

Exploration of Innovative and Entrepreneurial Talents Training Mode in Universities

Yongdi Wang*

School of Remote Sensing and Geomatics Engineering, Nanjing University of Information Science and Technology, Nanjing 210044, China

*ydwang2003@163.com

Abstract

In order to cooperate with the implementation of the national strategy of "mass entrepreneurship and innovation", and to address the common problems in the training of innovation and entrepreneurship talents in colleges and universities, Nanjing University of Information Engineering, for example, has actively explored the reform and development of innovation and entrepreneurship talents training model in colleges and universities from the aspects of education philosophy, curriculum system, faculty, platform construction, and guarantee system. Practice shows that the reform of the dual-talent training model of NUIST has achieved remarkable results, which can combine the actual situation and school characteristics, improve the school's innovation and entrepreneurship education system, and enhance students' innovation and entrepreneurship ability. The successful experience of the reform can provide theoretical guidance and decision-making reference for the cultivation of innovation and entrepreneurship talents in universities.

Keywords

Innovation and Entrepreneurship; Talent Cultivation; Curriculum System; Faculty; School-enterprise Cooperation.

1. Introduction

Both the 18th and 19th National Congress of the Communist Party of China (CPC) put forward the innovation strategy, the implementation of which cannot be achieved without the innovation and entrepreneurship education in universities [1,2]. University students are the new force of "mass entrepreneurship and innovation", the success or failure of innovation and entrepreneurship education in colleges and universities is related to whether they can have the innovation and entrepreneurship spirit, innovation and entrepreneurship awareness and innovation and entrepreneurship ability needed for national economic construction. In order to cultivate innovative talents who can adapt to the needs of society and the development of the times, it is necessary to explore the innovation and entrepreneurship training model for universities.

2. Problems Commonly Existing in the Training of Innovative and Entrepreneurial Talents in Colleges and Universities

2.1. Lack of Awareness of Shuangchuang Education, Lack of Awareness and Vague Training Goals

Some universities are backward in concept and lack of understanding of Dual-creation education, and cannot accurately grasp the positioning of talent training, the innovation and entrepreneurship curriculum system is very incomplete, and the cultivation of students'

practical ability is lacking [3] (Rui Guoxing). The students who are trained are not broad-minded enough, not strong in independent thinking, difficult to cultivate innovation consciousness and stimulate innovative thinking, innovation and entrepreneurship education is not successful [4] (Yang Liting). Teachers' awareness of innovation and entrepreneurship is also relatively weak, and the courses they teach rarely incorporate the relevant contents of innovation and entrepreneurship education, and they do not make enough efforts to promote innovation and entrepreneurship education [5] (Yang Xiaohui). Many college students do not have the correct concept that entrepreneurship is simply about making money, and that you can start a business if you have the capital. They do not realize that other conditions, such as knowledge, ability, skills, methods, environment, etc., are necessary for entrepreneurship [3] (Rui Guoxing). Therefore, in the actual education of innovation and entrepreneurship, most of the students lack confidence, unclear direction, poor initiative, and lack of atmosphere [6] (Zhang, Yiqing).

2.2. Insufficient Curriculum System, Monotonous Teaching Contents, and Shortage of Case Studies of Dual-creation

Some universities still take the transfer of theoretical knowledge as the main goal of training talents, and still do not have a deep enough understanding of entrepreneurship education [3] (Rui Guoxing), and fail to integrate the content of innovation and entrepreneurship education in terms of course design, teaching content, teaching methods, and so on, and cannot form a more complete innovation and entrepreneurship curriculum system [6] (Zhang Yiqing). The innovation and entrepreneurship curriculum are fragmented and lacks rigor, and it lacks an independent practice teaching system, and the problems of disconnection between teaching links and production activities are more prominent [7] (Wang Shenglong).

2.3. Lack of High-end Instructors, Insufficient Instructors, and Low Guidance Level of Dual-Creating Enterprises

In terms of the faculty of innovation and entrepreneurship education, some universities cannot meet the demand of double-entrepreneurship education in terms of quantity and quality [3] (Rui Guoxing). In particular, there is a lack of high-end instructors with international vision, the existing teachers do not have enough experience in innovation and entrepreneurship, the introduction of enterprise instructors is not strong enough, and students' innovation and entrepreneurship practical ability cannot be well cultivated [4] (Yang Liting). In addition, the evaluation of teachers emphasizes thesis but not teaching, and mainly refers to scientific research results, which is not conducive to the development of dual education [3] (Rui Guoxing).

