Vigorously Promoting Innovation and Entrepreneurship Education in Colleges and Universities and Independent Entrepreneurship Work": "Initiating innovation and entrepreneurship education in colleges and universities, and actively encouraging college students to start their own businesses, is an in-depth study and practice of scientific development concepts in the education system. Serving important strategic measures for the construction of an innovative country; it is an important way to deepen the reform of higher education teaching and cultivate students' innovative spirit and practical ability; it is an important measure to implement employment-driven employment and

promote full employment of college graduates." The government attaches great importance to the development of innovation and entrepreneurship education activities in colleges and universities, adheres to the principles of strong foundation, platform, and re-guide, creating a good environment for innovation and entrepreneurship education, optimizing the system and service environment for innovation and entrepreneurship, and creating a campus cultural environment that encourages innovation and entrepreneurship. Build a full coverage, hierarchical and systematic university education system for innovation and entrepreneurship [Yu, 2019].

The development of innovation and entrepreneurship education is an inevitable development trend of the times. With the development of society, most companies have higher requirements for graduates' innovation and entrepreneurship capabilities, but the existing training model can no longer allow students to innovate to a certain extent [Shi, 2017]. Entrepreneurial ability has been improved. Therefore, the addition of new engineering subjects has provided a new way for China's undergraduate colleges to cultivate students' innovative and entrepreneurial ability, and has delivered excellent talents for the country's development strategy needs.

INNOVATION AND ENTREPRENEURSHIP EDUCATION

The meaning of innovation and entrepreneurship education

Innovation and entrepreneurship education generally refers to the cultivation of talents with basic

entrepreneurial qualities and innovative personalities. The school's innovation and entrepreneurship education is not only education to cultivate students' entrepreneurial consciousness, innovative spirit and entrepreneurial ability, but also to cultivate socially oriented education for groups that already have entrepreneurial awareness, and to train innovative thinking and entrepreneurial ability in stages and stages. In other words, innovation and entrepreneurship education is to teach students the skills of true entrepreneurship, exercise students' thinking ability, tap students' innovative spirit and improve students' level of innovation and entrepreneurship, so that students can stand out under the general trend of rapid development of innovative industries [Zhou, 2016]. It has a guiding role in students' career planning and career development direction.

Characteristics of innovation and entrepreneurship education

(1) Innovation: Innovation and entrepreneurship education is not a continuation of the existing entrepreneurial model. Many traditional industrial models have limitations today. Therefore, innovation and entrepreneurship education is to cultivate students' innovative thinking, so that students have a wealth of theoretical knowledge. Afterwards, innovative projects are carried out so that students can start their own businesses smoothly.

(2) Creativity: Entrepreneurship requires not only innovative thinking, but also a certain creative ability. This creative ability requires students to have the hands to discover eyes or inventions, but also students to have a certain insight into new industries or markets. Therefore, we must pay attention to the cultivation of students' creative ability when conducting innovation and entrepreneurship education.

(3) Practicality: Innovation and entrepreneurship education can not only teach students theoretical knowledge, but to allow students to practice according to the learned knowledge. Practice is the core link of innovation and entrepreneurship education. Only when the learned knowledge is used in the practice process, students will Training thinking ability and innovation ability is very important for students' development.

Ecological cultivation of innovation and entrepreneurship education

It is necessary to improve the innovation and entrepreneurship ability of college students, form a good atmosphere for innovation and entrepreneurship education, build a perfect innovation and entrepreneurship cultivation system, form a virtuous cycle system like an ecosystem, and build a comprehensive three-dimensional innovation and entrepreneurship education ecological cultivation

system. This system includes multiple subsystems such as colleges, governments, enterprises, families, and students. The subsystems are interconnected, interacted, and supported to form a complete innovation and entrepreneurship education cultivation system.

As the backbone of the innovation and entrepreneurship education system in universities, colleges and universities play a key role in the innovation and entrepreneurship education cultivation system.

As a participant and facilitator, the government is an important part of the innovation and entrepreneurship education ecosystem in colleges and universities. It plays an important role and can provide innovation and entrepreneurship education for colleges and universities in policy formulation, financial support, public opinion guidance, service system, department coordination, etc. Create a good external environment and play an active role that is difficult to replace.

Various enterprises, especially well-known enterprises, play an important role model in the innovation and entrepreneurship education of colleges and universities. They are the most intuitive feelings and goals of university graduates' innovation and entrepreneurship. Therefore, enterprises have to bear the responsibility in the innovation and entrepreneurship education of colleges and universities. Social responsibility to shirk.

The ultimate goal of innovation and entrepreneurship education is students. Only students who accept the concept of innovation and entrepreneurship and are brave to practice innovation and entrepreneurship can we say that innovation and entrepreneurship education has achieved practical results. There is a family behind every student, and family support is a powerful guarantee for students to practice innovation and entrepreneurship.

