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Analysis on the Cultivation Path of Innovation and Entrepreneurship Talents in Local Universities

—Taking Qingdao Huanghai University as an Example

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***Abstract*—Innovation and entrepreneurship education play an important role in the transformation and development of colleges and universities. Therefore, in recent years, most universities in China have carried out innovation and entrepreneurship education. In the process of carrying out innovation and entrepreneurship education, some colleges and universities do not grasp the essential characteristics of innovation and entrepreneurship education, which seriously violating the essence of innovation and entrepreneurship education from the perspective of innovation and entrepreneurship education. This paper expounds the characteristics of innovation and entrepreneurship education and reveals the relationships between innovation and entrepreneurship education with professional education. Taking Qingdao Huanghai University as an example, this paper puts forward the training path applying undergraduate professional innovation and entrepreneurship talents in local universities. Through years of practice, Qingdao Huanghai University has achieved ideal results by strengthening teacher training, creating science and technology innovation studios, conducting school-enterprise collaborative education, and creating innovative entrepreneurial incubation bases based on professional education. The training path for innovative entrepreneurial education talents is suitable for local colleges and universities.**

Keywords—local universities; application-oriented undergraduate; innovation and entrepreneurship; talent training

I. INTRODUCTION

In 2018, the Ministry of Education issued the "Opinions on Accelerating the Construction of High-level Undergraduate Education to Improve the Ability of Talent Cultivation" (Teaching [2018] No. 2) clearly stated that the reform of innovation and entrepreneurship education should be deepened as a comprehensive reform of higher education[1]. The breakthrough is to face the whole, and classify teaching, and combine professionalism, and strengthen practice to promote the students' all-round.

As an important part of higher education, local colleges and universities are an important position for the training of applied undergraduate talents. It is also the core position for the implementation of innovation and entrepreneurship education for young students. It is necessary to fully understand the innovation and entrepreneurship education for deepening the reform of higher education and the cultivation of innovative and applied talents. Local colleges and universities should closely integrate innovation and entrepreneurship education with professional education, reforming teaching mode, curriculum system construction, teacher team training, and training base construction and explore a path suitable for local colleges and universities for innovation and entrepreneurship education, and cultivate more outstanding innovative and practical talents for local economic development.

II. CHARACTERISTICS OF INNOVATIVE ENTREPRENEURSHIP EDUCATION

A. Creativity

Creativity is the core content of innovation and entrepreneurship education. Creative learning requires students to actively discover problems and explore ways to solve problems independently. It is an effective way to improve their identify problems, analyze issues and solve problems. The process of creation is by students using innovative thinking, multiple tools and cross-disciplinary knowledge to solve problems. In the process of learning, students undergo the generation of innovative thinking, the verification of the process and the birth of the results, which not only can improve their problem-solving ability, but also enhance the enthusiasm for creation and the confidence of success, so as to truly develop core quality of creative ability[2].

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B. Practical

Innovative entrepreneurship education is a practical process which provides students with the possibility to understand and transform the world. All the problems arising from innovation and entrepreneurship need to be tested by practice. At the same time, practice is a powerful means to test the effectiveness of innovation and entrepreneurship. Through practice, we find the shortcomings in innovation and entrepreneurship, and then improve, which makes innovation and entrepreneurship more abundant and full.

Therefore, schools should actively build a platform for innovation and entrepreneurship education which makes it to take root, bloom and result. In the school, the laboratories, innovation studios, engineering training centers and other places are effective practice bases for innovation and entrepreneurship education[3].Local universities can also establish an innovation and entrepreneurship incubation base to transform innovation and entrepreneurship. Outside the school, the school should actively cooperate with enterprises to establish a variety of different forms of practice bases, so that students can carry out innovative and entrepreneurial activities in the real environment, and enhance the effectiveness of innovation and entrepreneurship education.

C. Synergy

The overall goal of innovation and entrepreneurship education is cultivating college students' innovative and entrepreneurial quality. On the one hand, through the organic integration of ideological and political education, such as general education, professional education and engineering education, college students are encouraged to form a new type of educational concept and model[4]. On the other hand, by strengthening exchanges and cooperation with universities, enterprises, and industries, expanding the development of intellectual resources and building a practical platform, college students' practice innovation and entrepreneurship ability get promoted.