2.4. Insufficient School-enterprise Cooperation, Lack of Training Platform for Shuang-chien Training and Insufficient Shuang-chien Practice Projects

Some universities have not yet established innovation and entrepreneurship practice teaching bases, and have not been able to establish in-depth cooperation with enterprises [4] (Yang Liting), the lack of innovation and entrepreneurship practice platform, the number of hardware facilities is small, the quality is not high [8] (Li Yang), it is difficult to meet the needs of innovation and entrepreneurship education. The outstanding problems in the education of innovation and entrepreneurship are the lack of clarity between industry and market demand, and the serious disconnect between talent training and market demand [4] (Yang Liting). In addition, the practical courses offered by colleges and universities focus on whether students have acquired relevant theoretical knowledge and mastered relevant operation skills, but not on the cultivation of students' ability to independently solve practical problems in emerging fields, which cannot cultivate the most essential thing of innovation and entrepreneurship - creativity [7] (Wang Shenglong).

2.5. Insufficient Support, Insufficient Guidance Service and Insufficient Investment of Funds for Dual-creation

At present, the policy support for innovation and entrepreneurship education is not strong enough, the financial investment for innovation and entrepreneurship education is limited, the infrastructure for innovation and entrepreneurship education is incomplete, and the hardware support for innovation and entrepreneurship education cannot keep up. It is difficult to mobilize students to participate in Dual-creation activities, and many college students' innovation and entrepreneurship plans are difficult to put into action, and their enthusiasm for participation is greatly reduced [4] (Yang Litting).

From the above analysis, we can see that there are still many problems in innovation and entrepreneurship education in many universities. Such as educational philosophy, curriculum setting, teachers' strength, School-enterprise cooperation, capital investment, etc., these problems are all prominent and need to be reformed.

3. Reform Strategy and Practice Effectiveness of Nanjing University of Information Engineering's Innovation and Entrepreneurship Training Model

NUIST attaches great importance to innovation and entrepreneurship education for university students, and has made a lot of efforts in curriculum construction, training mechanism, mentor team, platform construction, training system, academic competitions, institutional guarantee, and cultural construction, and has achieved obvious results. The university has been awarded the first batch of model universities for deepening the reform of innovation and entrepreneurship education, national universities with typical experience in graduate employment, and national advanced units for entrepreneurship education research and practice in higher education.

3.1. Clear Understanding, Updated Concepts, and Repositioned Training Objectives

In order to meet the requirement of cultivating innovation and entrepreneurship ability of college students in the national Dual-creation strategy, NUIST has repositioned its talent cultivation goals. In the revision of the 2016 edition of the training program, it follows the national talent cultivation trend, focuses on the cultivation of dual-creative capability, establishes a credit accumulation and transfer system for dual-creative credits, and cultivates both professional skills and entrepreneurial thinking of students. In terms of talent cultivation objectives, the university integrates the needs of enterprises for talents into the cultivation process, and establishes the organic integration of "three abilities" (business ability, academic ability, and international exchange ability) and "three senses of education" (sense of mission, responsibility, and honor) to cultivate students' professional skills and entrepreneurial thinking. The goal of talent cultivation is to explore the whole process of talent cultivation from the perspective of industry needs. Explore the whole process of talent cultivation from the perspective of industry demand, and build an innovation and entrepreneurship education system that is "industry-oriented, full participation, competition-driven". It has formulated the Implementation Plan for Innovation and Entrepreneurship Education Reform of NUIST, which covers curriculum construction, cultivation mechanism, mentor team, platform construction, training system, academic competitions, institutional guarantee, and cultural construction, etc. The implementation plan of the Innovation and Entrepreneurship Education Reform of NUIST has been included in the "Innovation and Entrepreneurship Education" of NUIST. Innovation and Entrepreneurship Education has been listed as the focus and main task in the university's Thirteenth Five-Year Business Development Plan.

