

Research on Innovative and Entrepreneurial Talents Cultivation Mode for Undergraduates

A Case Study at Jinan University*

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Abstract—Catering to the social changes in China and the development of globalization, innovation and entrepreneurship education, a symbol of the conceptual transformation of higher education in the new era, is the imperative way out for the reform and development of higher education. And the personalized innovative and entrepreneurial talents cultivation mode refers to a brand-new paradigm of higher education that aims at developing quality innovative and entrepreneurial talents based on personalized education. Its value lies not only in imparting knowledge, but also in teaching students how to think, challenging their understandings of problems and pushing them to a depth.

Keywords—*innovation and entrepreneurship education; personalized education; university-enterprise cooperation; talents cultivation*

I. INTRODUCTION

In May 2015, the Suggestions on the Implementation of Deepening the Reform of Innovation and Entrepreneurship Education in Institutions of Higher Learning (Issued by the General Office of the State Council [2015] No.36) notified that “deepening the reform of innovation and entrepreneurship education in institutions of higher education is a significant measure to promote the comprehensive reform of higher education and improve start-ups and employments of college graduates.”¹ Developing innovative and entrepreneurial undergraduates must adapt to the social development, conform to the trend of the times and keep students’ learning and development as its core. With its goal to serve students’ need in innovation and entrepreneurship

and based on their own willingness, it should also give priority to cultivate their spirits and abilities in these two aspects by means of innovating teaching methods to improve the quality of innovative and entrepreneurial talents cultivation.

II. CONTENTS OF INNOVATIVE AND ENTREPRENEURIAL TALENTS TRAINING

Innovative and entrepreneurial talents training mode for college students includes two themes: innovation and entrepreneurship, which enriched the concepts, goals and requirements of higher education. Talents cultivation is the priority and primary function of higher education. At present, the talents cultivation in terms of innovation and entrepreneurship in China's colleges and universities primarily touches upon educational practices conducted in line with the professional characteristics, or practices combined with the regional economy, which pave the way for exploring talents training modes. There are mainly three modes: the mode centered on entrepreneurial courses, student competitions and activities, and the construction of a pioneer park or a science and technology park.²

The National Outline for Medium and Long-term Talents Development Plan (2010-2020) emphasized the significance of cultivating innovative scientific and technological talents and launched the Innovative Talents Promotion Plan. Innovative talents relate to people who have relatively strong creative consciousnesses, spirits and abilities, and who make contributions to the social development with their creative works. They are the primary resources that propel the national innovation. Focusing on cultivating innovative talents and following their growth law, the entrepreneurial education in colleges and universities, which is mainly evaluated by the quality of innovative talents cultivation,

*The paper reported here is sponsored by Guangdong Education Research Project (Spirit of the 19th National Congress of the CPC), Project name: “Four Confidences” and Research on Innovative and Entrepreneurial Talents, Project Grant No.: 2018JKSD82.

The research is also phased result by the 20th Teaching Reform and Research Project at Jinan University (non-Mainland Students), Project name: Construction and Application on the Innovative and Entrepreneurial Training Platform for non-Mainland Students, Project Grant No.: JG2018061.

¹ The Chinese Central Government's Official Web Portal: http://www.gov.cn/zhengce/content/2015-05/13/content_9740.htm

² Hu, Tie, & Rongxiang, Li. Research of Innovative and Entrepreneurial Talents Cultivation Mode Based on Practical University-Enterprise Cooperation[J]. China Adult Education, 2013(11):69

tends to incorporate the entrepreneurship into the process of talents cultivation.³

Education is a personalized process, and the personalized education boasts an effective way of developing students' creativeness. To implement such education, one should recognize and respect the characters of educatees and provide conditions to improve their characters.⁴ The personalized innovative and entrepreneurial talents training mode refers to a brand-new paradigm of higher education that aims at developing quality innovative and entrepreneurial talents based on personalized education. And its value lies not only in imparting knowledge, but also in teaching students how to think, challenging their understanding of problems and advancing them to a depth.