Therefore, innovation and entrepreneurship education is comprehensive quality education. Colleges and universities should promote school-school collaboration, school-enterprise collaboration, science and education collaboration, and integrate innovation and entrepreneurship education resources, and organize students to actively participate in science and technology innovation competitions, research projects and build a practical platform for innovation and entrepreneurship.

D. Sustainability

The education of sustainable development reflects the interdisciplinary and holistic nature of education. It is an effective guide to the cross-development of the discipline of training innovative talents. The education of sustainable development emphasizes critical thinking and solving problems. It is a requirement for cultivating innovative thinking of innovative talents. Sustainable development education focuses on the application and locality of education[5]. Innovation and entrepreneurship education should be combined with professionalism, strengthen the practical application, and enhance its effectiveness.

It can be seen that sustainable development is an important feature of innovation and entrepreneurship education. Colleges and universities should establish a harmonious view, a compatible view and a unified view of innovation and entrepreneurship education. In the setting of educational means and educational mode, affect each other and contain each other. In dealing with the interests of all aspects of education, maintain the unity of the three benefits of students, schools and society.

III. The Misunderstanding of Innovation and Entrepreneurship Education

A. Conceptual misunderstanding

Innovation and entrepreneurship is a holistic concept that includes the two meanings of innovation and entrepreneurship. The two concepts of innovation and entrepreneurship are not isolated but organically unified. Innovation is the foundation of entrepreneurship, and entrepreneurship is the continuation of innovation. The concept of entrepreneurship in the narrow sense is to start a company, which business form can be a simple trading. The concept in a broad sense refers to the creation of a business, which includes the establishment of a new company based on its own position, entrepreneurship, innovation and development. The focus of innovation and entrepreneurship education should focus on “innovation” rather than entrepreneurship[6]. The source of education is innovation, while entrepreneurship is the ultimate, innovative, willing, and project-oriented with student’s entrepreneurship behavior.

Innovative entrepreneurship education in most colleges and universities is an innovation which only talks about entrepreneurship rather than innovation. Schools should focus on innovation and entrepreneurship education on innovation. Innovation is the foundation and precondition of entrepreneurship[7]. Only when innovation reaches a certain level and it is possible to breed broad-based entrepreneurship.

B. Innovation and entrepreneurship education is out of touch with professional education

Many colleges and universities are often separated from the profession to engage in innovation and entrepreneurship education. In innovation and entrepreneurship education, the construction of disciplines is the foundation. Any innovation and entrepreneurship education that is separated from the disciplines is formalism. Innovative and entrepreneurial education in colleges and universities must focus on the overall situation and the future, and think and plan in the perspective of long-term development. Integrate innovation and entrepreneurship education into the whole process of talent cultivation and discipline construction through setting up a reasonable talent training program and curriculum system, taking morality nurturing and research learning as the core, innovating teaching methods and models, and building innovative and entrepreneurial education services. The platform builds an educational model in which professional education and innovation and entrepreneurship education are intermingled[8].

IV. Training Path for Innovation and Entrepreneurship in Local Colleges and Universities

A. *In-depth integration of innovation and entrepreneurship education and talent training programs*

The talent training program is a fundamental guidance document for implementing the talent training work. Formulating the application-oriented undergraduate talents training program, local colleges and universities should integrate the innovation spirit, entrepreneurial awareness and innovation and entrepreneurship ability, and cultivate the entrepreneurial talent with the ability-oriented, quality-oriented, pioneering and innovative capabilities.

Qingdao Huanghai University strengthens the whole process of innovation and entrepreneurship education such as entrance education, professional education, curriculum design and graduation design. Based on the regional advantages and school orientation and service orientation requirements, the school and industry enterprises jointly formulate talent training programs and jointly develop curriculum teaching resources. At the same time, it has also established a new mechanism for interdisciplinary and interdisciplinary training of innovative and entrepreneurial talents, and promoted the transformation of single-disciplinary talents in disciplines to multidisciplinary integration.