Content system of innovation and entrepreneurship education

(1) Cultivation of consciousness: Enlighten students' innovative consciousness and entrepreneurial spirit, enable students to understand the quality requirements of innovative talents, understand the concepts, elements and characteristics of entrepreneurship, etc., so that students can master the basic knowledge needed to carry out entrepreneurial activities.

(2) Ability improvement: Analyze and cultivate students' critical thinking, insight, decision-making ability, organizational coordination ability and leadership and other innovative and entrepreneurial qualities, so that students have the necessary entrepreneurial ability.

(3) Environmental cognition: guide students to recognize the current corporate and industry environment, understand entrepreneurial

opportunities, grasp entrepreneurial risks, master the process of business model development, design strategies and skills, etc.

(4) Practice simulation: Encourage students to experience all aspects of entrepreneurial preparation through entrepreneurship plan writing and simulation practice activities, including entrepreneurship market evaluation, entrepreneurial financing, business process and risk management.

PROBLEMS IN INNOVATION AND ENTREPRENEURSHIP EDUCATION IN ENGINEERING COLLEGES

Some colleges do not pay enough attention to innovation and entrepreneurship education

With the improvement of my country's economic level, more and more people choose to start a business, so most universities have launched innovation and entrepreneurship education. Innovation and entrepreneurship education is a type of education that fosters students' practical and innovative abilities. It advocates students' free-style development, and the premise of free-style development is to have new educational ideas and educational concepts, so this requires schools to be innovative and entrepreneurial. During education, the students' thoughts and abilities are comprehensively cultivated. However, there are still undergraduate colleges that do not understand and pay attention to innovation and entrepreneurship education. These colleges have only carried out small-scale and low-level reforms on innovation and entrepreneurship education, resulting in low enthusiasm for students to participate, which is very unfavorable for development. Engineering colleges and universities should pay attention to the development of innovation and entrepreneurship education, learn from other countries' innovation and entrepreneurship education models, apply excellent teaching concepts and teaching practice methods to the teaching process, and improve the school's level of innovation and entrepreneurship education.

Insufficient teachers for innovation and entrepreneurship education

The faculty is an important part of schools and other educational institutions, and a good faculty will do more with less. According to the survey, most colleges and universities do not have a team of teachers dedicated to innovation and entrepreneurship education. Due to the lack of teachers, the innovation and entrepreneurship education in colleges and universities is mostly taught by instructors with insufficient experience in innovation and entrepreneurship, while the counselors do not have rich innovation and entrepreneurship. Knowledge and teaching ability, there will be many problems in

teaching, for example, when students who are starting a business ask the counselor "how to solve the problem of insufficient innovation in entrepreneurship", the counselor may not be able to answer, This has led to a decrease in students' interest in innovation and entrepreneurship courses, which has restricted the development of college innovation and entrepreneurship education. Therefore, engineering colleges and universities must prepare a relatively sufficient faculty for innovation and entrepreneurship education, so that students can acquire enough knowledge of innovation and entrepreneurship, and lay a solid foundation for the success of future entrepreneurship.

Lack of innovation and entrepreneurship practice platform

To strengthen the development of education, the combination of industry and education can be adopted. Similarly, the combination of industry and education also has positive significance for innovation and entrepreneurship education. According to the analysis of innovation and entrepreneurship education in undergraduate colleges and universities, it is found that the innovation and entrepreneurship practice platform, the combination of industry and education and the industry-university cooperation platform in colleges and universities are still in a lack of state. The development of innovation and entrepreneurship education must be based on practice. If students only conduct theory The learning of knowledge will lead to lower practical ability and level of practice of students, which is not conducive to the cultivation of students' innovative entrepreneurship and the development of innovative entrepreneurship education in schools. Therefore, engineering colleges and universities should respond to the call of the country and appropriately increase the production-education combination practice platform, so that students can get practical and innovative training through the platform, and promote the development of innovation and entrepreneurship education.

METHODS OF STRENGTHENING INNOVATION AND ENTREPRENEURSHIP EDUCATION IN ENGINEERING COLLEGES

Learn from the teaching concept of new engineering

In order to adapt to the development of the times and respond to the call of the country, most undergraduate colleges take the cultivation of students' innovation and entrepreneurship as a key teaching task. Under the background of new engineering, the school adopts the teaching concept of new engineering in order to accelerate the development of innovation and entrepreneurship

education. Methods. The new engineering department is aimed at cultivating diversified and innovative excellent engineering talents, and is an educational discipline aimed at the development of new economies featuring new technologies, new formats, new industries, and new models. Therefore, colleges and universities need to Tell the knowledge of adapting to the needs of social development and technological innovation of enterprises, apply innovative, open and shared new development concepts to teaching, and add knowledge of all aspects and links of innovation and entrepreneurship according to the teaching process and model of new engineering, for college students To lay the foundation for innovation and entrepreneurship practice activities. Due to the rapid development of the Internet, in the innovation and entrepreneurship education, the development model and content of "Internet +" should also be integrated according to the teaching concept of the new engineering subject, so that students can adapt to the development of the times, cultivate good entrepreneurial ability and innovative spirit, and create innovative entrepreneurship for students. Practice lays a good foundation.