3.2. Enriching Contents, Enriching Cases and Optimizing Curriculum System

3.2.1. Improvement of the Curriculum

In terms of curriculum setting, we need to pay attention to the organic integration of Dual-creation education and professional education, and pay attention to the basic, practical, targeted, broad, comprehensive, innovative, and contemporary aspects of Dual-creation courses [8] (Li Yang), and actively construct a comprehensive and three-dimensional Dual-creation education curriculum system. The curriculum system of Nanjing University of Information Engineering mainly focuses on general education, embedded majors, majors, and occupations, and adopts a combination of online and offline methods. More than 40 Dual-creation online courses such as Chaoxing, Excellence, and Huike have been introduced, and the number of students taking these courses has exceeded 10,000. We attach great importance to the construction of school-based SPOC courses, and have built more than 10 open online courses such as "Fundamentals of Innovation and Entrepreneurship" and "Mathematical Modeling for College Students".

3.2.2. Construction of Teaching Materials and Case Libraries

In the process of developing teaching materials, we need to pay attention to the scientific, cutting-edge, innovative and authoritative nature of the materials [8] (Li Yang). It should not only combine the actual situation of Chinese universities, but also properly absorb the advanced theories and cases from the West. In order to broaden students' academic horizons and make it easier for them to understand and grasp the frontier knowledge of science and technology, it is also necessary to incorporate the latest research results into the textbooks [8] (Li Yang). Nanjing University of Information Engineering has published 10 textbooks, including "Entrepreneurship Education Course for College Students" and "Creativity Course". Chen Tao, the editor-in-chief, has sold more than 60,000 copies of the "Entrepreneurship Education Course for University Students". Zhu Xiaodong and Zhou Luohong (senior investor and instructor of off-campus innovation and entrepreneurship) have cooperated to apply for the 2017 provincial higher education key textbook project to construct the "Fundamentals of Innovation and Entrepreneurship for Students" textbook. We have tapped the typical alumni and current students to build a case bank of double-entrepreneurship education, and nearly 100 outstanding students such as Fangda and Ning Ziyao have been selected.

3.3. Adjust the Structure, Improve the Level and Create a Diversified Team of Instructors

To provide a team of teachers with high moral character, excellent professional quality and reasonable structure, we need to formulate attractive talent introduction policies and adopt flexible and diverse methods (such as open recruitment at home and abroad, international cooperation, School-enterprise exchange, etc.) to create an "on-campus full-time tutor and off-campus part-time tutor". NUIST has established a diversified team of teachers and established a mentoring mechanism for both on-campus and off-campus instructors, with innovation instructors on campus and entrepreneurship instructors off-campus, to greatly improve the level of teachers in dual-track education [8] (Li Yang). In terms of building a team of high-end innovation and entrepreneurship instructors, NUIST has introduced one academician, two Jieqing, four Thousand Talents, 17 Jiangsu Distinguished Professors, 14 Jiangsu double-entrepreneurs, and seven double-entrepreneurship teams through ten open recruitments at home and abroad; in terms of establishing a pool of double-entrepreneurship training instructors, NUIST has hired many external double-entrepreneurs with rich practical experience. NUIST has built a pool of more than 200 instructors, among whom more than 75% are from outside the university. In order to improve the guidance level of the instructors, NUIST sends more than 20 instructors to enterprises and institutions every year, and trains a large

number of instructors through various methods (such as entrepreneurship teacher training, high-end lectures, entrepreneurship instructors' salons, online courses, etc.).

3.4. Establishing a Platform, Cultivating Projects, and Deepening University-Enterprise Cooperation

In order to mobilize students' enthusiasm to participate in Dual-creation activities, stimulate their enthusiasm, and improve their innovation and entrepreneurship ability, universities should integrate and optimally allocate hardware resources to create conditions for them to learn and train. Universities should integrate and optimize hardware resources to create conditions for learning and training. For example, they should establish various specialized training and practice bases for innovation and entrepreneurship education, such as innovation experimental center, engineering training center, business incubation base, university science and technology park, and so on. Nanjing University of Information Engineering integrated and optimized on-campus resources to set up a new type of crowdfunding incubation service platform --"Cloud Creation Space", which has been recognized as a provincial-level crowdfunding space by the Science and Technology Department of Jiangsu Province in October 2016 and by the Ministry of Science and Technology in December 2017. National-level Creative Space. It has built a four-level "national-provincial-university-college" venture project platform to ensure that every student can "participate in a project/experience an innovation/enter a competition/experience entrepreneurship". It is the first time that a company has been able to build a platform for the development of a new technology." In addition, human, material and financial resources have been invested to actively build various platforms. Relying on various science and education platforms, national-level creation spaces, provincial university science and technology parks, municipal university students' entrepreneurship parks and other entrepreneurship platforms, we provide students with entrepreneurship venues to meet the needs of students in carrying out innovative activities.

