

Construction and Implementation Path of Innovation and Entrepreneurship Curriculum System for Local Colleges and Universities

Mu Li¹

¹*School of Management, Guizhou University, Guiyang, 550025, China*

ABSTRACT

Taking Jiamusi University as a case study, this work analyzed the development status of innovation and entrepreneurship curriculum system at home and abroad, and constructed the implementation path of innovation and entrepreneurship curriculum system. Through adding new contents of "innovation and entrepreneurship" practical education, setting up a new carrier of "summer semester" innovation and entrepreneurship practice education, and expanding a new way of "promoting learning by competition" practical education, the scientific and technological innovation activity mode can be carried out based on the platform, so as to constantly improve the innovation and entrepreneurship curriculum system and implementation path. It is necessary to promote innovation and entrepreneurship in a wider range, at a higher level and at a deeper level, so as to ensure employment and enhance the competitiveness of personnel training.

Keywords: *Local colleges and universities; Innovation and entrepreneurship; Curriculum system; Implementation path*

1. INTRODUCTION

Under the background of deepening the reform of domestic higher education, such as "new engineering subjects" and "double first-class", local colleges and universities deepen the reform of innovation and entrepreneurship education, strengthen ideological and political education, promote the deep integration of information technology and education and teaching, strengthen new ideas, new structures, new models, new quality and new system, and form a new normal of higher education. It is necessary to constantly improve the curriculum system of innovation and entrepreneurship, reconstruct the curriculum of innovation and entrepreneurship education, push innovation and entrepreneurship to a wider scope, a higher level and a deeper level, ensure employment and enhance the competitiveness of talent training. Local colleges and universities should aim at the cultivation of high-quality applied talents, and construct a number of excellent courses represented by provincial quality courses, provincial quality video open courses, school-level quality resource sharing courses, school-level quality video open courses, and "100 courses", which can lay a solid foundation for the cultivation of high-quality applied talents. Aiming at the problems of unclear orientation, incomplete curriculum system, lack of integration into professional education, single teaching method, low quality of teachers and low practicability of teaching materials in the construction of innovation and

entrepreneurship curriculum in local colleges and universities, this work combined the regional and demand characteristics of local colleges and universities to build the innovation and entrepreneurship curriculum alliance in the field of regional total supply advantage, and regarded the construction of innovation and entrepreneurship curriculum system as the breakthrough point of innovation and entrepreneurship education reform, so as to develop the construction and implementation path design of innovation and entrepreneurship curriculum system [1, 2].

2. CURRENT SITUATION AND ANALYSIS OF INNOVATION AND ENTREPRENEURSHIP CURRICULUM SYSTEM AT HOME AND ABROAD

2.1. Foreign research status and trends

First, the research on the construction objective of entrepreneurship courses. Gerald E.Hills (1988) studied the importance of entrepreneurship education curriculum construction objectives, and considered that the main goal of entrepreneurship course is to improve students' understanding of the process of enterprise creation and management. It is necessary to enhance students' awareness of taking entrepreneurship as a career choice. Through investigating 128 university entrepreneurship courses, Vesper&Gartner (1999) believed that the goal of entrepreneurship education curriculum construction is

mainly the cultivation of personal entrepreneurship and psychological quality, as well as the improvement of the skills of establishing, managing and operating enterprises. The well-known professor Jeffrey A. Timmons of Babson Business School believes that the goal is "to create entrepreneurial genetic code for future generations", which is mainly to cultivate students' creativity and entrepreneurial thinking mode. Second, the research on entrepreneurship curriculum setting. Different views have been formed based on this: one view is that entrepreneurship education curriculum requires independent research institutions, such as the research center for entrepreneurship education or the school of entrepreneurship; another view is that entrepreneurship education is just an idea, so the entrepreneurship spirit and awareness should be permeated into all courses, rather than specific courses. Jeffrey A. Timmons divides entrepreneurship education courses into theory and practice courses [3, 4]. Mc Mullan (1990) and Jay A (2007) believe that entrepreneurship education curriculum should be set up special courses, including basic and professional courses, entrepreneurial spirit, knowledge, skills and other aspects. Solomon (2015) suggests that it is necessary to adopt compulsory, elective and practical forms to carry out interdisciplinary courses. From 1999 to 2000, George Washington University conducted a survey of the teaching methods of American entrepreneurship courses, and found that case analysis, group discussion, and business plan writing are the main methods adopted by two-year universities, while guest lectures, case studies, and plan writing are the methods used by four-year universities [5, 6].