III. STATUS QUO OF INNOVATIVE AND ENTREPRENEURIAL TALENTS TRAINING AMONG UNDERGRADUATES

The Ministry of Education and the Ministry of Science and Technology jointly released the Monitoring Report on Innovative Abilities of China's Institutions of Higher Learning (hereinafter refers to the Report) on 9th October, 2016, which first conducted an overall monitoring and assessment on creativeness of about 2,000 universities and colleges across the country. The report, selecting 78 indicators in terms of innovations, innovative talents cultivation, research and development activities, the commercialization of research findings and industry-university-research cooperation, exerted a supervision on the overall status and basic features of innovation capability in universities based on the statistical data of universities and colleges nationwide from 2005 to 2014, as well as the data from the Survey of Innovations in Colleges and Universities Nationwide in 2015. The Report indicates that under the guidance and encouragement of national policies, the universities are transforming from developing extensively to internally, with their comprehensive strength in innovation, science and technology surging. As of 2015, the full-time equivalent of scientific and technological R&D personnel in universities reached 355,000 person-years, up 46.7% over 2006, topping the world. And the expense for R&D of universities and colleges keeps increasing, amounting to 99.86 billion yuan in 2015, 3.6 times that of 2006. And the money is used in following constructions: There are 131 state key laboratories, which take up more than 60% of the country's total. What's more, there are 100 national engineering and technology research centers, 30 national engineering research centers, 57 national engineering laboratories, 38 state collaborative innovation centers, 395 bases of discipline innovations and talent introductions, 618 key laboratories of the Ministry of Education, 410 engineering centers of the Ministry of Education and 48 internationally cooperative laboratories of the Ministry of

Education. Besides, there are 12 projects of state key scientific and technological infrastructure construction led by universities.⁵

The Report on Employments of College Graduates in China jointly released by MyCOS Research Institute and Chinese Academy of Social Sciences in 2017 shows that in recent five years, the proportion of graduates who start up business as soon as graduated rose from 1.6% in 2011 to 3% in 2017. To be specific, the total number of recent graduates in 2017 reached 7,950,000, and over 200,000 of them created business in that year. Moreover, more and more young people are integrating their passionate dreams into the great Chinese Dream and becoming the principal force promoting innovations and increasing entrepreneurship. A case to demonstrate this phenomenon is that in the China College Students "Internet plus" Innovation and Entrepreneurship Competitions which were held consecutively in three years, the number of registered projects in each year is three times strong more than that of the previous year, and the number of participants is twice strong more than that of the previous. There were over 1.5 million students from 2,241 colleges and universities participating in the third competition in 2017, with 370,000 group projects registered.⁶

Above all, the innovative and entrepreneurial talents training in China's institutions of higher learning was started at a comparatively late date. Therefore, the institutions are still exploring the training mode. At present, they just regard the innovation and entrepreneurship education as the subordinate content for higher education and do not integrate the cultivation of innovative consciousnesses and entrepreneurial abilities with specialized education, in short of a personalized innovative and entrepreneurial talents training system.

IV. ESTABLISHMENT OF PERSONALIZED INNOVATIVE AND ENTREPRENEURIAL TALENTS TRAINING MODE FOR UNDERGRADUATES

The Suggestions on the Implementation of Deepening the Reform of Innovation and Entrepreneurship Education in Institutions of Higher Learning (Issued by the General Office of the State Council [2015] No.36) issued in May 2015 shows that "some regions and universities underestimated the significance of innovation and entrepreneurship education, leaving a series of problems: outdated innovative and entrepreneurial education ideas, being separated from specialized education and practices, weak awareness and abilities of the teachers in implementing the education, inflexible, ineffective and less-targeted teaching methods, insufficient practical platforms, supports and guidance, defective innovative and entrepreneurial education systems."⁷

³ The Chinese Central Government's Official Web Portal: http://www.gov.cn/jrzq/2010-06/06/content_1621777.htm

⁴ Jiang, H., Huiguang, Yin, & Xu Xiaochang. Research on Personalized Innovative and Entrepreneurial Talents Cultivation Mode in Institutions of Higher Learning [J]. Journal of National Academy of Education Administration, 2015(3):27.

