

Practical Exploration of Innovation and Entrepreneurship Education in Chinese Independent Colleges

—Taking City College of WUST for Example

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Abstract—Colleges and universities shoulder the mission of cultivating innovative and entrepreneurial talents. It is the call and opportunity of age to do a good job in innovation and entrepreneurship education and cultivate innovative talents who attach great importance to practice, which also reflects the national will of incorporating the innovative spirit cultivation and entrepreneurial quality education into the national advanced education system. The paper introduces the experience of innovation and entrepreneurship education in college of WUST. In order to cultivate technical talents with innovative spirit, awareness and ability, it has carried out innovation and entrepreneurship education practice in all aspects, including major setting, curriculum set-up, practice teaching and building of the ranks of teachers etc. and has achieved periodic results.

Keywords—Innovation and entrepreneurship education; Entrepreneurial ability; Educational practice; Talent cultivation

I. INTRODUCTION

Encouraging mass entrepreneurship and innovation is an inevitable choice to foster new drives of economic and social development and an effective way to stimulate the innovation potentials and entrepreneurial activities in the whole society. In recent years, City College of WUST has conscientiously implemented the party and the state's will to strengthen innovation and entrepreneurship education in universities, cultivated students' innovative awareness, vigorously promoted the innovation and entrepreneurship practice and strived to cultivate more innovative and entrepreneurial talents.

II. THE STATUS QUO AND PROBLEMS OF INNOVATION AND ENTREPRENEURSHIP EDUCATION IN CHINESE UNIVERSITIES

Innovation and entrepreneurship education is the important trend of the development of global higher education, is an important means of major developed countries to enhance international competitiveness and is an important way for China to change from a large higher education country towards a strong one. Both theoretical and practical circle have paid much attention to innovation and entrepreneurship education.

Innovation and entrepreneurship education began earlier abroad than at home, which has relatively ripe theories and has

already been carried out in colleges [1]. The United States is the first country to carry out innovation and entrepreneurship education in colleges. Babson College is the pioneer, emphasizing the cultivation of "the entrepreneurial genetic code" of college students to create "the most revolutionary entrepreneurial generation". The French government has introduced a policy since 2006-entrepreneurs can apply for start-up subsidy if their personal income is lower than the minimum wage. Therefore, many entrepreneurial college students can apply for a start-up subsidy. In the UK, innovation and entrepreneurship education is not a quick and effective way to improve students' innovative and entrepreneurial ability and performance, but to cultivate students' innovative spirit and consciousness.

At home, university innovation and entrepreneurship education is in the start-up period. In 2010, the Ministry of Education issued the first government file related to innovation and entrepreneurship education. It is suggestions on how to vigorously promote innovation and entrepreneurship in institutions of higher learning, education and college students' independent entrepreneurial work; Then in 2012, basic requirements of education teaching in ordinary undergraduate school was issued; In 2014, the State Council, the Ministry of Education, the Ministry of Human Resources and Social Security together with other 6 departments issued the leading plan about college student entrepreneurship; In 2015, [2]the State Council issued suggestions on deepening the implementation of education reform of innovation and entrepreneurship in institutions of higher learning. All these strategies are aimed to strengthen innovation and entrepreneurship education in colleges. However, there are many problems in the educational practices. Firstly, the thoughts are not deep enough. Some university education managers have a one-sided view that innovation and entrepreneurship education is not the mainstream of education and therefore is short of effective input. Secondly, the policy hasn't been well implemented. Innovation and entrepreneurship education can't really integrate into the whole education teaching system of the school. And it is difficult to form an innovative and entrepreneurial education mode integrating professional talent cultivation and comprehensive

teaching reform. In addition, government universities and society have not formed a synergy around innovation and entrepreneurship education. Thirdly, the work is not well executed. Most teachers think that innovation and entrepreneurship education is a job other than the job, and thus education is not integrated with innovation and entrepreneurship education. Fourthly, hardware investment is not enough.

Compared with universities in developed countries [3], China's innovation and entrepreneurship training base and incubation base resources are very scarce. Lastly, teacher welfare is not good enough. Due to the application of technical university, the income of the university is mainly derived from the tuition of students, and the welfare of the teachers can't keep up with the pace of the public academic research university. And it is difficult to establish a high-level teaching staff to provide strong talent support for innovation and entrepreneurship education.