2.2. Domestic research status and trends

First, research on the development status and problems of innovation and entrepreneurship curriculum in colleges and universities. Pen (2010) and Tan (2015) think that the innovation and entrepreneurship curriculum has not been integrated into the school curriculum system, and it has insufficient attention, low curriculum quality and inadequate teachers. Chen (2015) think that students' needs and curriculum quality are asymmetrical. There are more innovative courses than entrepreneurship courses, teachers are unstable and unprofessional, and the main body of innovation and entrepreneurship in colleges and universities is oriented to undergraduate students and graduate education is absent. Second, the research on the relationship between innovation curriculum and entrepreneurship curriculum. Lu Yuhong (2011) thinks that the essence and core of entrepreneurship education is innovation education, and the ultimate goal is innovation education. Cao Yuanyuan (2015) and Chen Yongmin (2016) hold that innovation education and entrepreneurship education are different in educational objectives, educational content and overall operating system, and the latter should not undertake the tasks of the former [7, 8]. Wu Qihua (2004) and Zhang Xiangqian (2014) tend to unify the two, and consider that they complement each

other. Third, the research on the curriculum of entrepreneurship in foreign colleges and universities. Xu Xiaozhou (2010) summarized entrepreneurship education and entrepreneurship curriculum construction in the United States, Japan and Britain; Lin Defu, Lu Ping (2011), Li Jian (2012), Yang Fang (2013), and Li Hongxiu (2017) analyzed the course of entrepreneurship curriculum development in American colleges and universities, the experience of curriculum construction, the curriculum setting and the mode of talent training, and the construction of teaching staff, and believed that the domestic innovation and entrepreneurship education should be raised to a new level of quality education. Fourth, research on the implementation of innovation and entrepreneurship curriculum. Peng et al. (2010), Xu Xiaozhou (2010), Han Qixuan (2013), and Bao Shumei (2016) believe that it is necessary to establish reasonable curriculum structural system from the perspective of educational curriculum objective, construct interdisciplinary and perfect the curriculum organization and implementation mode, standardize the curriculum evaluation system, take both internal and external factors into consideration, and improve the curriculum system of entrepreneurship education in colleges and universities by building a team of professional teachers and combining theory with practice.

3. OPTIMIZE THE IMPLEMENTATION PATH OF INNOVATION AND ENTREPRENEURSHIP COURSE SYSTEM

Taking Jiamusi University as an example in the new engineering background, the university takes the first batch of innovative and entrepreneurial demonstration reform colleges and universities in Heilongjiang Province as an opportunity to practice the motto of "learning by virtue and advocating practice", so as to highlight the cultivation of students' practical ability and innovation and entrepreneurship ability. With basic and professional courses as the core and high-quality video courses and online open courses as guidance, the curriculum system should be optimized to build a curriculum system that is competency-based, interdisciplinary and integrated, and it should attach equal importance to general education and professional education. Over the years, the engineering major has inherited the engineering background of the former Jiamusi Institute of Technology, especially since the merger of the school, the environment and conditions of the engineering major have been constantly improved. It has engineering center of ministry of education for metal wear resistant materials and surface technology, agricultural engineering experimental teaching center, electronic information experimental teaching center, 2 provincial engineering experimental teaching demonstration center, 202 practice bases, modern processing training center, Siemens advanced automation experimental center and other 5 engineering campus practice bases. The total value of teaching instruments and

equipment is more than 80 million yuan. Advanced facilities ensure the development of innovation and entrepreneurship education, and the further improvement of the overall level. It establishes "college students employment, entrepreneurship and innovation service center in Jiamusi", Jiamusi university science and technology business incubator and other innovation and entrepreneurship education platform. Based on "college students employment, entrepreneurship and innovation service center in Jiamusi" and Jiamusi university science and technology business incubator, it provides free production and management places, equipment and technology for college students, and continues to introduce and incubate student entrepreneurship projects. The teaching resources of the school are open to students, and various resources are made full use of to build the off-campus practice teaching base and support the incubator of innovation and entrepreneurship projects.