⁵ People's Daily: <http://edu.people.com.cn/n1/2017/10/10/c1053-29577913.html>

⁶ China Youth Daily: <http://news.sina.com.cn/o/2017-09-14/doc-ifykynia6969930.shtml>

⁷ The Chinese Central Government's Official Web Portal: http://www.gov.cn/zhengce/content/2015-05/13/content_9740.htm

Personalized innovative and entrepreneurial talents training should be determined to cultivating creative talents and be in accordance with undergraduates' will and dream at the same time. On the basis of integrating and utilizing the quality education resources of universities and colleges, the training, combining innovation and entrepreneurship education with the courses of cultivating undergraduates, should develop undergraduates' innovative and entrepreneurial awareness, abilities and spirits, and establish an appropriate, applicable and distinctive training mode so as to produce talents for the society.

A. *Setting up the Ideas of Personalized Innovative and Entrepreneurial Talents Training*

The idea of personalized innovative and entrepreneurial talents training will be built through the individualized education. It is a thinking paradigm of higher education that based on the development of students' personality and potential and is intended for inspiring their creative awareness and thinking and cultivating their entrepreneurial spirits and abilities.⁸

The establishment of the personalized innovation and entrepreneurial talent training idea should be flexible and updated, namely, respecting students' differences in traits, emphasizing the cultivation of student's personality and abilities, activating and developing students' individualities, potentials and advantages through teaching them in accordance with their aptitude. The focus of personalized innovation and entrepreneurship training is not "teaching" but "guiding", focusing on guiding students in thinking about innovation and entrepreneurship and creating a platform for them to practice their thoughts. That is to say, students will conduct analyses, researches and free discussion under the guidance of both intramural and extramural supervisors, during which their creative thinking will be excavated and their personalities and specialties will be given full play to. While the supervisors, by guiding students to self-study and liberal discussion, will maximize their potentials, cultivate their entrepreneurial ideas and enhance their practical abilities. During the discussion, supervisors and students can learn from each other, explore and understand problems according to their educational background respectively and from different perspectives. They express their thoughts with no fear of making mistakes, helping them to develop rational thinking and critical minds.

All in all, the innovative and entrepreneurial talents training should persist in "personalized education" and make the educational idea of "students first" rooted in the ground.

B. *Implementing Personalized Mentorship of Innovation and Entrepreneurship*

Originating from the University of Oxford, the mentorship for undergraduates, a mixture of the American credit system and the British tutorial system and effective

mode of talents training and management proved by practices, has long been praised as "a dazzling gem set in the crown of Oxford".⁹

In terms of the present students training mode of higher education in China, generally, the mentorship has been widely regarded as a training mode to cultivate postgraduates and doctoral candidates. Part of prestigious universities adopted it to cultivate undergraduates as well, but in a narrow scope.

The personalized mentorship of innovation and entrepreneurship gives individual attentions to students and respects them. It emphasizes the supervisors' tutorials to students respecting the learning, scientific research and innovation. It focuses on creating a liberal academic atmosphere based on the equal relationship between teachers and students in order to train the latter to think rationally and critically.

The Business School of Jinan University (JNU) appointed about 150 tutors in innovation and entrepreneurship from departments of local governments, enterprises and public institutions, who are experienced in practice and can tutor students in learning, scientific research and create businesses. With respect to the learning, the tutor will guide the student in selecting professional development directions according to their different characteristics and assist them in planning personalized learning schemes so as to achieve the training goal; in terms of the scientific research, the tutor will help them conduct researches and encourage them to take part in innovation and entrepreneurship competitions; in regard to the entrepreneurship, the tutor share their experience in starting a business, offer opportunities of internships, consciously develop entrepreneurial and practical abilities of students and pointedly guide students to put their knowledge into practice, precisely, practice in making innovations and entrepreneurship.