III. PRACTICAL EXPLORATION OF INNOVATION AND ENTREPRENEURSHIP EDUCATION IN CITY COLLEGE OF WUST

Innovation is key to national progress and entrepreneurship is the way to realize dreams. Innovation can't be taught; the key is that innovation teaches students to innovate and start their own businesses. In recent years, City College of WUST has made innovation and entrepreneurship education run through the whole process of personnel training and made great efforts to promote the college students' innovation and entrepreneurship education work in a comprehensive and in-depth manner.

A. *Integrating innovation and entrepreneurship education into professional education, and cultivating innovative entrepreneurial cognitive ability and basic skills*

To realize the education goal of innovation and entrepreneurship, university education managers should realize that innovation and entrepreneurship education is as important as professional education [3]. We should form an innovation and entrepreneurship education mode integrating professional talent cultivation and comprehensive teaching reform. However, part of the application of technology universities in China does not include the cultivation of innovative entrepreneurial diversification talents into the talent training system of education. According to the requirements of local demand and college professional structure optimization, City College of WUST has deepened the connotation of the professional construction, adjusted the direction and orientation of talent cultivation, integrated and optimized teaching content and promoted coordination between professional talent training innovative undertaking. According to the new trend of the development of industry, we will carry out the training mode of personnel training, such as Chinese-foreign cooperatively-run schools and universities, and thus promote the cooperation between innovation and entrepreneurship talent cultivation and economic and social development. For students of different majors with entrepreneurial intention, we have set up the second class science and technology competition tutorial class of innovation and entrepreneurship experiment class, and actively explore the new mechanism of collaborative education.

With the guidance of collaborative innovation, education is combined with social practice to improve students' ability of market environment analysis and industry development prediction, and cultivate students' cognitive ability and basic skills of innovation and entrepreneurship.

B. *Promoting innovation and entrepreneurship education curriculum, and designing the education system as a whole*

The development of education in colleges should break through the bottleneck. Innovation can't be taught; the key is that innovation teaches students to innovate and start their own businesses. In order to promote the organic integration of education and innovation and entrepreneurship education, the city college of WUST is required to establish education targets based on talent training and innovation.

Firstly, we have carried out the adjustment course setting work in all majors of the college, and incorporated innovative entrepreneurship courses into the talent training program. We have set up compulsory courses such as "college students' innovation and entrepreneurship skills training", "college students' foundation for entrepreneurship" and "university student entrepreneurship education". Besides, we have opened "innovative thinking training", "innovative invention", "innovation education training", "entrepreneurship and practice", "employment guidance" and "modern social and etiquette" and other general courses.

Secondly, we have established the "the way of judging innovation entrepreneurship education credits", which can be divided into four categories, respectively is "innovation practice credit", "entrepreneurial practice credits", "skill practice credits" and "quality extension credits". By establishing professional innovation course credit and innovation and entrepreneurship practice in the talent training program, the credit accumulation and transformation system should be expanded. Students will be awarded credits for innovation and entrepreneurship projects approved or students will participate in the science and technology competition, so as to promote students' active participation in innovation and entrepreneurship practice.

Thirdly, the integration of "Internet plus" promotes innovation and entrepreneurship education curriculum system rationalization [4]. Because "Internet Plus" can provide more timely and richer courses education resources, the college forms the teaching course system integrating the online open courses education and offline classroom teaching. Students use the college's "curriculum resources platform" for online learning. With the problem as the orientation, the knowledge of the system is turned into zero, and the specific problems are changed into the whole. The offline face-to-face courses are oriented to solve the problem of students' online learning.

C. *Building a practical teaching mode based on the cultivation of innovation and entrepreneurship ability and striving to innovate and launch the education effectively*

Due to the single income source of the applied technology universities, the lack of funds in running schools leads to the shortage of innovation and entrepreneurship training base and the resource of incubation base. The city college of WUST takes innovation and entrepreneurship as an important extension of innovation and entrepreneurship education.

Firstly, the college strengthens the reform and enrichment of practical teaching content and pays attention to practical teaching. At present, each major of the college has more than three off-campus practice bases, and more than 160 practical training bases have been built. Economic and management specialty group of university-enterprise cooperation actively, go the way of integration education, and the east lake high-tech development zone enterprises and logistics company of wisco, wuhan's psa enterprises established long-term stable off-campus practice, practice base. Through the practical training of enterprise project, the practical operation ability and application technical ability of students are greatly improved.

In addition, with the application of the computer technology development, city planning, land and resources information management, the wisdom of city construction, application of uav measurement and image processing is the lack of professional and technical personnel. In order to develop a good talent for the development of regional economic and social development, it is necessary to develop and develop independently, the college has opened major of computer application technology (digital city technology), and cooperates with the "aerospace vision technology company" of east lake high-tech development zone so as to train professional talents in aviation surveying and image processing. At present, the graduates of this major are in short supply, providing a strong support for the digital construction and development of local government land resources in hubei province.