3.1. Adding new content of "innovation and entrepreneurship" practical education

The education of hierarchical innovation and entrepreneurship should be brought into the undergraduate professional training program and the moral education training program, and the innovation and entrepreneurship should be pushed to a larger scope, a higher level and a deeper level, so as to ensure employment and enhance the competitiveness of talent training. First of all, it is necessary to set up professional innovation and entrepreneurship education courses for all students, guide students to carry out entrepreneurial practice activities in combination with majors, broaden students' employment space and enhance students' employability. Furthermore, it is necessary to carry out practical education for students interested in innovation and entrepreneurship, and add new contents of "innovation and entrepreneurship" practical education. The concrete construction path and method are as follows: first, it should establish innovative practical credits and talent training programs, innovative entrepreneurial activity accumulation and credit conversion system; second, it should establish innovation and entrepreneurship fund project; third, it should establish part-time mentor pool for innovation and entrepreneurship, hire entrepreneurs, venture capitalists and other outstanding talents from various industries as guidance teachers; fourth, it should establish innovation and entrepreneurship education curriculum system of "general education - professional training - practice training"; fifth, it should promote multiple platforms to promote cross-professional team building; sixth, it should effectively use science and technology parks to support the incubation of innovation and entrepreneurship fund projects.

3.2. Setting up a new carrier of "summer term" innovation and entrepreneurship practice education

Three-term system can be carried out to reduce theoretical hours and increase practical hours, which is specially used for practical education in all majors of the university. The summer term is arranged in the summers of grade one, grade two and grade three over a total of 10 weeks. Through setting up practical teaching courses such as experiment, curriculum design, and social investigation, and taking laboratory opening as the carrier, students can be guided to enter the laboratory and carry out independent practical teaching activities, independent experiment, independent design and independent practice, and encouraged to participate in science and technology competitions and creation.

3.3. Developing a new approach to the practical education of "promoting learning by competition"

Through competition training, students can be stimulated to learn, enhance practical ability, and improve their professional skills. Students in all majors should be encouraged to actively participate in professional skills competitions and innovative entrepreneurial competitions inside and outside the school. "Promote learning by competition" can promote the improvement of students' quality and the growth of teachers' ability. Students should be encouraged to actively participate in the national "Challenge Cup" extracurricular academic and scientific and technological works competition, entrepreneurship competition, "Internet +" college students innovation and entrepreneurship competition and other events, and universities should provide students with high-quality competition environment and conditions, and enhance the ability and vision of innovation and entrepreneurship.

3.4. Developing scientific and technological innovation activities of "five spontaneity and three combinations" taking the base as the platform

With the platform of students' extracurricular scientific and technological innovation base, students are absorbed to carry out extracurricular scientific and technological activities in their spare time, and the management forms of student scientific and technological innovation base are studied and determined. The daily scientific and technological innovation activities of students are carried out in the way that students' self-management is the main method and teachers' guidance is the auxiliary method. Under the guidance of teachers, students voluntarily join in, independently formulate plans and contents of the activities of the base, and spontaneously organize and carry

out basic training, scientific and technological lectures, academic reports, special training, competition training, discussion and summary, as well as training activities in the field of humanistic quality. The content of the activity is "combining independent learning with collective training, innovation training with science and technology competition, entrepreneurship training with scientific research and development of social services", and the students in the base help each other, learn from each other, guide each other and improve together. It has realized the mode of "five spontaneity and three combination" development mode of scientific and technological innovation activities for college students, including voluntary participation, spontaneous organization, self-management, self-construction and self-development, which can give full play to students' subjective initiative, enthusiasm and potential of innovation and entrepreneurship, cultivate students' ability of innovation and entrepreneurship, and improve the quality of talent training.

4. SUMMARY

Under the background of new engineering, the school puts innovation and entrepreneurship education on the strategic height of applied undergraduate talents training. It is necessary to scientifically arrange innovation and entrepreneurship education curriculum, increase and optimize innovation and entrepreneurship education teaching content, teaching methods, and specific practical links, and establish and improve the relevant supporting systems and measures conducive to the innovation of education "embedded" curriculum system. The scientific and feasible training mode of innovation and entrepreneurship education takes inheritance and innovation, intersection and integration, coordination and sharing as the main way, and construct the whole process, all-round and integrated carrier of innovation and entrepreneurship practice education of classroom, science and technology innovation, experiment and training, extra-curricular activities, project cultivation, competition guidance and practice incubation.

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