Simultaneously, the JNU established the "Innovation, Entrepreneurship and Career Planning Workroom", which consists of specialized supervisors and counselors of schools, fulfilling the Innovation and collaborative education system to advance the organically integration of the students' professional learning, innovation, entrepreneurship and social practice, and to nurture passionate entrepreneurs.

C. *Constructing Personalized Curriculum System about Innovation and Entrepreneurship Education*

Although the innovation and entrepreneurship education curriculum has been included into the teaching plans of some colleges and universities, it is still searching for development. Its relative curricula, lacking of specificity, all depend on the entrepreneurial guidance of the "extracurricular learning", neglecting professional advantages and characteristics of students from different majors. Under this situation, the students suffered poor entrepreneurial abilities and a low success rate of starting a business. The main reason for these

⁸ Jiang, H., Huiguang, Yin, & Xu Xiaochang. Research on Personalized Innovative and Entrepreneurial Talents cultivation Mode in Institutions of Higher Learning [J], Journal of National Academy of Education Administration, 2015(3):27.

⁹ Palfreyman, D. The Oxford Tutorial 'Thanks, You Taught Me How to Think' [M]. Beijing: Perking University Press, 2011(1):32.

lies in that there are no professional and expertized entrepreneurial teaching teams that can give full play to the "advantages in clusters."¹⁰

If entrepreneurial awareness and thinking cannot be integrated into professional courses and provide more effective guidance for professional teaching, then teachers in various professional courses will therefore lack of entrepreneurial spirits. Entrepreneurial spirits should be presented in some professional courses, and it is necessary to strengthen the specificity and vividness of the innovation and entrepreneurship education so as to improve the effectiveness of the curriculum. To design the courses of innovation and entrepreneurship education, considerations on multiple disciplines are needed to be paid, for that the courses should not only be applicable to all students, but provide personalized training for students of varied majors, offering characteristic courses to each major. In this case, during the process of guiding students to study theories, practice and make innovation, teachers should make in-depth exploration for the innovative traits in professional knowledge and practices of disciplines to inspire students' interests in creation, intensify their innovative awareness and nurture their senses of values of innovation and entrepreneurship imperceptibly.

The International Business School of JNU applied the program of "Supervisors Entering Lectures", where experienced and professional extramural supervisors are invited to classrooms teaching students together with intramural tutors, connecting the theoretical knowledge closely with social practices to improve students in both sides. Elective courses led by extramural supervisors include Introducing Business Management and Innovation, Career Planning for Undergraduates and Business Management Practice. In September 2017, the school, together with the Dalian Commodity Exchange and Huatai Futures, set up the Futures Trader Training Project, a new cooperation that promoting communications between the university and the enterprise. Connecting the talents cultivation with market demands, it broke the traditional way of teaching and practicing, realizing tailored talents training.

D. Creating Practical Platform for Personalized Innovation and Entrepreneurship

As the space of practicing innovation and entrepreneurship education, the platform stretched a bridge connecting college education and social start-ups. The school should cooperate actively and deeply with enterprises to construct collaborative talents training and innovative platforms, blending social strength into the training of personalized innovative and entrepreneurial talents, which can offset the shortage of practices in our training plan and extract relative resources from both universities and enterprises to a dedicated platform, so that resources of talents training can be accumulated and utilized endlessly

and the quality of innovative and entrepreneurial talents that we trained can be advanced.