B. *Constructing an Innovative Entrepreneurship Education Curriculum System Based on Applied Talents Cultivation*

Local colleges and universities should set the professional direction and curriculum system according to the orientation of applied talent training. Take the engineering major of Qingdao Huanghai University Intelligent Manufacturing Institute as an example.

First, strengthen the proportion of practice links in teaching. Practice teaching credits accounted for 40% of the total credits, which is 10% higher than the 30% required by the Ministry of Education. Secondly, the professional education and innovation and entrepreneurship education are organically integrated, and the innovative and entrepreneurial education resources of professional practice courses are deeply explored, and a professional curriculum of innovation and entrepreneurship education is established step by step, organically connected and scientific and reasonable. Qingdao Huanghai University has built a hierarchical innovation practice curriculum system, which has changed the previous simple experiment mode. Teachers set up a project with certain engineering practicality to realize the training of students' skills, which not only optimizes the teaching content of the course, but also enhances the effect of classroom teaching, while at the same time it cultivates students' practical ability, creativity and innovation. Thirdly, it has also strengthened the professional construction with the enterprise to jointly create a school-enterprise curriculum resource system. In the professional direction of mechanical design, manufacturing and automation, the industrial robot professional has jointly developed with Qingdao Haiyi Automation Technology Co., Ltd. Using the teaching resources of the course, schools invited the instructor to teach the students who will enter the Haiyi company for concentrated training in the fourth semester, in order to strengthen the engineering design ability, engineering innovation ability and engineering practice ability, so that the organic combination of theoretical education and practical teaching can be really realized.

C. *Promoting innovation and entrepreneurship education with the science and technology innovation competition as the carrier*

In order to improve students' practical ability and innovative ability, intelligent manufacturing Institute of Qingdao Huanghai University has established four associations, such as electronic innovation association, electromechanical innovation association, 3D digital design association and digital manufacturing association. Through this professional association platform, students actively participate in the teacher's research projects and participate in the science and technology innovation competition. In the past three years, under the guidance of professional teachers, students have participated in the national energy-saving and emission reduction design competition, the challenge cup extracurricular academic and scientific works competition, the national three-dimensional digital design competition, the national electronic design competition and the Shandong mechanical and electrical product innovation design competition. In the competition, more than 500 provincial and above awards were awarded. Through competition activities, students have learned the transformation and application of theoretical knowledge, improved practical hands-on ability, innovation ability and teamwork ability. It lays a solid foundation for students to be professional, innovative and entrepreneurial.

D. *Building a platform for college students' business incubation base*

Local colleges pay attention to the level and gradient in the process of education and teaching, organically integrate the theoretical teaching in the classroom with the practical teaching outside the classroom, provide practical platforms and entrepreneurial projects for students, carry out relevant practical activities, and stimulate students' application capabilities and innovation potential.

Since 2009, Qingdao Huanghai University has established a university student entrepreneurship incubator base, which has incubated more than 3,000 entrepreneurial talents. Song Peiyu, an e-information engineering student, joined the Electronic Innovation Association during his school days, participated in scientific and technological innovation under the guidance of teachers, and won provincial and above awards many times. During his senior year, he entered the school's entrepreneurial incubator base and founded Qingdao Dongfang Huicheng Electronic Technology Co., Ltd., transforming the results of the science and technology competition into products and successfully entering the market. In the past two years of business, sales have exceeded one million. The entrepreneurial incubation base for college students promotes the transformation of scientific and technological innovation achievements, promotes the development of social economy, and realizes the dual effects of incubating companies, products and cultivating innovative and entrepreneurial talents.

E. Promoting school-enterprise collaborative education

School-enterprise collaborative education is a combination of high-quality practical resources of the school and highlights the innovative practical functions of educating people. Through professional co-construction, school-enterprise cooperation classes, professional practice and other forms, students will be trained in the production practice of the enterprise and immersed in the corporate environment, feel the corporate culture, obtain real practical training opportunities, enhance application knowledge and solve practical problems. Inspire students' innovative thinking, innovative consciousness and innovative spirit.