3.5. Increase Investment, Improve Services, and Continue to Strengthen the Security Efforts

In order to smoothly implement the dual-entrepreneurship teaching, universities need to establish a comprehensive and strong support system [7] (Wang Shenglong). Strengthen policy support, increase the capital investment for dual-entrepreneurship, and establish a special fund for university innovation and entrepreneurship [8] (Li Yang). Nanjing University of Information Engineering (NUIE), in cooperation with the Nanjing High-Tech Zone (NHTZ) and other departments such as founding, industry and commerce, taxation, and banking, has optimized the dual-entrepreneurship guidance service system, and set up a green channel in the university's business park to provide the whole process and one-stop entrepreneurship service. Nanjing Zijin (XINDA) Venture Capital Co., Ltd. was established to focus on supporting enterprises founded by students. The annual investment of 3.2 million RMB for practice teaching is used for students' innovation education, practice ability and innovation and entrepreneurship competition. A special fund for the Da Chuang project was established to support students' innovative research and business incubation.

3.6. Effectiveness of Reform

Nanjing University of Information Engineering closely follows the needs of the national industry and connects with the professional industry chain, the professional talent training program has been proved and revised, and the innovation and entrepreneurship education system and guarantee mechanism have been adjusted and optimized. The system and guarantee mechanism of innovation and entrepreneurship education have been adjusted and optimized. A credit accumulation and transfer system has been established, and the flexible academic system is more conducive to the development of dual-track education. In terms of

platform construction, the company insists on four combinations, namely, "online and offline combination" for the curriculum platform, "on-campus and off-campus combination" for the project platform, and "joint and shared combination" for the platform of public creation space. "The mentorship platform is a "combination of training and hiring".

4. Conclusion

It is of great significance to explore the innovation and entrepreneurship talent cultivation model in universities, which can promote the reform of university's Dual-creation education and explore new paths for the cultivation of Dual-creation talents. Firstly, this paper analyzes the main problems of the Dual-creation education in colleges and universities, and then takes NUIST as an example to analyze and discuss the reform of the Dual-creation talent cultivation model. Finally, it summarizes the reform effect and demonstration effect of the Dual-creation education in NUIST. This study can help us recognize the deficiencies of the current talent cultivation model of dual-creative education and provide reference for the talent cultivation of universities.

References

- [1] General Office of the State Council of the People's Republic of China: Implementing Opinions on Deepening Innovation and Entrepreneurship Education Reform in Higher Education Institutions, University Teaching in China, (2015) No.5, p4-6. (In Chinese).
- [2] General Office of the State Council of the People's Republic of China: Opinions of the General Office of the State Council on the Implementation of the Reform of Innovation and Entrepreneurship Education in Higher Education Institutions, Employment of Chinese University Students, (2015) No.18, p4-5. (In Chinese).
- [3] Guoxing Rui: Research on Entrepreneurship Education System in Universities in the Information Age (Ph.D., Shaanxi Normal University, China 2014), p.24.
- [4] Liting Yang: Research on the Cultivating Mode of Tourism Management Innovation and entrepreneurship Talents in Universities Based on College-Enterprise Alliance (MS., Shenyang Normal University, China 2018), p.20.
- [5] Xiaohui Yang: Research on Entrepreneurship Education and Innovative Talent Cultivation in Chinese Universities, China Higher Education Research, (2015) No.1, p39-44. (In Chinese).
- [6] Yiqing Zhang: Research on Innovation Entrepreneurship Education of College Students in the New Period (MS., Xi'an University of Architecture and Technology, China 2017), p.27.
- [7] Shenglong Wang: Research on Practical Teaching of Innovation and Entrepreneurship in Universities (MS., Beijing University of Posts and Telecommunications, China 2018), p.14.
- [8] Yang Li: Analysis on the Present Situation and Influence Factors and Response Strategies of Innovation and Entrepreneurship Education in Science and Technology University ——Taking H University as an Example (MS., Hefei University of Technology, China 2018), p.18.