The International Business School of JNU is committed to build the "Innovative and Entrepreneurial Leaders Forum", "Innovative and Entrepreneurial Elite Challenge" and "University-enterprise Collaboration: Practical Center of Innovation and Entrepreneurship", among which the biennial Leaders Forum has delivered 30 symposiums discussing hot topics of national reforms, development, significant theories and practices like the upgrading and transformation of enterprises. It is a platform advancing university-enterprise, student-entrepreneur and enterprise-enterprise communications and exchanges, where entrepreneurs' thoughts and management methods can be applied in universities, and students can learn the fresh ideas of the entrepreneur, useful to promote the educating and teaching reforms and quality of talents cultivation in innovation and entrepreneurship. The forum has been held successfully in 2011, 2013, 2015 respectively, with the 2015 one being reported by Zhuhai Special Zone News, Zhuhai Television, sina.com.cn, Jinan University News and Taiwan media, increasingly gaining social influences. The annual "Innovative and Entrepreneurial Elite Challenge", a "Business Elite Challenge" aiming at solving problem in business management or further optimizing business management, has been held successfully for six times, with participants accumulated over 3000 students. It is a kind of experiencing education based on practices and innovations, a work done by universities to fulfill the system, innovate the mode and improve the quality of talents training. And it leveraged its positive role in extending students' knowledge and skills of business management, enhancing their innovative awareness and entrepreneurial abilities, practicing their knowledge in real situation and the like. "The International Business School University-enterprise Collaboration: Practical Center of Innovation and Entrepreneurship" was founded and put into use by the end of 2015. Gathering 30 members both inside and outside the universities, the Center created a "hackerspace" for students, with its goal to foster students' innovative awareness and entrepreneurial capabilities. By setting up university-enterprise collaborative platform in terms of innovation and entrepreneurship, the school gradually generates a running mode that led by school, supported by enterprises and guided by markets, energetically educating undergraduates with innovation and entrepreneurship knowledge. By encouraging public participation in starting businesses and making innovations, within only one semester, these platforms have inspired over ten promising projects created by students, such as, "Qing Shui Yu Zhi" (a matcha-themed chain dessert shop) and "Jia Jian Cheng Chu" (a restaurant).

E. Building Cooperative Information-based Platform between Universities and Enterprises

For better nurturing talents and achieving steadily win-win in university-enterprise cooperation, the information-based platform in construction must give weight to the resources sharing and all-win interests while following the

¹⁰ Jun, F., & Wang, Zhengyou. Research on the triple-mentor system of "awareness + innovation + entrepreneurship" in undergraduate education[J]. Campus English, 2014(8): 9-9.

principles of transparency, co-construction and sharing, practicability and promptness.

The International Business School of JNU especially reserved a section for extramural supervisors of entrepreneurship on its website, which comprises subsections like Achievements of Supervisors, Supervisors Entering Lectures, Entrepreneurial Leaders Forum and Business Elite Challenge, realizing the anticipation of the university-enterprise sharing and all-win. For the school, the information-based platform is good for the talents training, curriculum construction, internship of students, and employment of college graduates; for the enterprise, the platform will provide them with strategies and talents.

The School appoints the extramural supervisors officially and matches them with freshmen classes in the annual opening ceremony. The School also equips both the freshman undergraduate class and postgraduate class with two entrepreneurs or executives respectively as their off-campus head teachers according to the characteristics of majors and educational background of the supervisors. By doing so, the School offers the instruction of extramural supervisors and student-supervisor communication platforms to the freshman on the moment they stepping into campus.

V. CONCLUSION

Although the personalized mode of innovative and entrepreneurial talents training offered a new dimension for the university, it is not complete enough to meet the expected effect. There are quite a lot of problems, for example, excessive students for the intramural supervisors, inexplicit instructions of the extramural supervisors, deficient initiatives of students, insufficient support from the university, unfair evaluations and incentive mechanisms from the supervisors. To get rid of them, universities and colleges should make clear their purposes in the innovative and entrepreneurial talents training in line with their own situations, further improve their ideas, curricula, systems and platforms through practices, strengthen cooperation among the government, society, guild, family and institutions of higher learning, and put more efforts to research on and support talents cultivation, so as to push forward the development of innovation and entrepreneurship education in universities and to establish a comprehensive and effective personalized talents training mode in innovation and entrepreneurship.

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