Increase faculty

Studies have shown that many colleges and universities have a problem of lack of teaching staff and low level of education in innovation and entrepreneurship education, which will lead to students' lack of interest in innovation and entrepreneurship. Therefore, it is necessary to build a diversified and high-level teaching staff. The school can form an innovative and entrepreneurial education teaching team: the teachers of this team should be business managers or professional lecturers with rich entrepreneurial experience and excellent teaching abilities. Such a team has a positive role in training students' interest in learning and innovative thinking. The school can form an innovation and entrepreneurship education practice team: the teachers of this team should be entrepreneurs or alumni with excellent management experience and practical experience. During the teaching process, the management mode and management methods in the enterprise can be taught to students. It can also lead students into enterprises to practice and learn innovative projects, thereby contributing to the development of students' creativity, innovation, and practical ability; schools can form innovative and entrepreneurial education teaching construction teams, and the teachers of this team are rich in The teachers of the curriculum setting and curriculum arrangement, the team can reasonably set the education system in teaching, improve the content of the syllabus, and closely design the teaching links, so as to create an excellent innovation and entrepreneurship education

curriculum and improve the innovation and entrepreneurship education. teaching level.

Add the innovation and entrepreneurship practice platforms

Practice is of great significance to the development of innovation and entrepreneurship education. Engineering colleges and universities should actively establish an innovation and entrepreneurship practice platform. According to the guiding ideology of the implementation of the combination of industry and education to promote the development of education in the country, engineering colleges and universities can add a platform for the integration of industry and education in innovation and entrepreneurship: schools can set up innovative industries based on the content of innovation and entrepreneurship education. The implementation of this industry should be based on the theory of innovation and entrepreneurship education Knowledge matching allows students to apply the knowledge learned in the classroom of innovation and entrepreneurship theory to industrial practice. Using this combination of theory and practice to teach can deepen students' memory and understanding of theoretical knowledge, allowing students to practice in practice Find a development direction that suits you, so as to achieve the purpose of promoting the development of innovation and entrepreneurship education. You can also set up an online innovation and entrepreneurship education platform: the online platform includes knowledge on innovation and entrepreneurship education knowledge, innovation and entrepreneurship education practices, background of innovation and entrepreneurship projects, and comprehensive testing of innovation and entrepreneurship. The opening of the platform allows students to fully understand innovation The basic knowledge and ability required for entrepreneurship to evaluate whether it is suitable for the implementation of innovative and entrepreneurial projects, to help students establish correct values and career goals, and enhance students' competitiveness. Therefore, engineering colleges and universities should pay attention to the establishment of innovative and entrepreneurial practice platforms, so as to create a professional education base that can improve the level of learning knowledge and exercise ability for students, and bring new development paths for innovative and entrepreneurship education in colleges and universities.

CONCLUSIONS

Research on the path of innovation and entrepreneurship in engineering colleges and universities can increase colleges' attention to innovation and entrepreneurship education, lay a foundation for the cultivation of excellent talents with entrepreneurial capabilities and innovative thinking,

and can also promote innovation and entrepreneurship education reform in China. Therefore, the text is mainly based on innovation The meaning and characteristics of entrepreneurship education, the problems in innovation and entrepreneurship education in engineering colleges and universities, explore the methods available for innovation and entrepreneurship education in engineering colleges, and hope to contribute to the development of innovation and entrepreneurship education in engineering colleges and universities.

ACKNOWLEDGMENTS

The work is supported by the Fundamental Research Funds for the Central Universities (2017MS174).

REFERENCES

- Hong-Li S U . Research on the Construction of Innovation and Entrepreneurship Education System of College Students under "Internet+"[J]. Value Engineering, 2017, 8(2):12-16.
- Shi-Jie Z . Research on the construction of innovation and entrepreneurship education system in colleges and universities[J]. journal of jiamusi vocational institute, 2017, 24:23-25.
- Yu X. Research on the Present Situation and Countermeasures of Innovation and Entrepreneurship Education in Private Colleges and Universities in Jilin Province[C]// International Conference on Contemporary Education & Society Development. 2019.
- Zhou Z . Research on Model Construction of Innovation and Entrepreneurship Education in Domestic Colleges[J]. Creative Education, 2016, 7(4):655-659.