In the setting up of the talent training program for the mechanical design, manufacturing and automation of Qingdao Huanghai University, the school-enterprise synergy has now been taught in every academic year, including corporate cognition, metalworking, skills training, and graduation internships. In terms of professional construction, the mechanism professional cooperated with Qingdao Haiyi Automation Technology Co., Ltd. build a special class of industrial robot, which fully integrated the work elements of the enterprise into the talent cultivation. In addition to teaching the students, the enterprise masters Students can also enjoy the company's customized practice exercises every semester. The college and the enterprise signed a school-enterprise cooperation class such as Qingdao Hisense electric class, Qingdao Zhidong precision class and “Futian Lovol Heavy work class”. The school has delivered a high level of applied talents for the company. The company has recruited a group of outstanding talents, and the school and the company have achieved a win-win situation in cooperation.

F. Strengthening the construction of teachers' innovative and entrepreneurial capabilities

Professional teachers with strong scientific research ability, strong practical ability and innovative and entrepreneurial knowledge are powerful guarantees for innovation and entrepreneurship education. While cultivating students' ability to innovate and innovate, it is necessary to strengthen the cultivation of innovative and entrepreneurial teachers, enrich their professional knowledge, understand the dynamics of industry development, and practice practical application skills in enterprises to improve teaching, research and innovation capabilities.

Qingdao Huanghai University has formulated the double teacher and dual energy teacher training program in recent years. The special fund is used for the construction of double-skilled and dual-energy teachers through the use of skills training, professional training, going out, participating in the company and skills. Identification and other five-step-level dual-teacher training strategies improve the professional skills of teachers to guide students in innovation and entrepreneurship. The school also uses the joint practice of enterprise practice and entrepreneurship practice alliances and student organizations such as the entrepreneur association to introduction and outreach the construction of high-performance training think tanks.

G. Establishing a sound innovation and entrepreneurship education guarantee mechanism

In order to achieve substantive results in innovative entrepreneurship education, schools must establish sound policy support mechanisms. First of all, the school needs to set up a special innovation and entrepreneurship education management institution, which is supported by functional departments such as teaching, student work, employment, scientific research, and finance to jointly guarantee the development of innovation and entrepreneurship education. Second, the school must improve the rules and regulations in training and teaching. Policy support is given in reform, project construction, and incentive measures to promote the successful development of entrepreneurship education, and to stimulate the enthusiasm of teachers and students for innovation and entrepreneurship.

Qingdao Huanghai University has further improved the institutions and departments of innovation and entrepreneurship education, matched and strengthened personnel, defined the duties and responsibilities, and provided support and guarantee for the normal development of the work. At the same time, the relevant rules and regulations have been established, the reward and punishment mechanism have been formulated, and the supporting system have been completed. The innovation and entrepreneurship education have been incorporated into the entire evaluation system of the school, and documents such as measures for organization and management of discipline competition of Qingdao Huanghai University", measures for credit evaluation of innovation and entrepreneurship of Qingdao Huanghai University, detailed rules for the implementation of scientific and technological innovation activities for college students of Qingdao Huanghai University, have been promulgated. It has stimulated the initiative and enthusiasm of all departments, teachers and all students to participate in innovation and entrepreneurship education and practice, and achieved the cooperation of the whole school.

V. CONCLUSION

Qingdao Huanghai University integrates innovation and entrepreneurship education into the whole process of talent cultivation. It has unique characteristics in terms of teaching curriculum, teacher equipment and practical education. It has been recognized as the youth employment and entrepreneurship training base of the communist youth league Shandong provincial committee, the Qingdao university graduates business incubation base, the Qingdao science and technology enterprise incubator, the national private university innovation and entrepreneurship education culture construction award in 2016, and the national college student KAB entrepreneurship in 2017. Its mature model can provide reference for the cultivation of applied professionals in other local universities.

Innovation and entrepreneurship education is a systematic education project, which runs through the teaching, management, service, scientific research and employment of applied talents. Local colleges and universities should carefully design the path and mode of application-oriented professional

innovation and entrepreneurship training according to their own reality, and realize transformation and development [9].

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