D. *Strengthening the construction of a new type of teaching staff to match the training of innovative and entrepreneurial talents, and promoting education guidance for innovation and entrepreneurship*

Teachers are engineers of the human soul. The ultimate executor of any education is a teacher, and only strict quality control can provide strong talent support for innovation and entrepreneurship education. One is actively hiring senior engineering and technical personnel with high professional quality from all walks of life. Taking the department of urban construction, the department of economics and management as well as the department of medicine for example, most of the professional and part-time teachers are senior engineers and experts who are retired from well-known enterprises or hospitals in the province. The second is to implement the "full coverage project" of professional teachers. Teachers training, teachers' visiting, teachers' training and other training courses are adopted to train innovative entrepreneurship instructors, making teachers have strong professional application ability, practical teaching ability and innovation and entrepreneurship guidance ability. The third is to hire successful entrepreneurs to

serve as teachers in the hospital and guide the teaching of innovation and entrepreneurship courses. Through these measures, teachers should be strengthened to encourage teachers to improve their practical teaching ability and innovation and entrepreneurship guidance.

IV. INITIAL RESULTS ACHIEVED BY CITY COLLEGE OF WUST IN INNOVATION AND ENTREPRENEURSHIP EDUCATION REFORM

In recent years, the college has achieved remarkable results in innovation and entrepreneurship education, and the student team has achieved outstanding results in all kinds of entrepreneurship competitions. For example, in 2012 and 2017, the college won the "challenge cup" national college student entrepreneurship competition and extracurricular academic science and technology works competition (hubei division) "provincial cup winners"; From 2013 to 2016, we have won "provincial excellent organization award" in the "challenge cup" national college student entrepreneurship competition and extracurricular academic science and technology works competition; During the 12th five-year plan period, middle school students of the national university "challenge cup" won more than 10 national awards and more than 60 provincial awards; In November 2017, in the 15th "challenge cup" national college student extracurricular academic science and technology works competition final examination final, "study on the ecological effect compensation mechanism of qinghai lake basin" has won the third prize in the country. Over the years, the number of winners in the "challenge cup" competition of the national college students has been the first in hubei provincial private colleges and independent colleges. Such outstanding achievements have attracted the attention of many other universities.

As an avid inventor, Aidi led his team won many national and provincial awards through "pipeline cleaning robot". Then he set up "corel innovative technology co., LTD.", using 3D printing technology to participate in the production pipeline cleaning robot, and has merged into the school's business incubator.

Due to the improvement of innovation and entrepreneurship, many graduates go out of school to join the army of "mass entrepreneurship and innovation". For example, Chen cheng, a student who graduated in 2008, founded Zhida Construction Engineering Labor Subcontracting co., ltd. in shenzhen, with a market value of 200 million yuan; After graduating in 2009, he founded Daohai Science and Technology co., ltd. in wuhan, with a market value of 30 million yuan; Chen xiaojie, who graduated in 2010, founded a catering company in fujian province with a market value of 100 million yuan; Jiang bin, a student who graduated in 2011, founded Sixu Technology co., ltd. in hangzhou, with a market value of 10 million yuan; Tan Haoxiang, a graduate student in 2013, established his own culture communication co., ltd. in wuhan, with a market value of 1 million yuan. Quan Xiaowen, a graduate student in 2015, founded Jiangcheng Cultural media co., ltd. in shenzhen, with a market value of 1 million yuan. He qiuhao, a graduate student in 2017, founded jade carving company in jiangxi province with a market value of 2 million yuan and so on. In addition, the business management professional entrepreneurship team

has entered the provincial college students' entrepreneurship base. The "3D printing technology" of mechanical manufacturing has been established.

V. CONCLUSION

The innovation and entrepreneurship education of City College of WUST has achieved certain achievements, but the innovation and entrepreneurship of private colleges and universities is always on the way. China's private universities need to think further the following questions: [5]how to learn from the successful experience of domestic and foreign universities in this field; how to enhance students' ability to innovate and entrepreneurship; how to improve the proportion of innovation and entrepreneurship and promote the incubation of innovation and entrepreneurship programs to ensure the survival rate of innovation and entrepreneurship; how to measure the contribution of innovation and entrepreneurship to local economy's service ability and employment, and improve the quality of talents training and competitiveness; how to

formulate effective and feasible innovation and entrepreneurship education policy to form a vivid picture of mass entrepreneurship and innovation,

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