

Research on the training model of mass entrepreneurship and innovation talents in application-oriented universities

Hui Xiong¹ Jinyu Wu² Zhendong Liu³ Zhicheng Wu⁴

1.Department of Engineering Sciences, Uppsala University, SE-75121, Uppsala, Sweden

2.Reading Academy, Nanjing University of Information Engineering, Nanjing, Jiangsu 210044

3.Bioinformation Intelligent Processing Research Center, Shanghai Technical Institute of Electronics and Information, Fengxian, Shanghai 201411

4.Nantong New Global Logistics Co., Ltd. Nantong Jiangsu 226000

Abstract: The cultivation of innovation and entrepreneurship ability of college students in application-oriented colleges and universities has a profound impact on the realization of the training goal of application-oriented talents, and on the improvement of the practical ability and core competitiveness of college students. At present, innovation and entrepreneurship education in application-oriented colleges and universities needs further reform and development at all levels, such as students, teachers, schools and enterprises. Taking application-oriented colleges and universities as the research object, starting from the current situation of the curriculum system of entrepreneurship and innovation talents training, this paper analyzes the scientific construction path of talents training to form a more complete training mode under the entrepreneurship and innovation education mode.

Keywords: mass entrepreneurship and innovation education; Application oriented universities; personnel training

1. Background

With the steady increase of the enrollment rate of colleges and universities in China, as the main body of ordinary colleges and universities, application-oriented undergraduate colleges and universities shoulder the glorious mission of cultivating innovative and entrepreneurial talents (referred to as “mass entrepreneurship and innovation talents”) for the society. The talent training is output oriented, innovation ability training is the core, and innovation and entrepreneurship education is integrated into the whole process of talent training; According to the OBE (goal oriented) education concept, we should cultivate application-oriented talents with good humanistic quality, high professional ethics and open development concept, systematically master professional skills, and can be used to solve complex engineering problems, full of innovation and entrepreneurship awareness and international vision.

The talent cultivation of application-oriented colleges and universities should take the cultivation of application-oriented innovation and entrepreneurship talents as the foothold, stimulate the vitality of mass entrepreneurship and innovation as the starting point, promote the transformation of scientific and technological achievements as the focus, take the integration of industry and education as the starting point, and optimize the ecological environment of mass entrepreneurship and innovation as the foothold, promote the deep integration of innovation and entrepreneurship education and regional development, and provide mass entrepreneurship and innovation talents security and intellectual support for the quality and efficiency improvement of regional economy and industrial transformation and upgrading.

In the past decade, China’s application-oriented colleges and universities have continued to innovate in curriculum teaching reform and talent training mode, insisted on co creation, co construction and sharing, and made new breakthroughs in the construction of mechanisms and systems for talent training, scientific and technological achievements transformation, regional service development, mass entrepreneurship support system, and mass entrepreneurship ecological culture, supported by the construction of innovation and entrepreneurship training and education platform, practical training and incubation platform, scientific and technological achievements transformation platform, and incubation service platform.

This paper will discuss the reform of the education mechanism and innovative curriculum model in the current application-oriented colleges and universities to cultivate innovative and entrepreneurial talents, so as to solve the problem of cultivating innovative and entrepreneurial talents in application-oriented colleges and universities and improve the quality of training application-oriented talents.

2. Key points of training mass entrepreneurship and innovation talents

2.1 Orientation of application-oriented undergraduate universities

Only when colleges and universities have a clear orientation can they carry out strategic planning for talent cultivation. School leaders need to go deep into government departments, industry associations, enterprises and public institutions to understand the demand of society for innovative talents, analyze the characteristics of the demand, investigate the current situation of undergraduate innovation and entrepreneurship education in colleges and universities, form a demand report for innovative and entrepreneurial talents, and provide first-hand information for scientifically and rationally establishing the orientation of colleges and universities and formulating innovative and entrepreneurial talent training programs.

2.2 Target orientation of talent training in application-oriented undergraduate universities

When determining the target orientation of talent training for application-oriented undergraduates, we should focus on the cultivation of students' innovation spirit and entrepreneurial ability, and take thinking innovation and entrepreneurial spirit as the responsibility and mission of application-oriented undergraduate talent training. For this reason, when formulating the target orientation of application-oriented undergraduate talent training, three changes should be achieved:

- (1) Teaching is changing from knowledge passive learning to quality and ability combination;
- (2) The curriculum changes from a single discipline to a multi discipline;
- (3) The students have changed from the universal balanced type to the personality development type.

2.3 Curriculum system of talent training in application-oriented undergraduate universities

Build a talent training curriculum system of "integration of expertise and innovation, one body and two wings". "Specialization and innovation integration" means the integration of professional education and innovation and entrepreneurship education. "One Body and Two Wings" means the integration of innovation and entrepreneurship education as the main body, knowledge, theoretical learning and knowledge application and practice as the two wings. In terms of theoretical teaching, it highlights the core position of the curriculum, giving consideration to the cultivation of professional ability and innovation and entrepreneurship ability.

2.4 Construction of the teaching staff of application-oriented undergraduate universities

The application-oriented universities need to build a "six in one" team of innovative and entrepreneurial teachers.

(1) Professional theory teachers. It is required to have high professional theoretical knowledge, rich practical experience, scientific research ability and innovative spirit. Mainly engaged in professional theory teaching and scientific research, focusing on imparting professional knowledge to students, market-oriented, cultivating students' innovative thinking and innovation ability, and giving consideration to the cultivation of students' entrepreneurial ability.

(2) Professional practice teachers. It is required to have rich practical experience, which can be full-time in schools or hired from enterprises. Mainly engaged in the teaching of professional practice courses, focusing on training students' practical ability and entrepreneurial ability.

(3) Innovation mentor. It mainly carries out the teaching of innovative education training courses, organizes innovative societies and various discipline competitions, and focuses on cultivating students' innovative spirit and ability.

(4) Entrepreneurship mentor. Mainly carry out the teaching of basic entrepreneurship courses and entrepreneurial ability training courses, and guide students' entrepreneurial practice to focus on cultivating students' entrepreneurial enthusiasm and entrepreneurial ability.

(5) Industry experts and scholars. Experts and scholars from two first-class universities are invited to the university through the Scientific Research Office, Youth League Committee, and Entrepreneurial College departments to give academic lectures to students, broaden their horizons, and improve their comprehensive quality.

(6) Entrepreneurs and successful entrepreneurs. Social personages, especially famous entrepreneurs, have certain entrepreneurial experience and innovation ability. By employing them as part-time professors of the school, and holding lectures on "mass entrepreneurship and innovation" and corporate culture, the "mass entrepreneurship and innovation" teaching staff will be more high-level and targeted.

In terms of mass entrepreneurship and innovation education in colleges and universities, these six types of teachers are indispensable.

They do their best to jointly shoulder the responsibility of cultivating innovative and entrepreneurial talents.

2.5 Guarantee of talent training in application-oriented undergraduate universities

(1) Establish a diversified platform for mass entrepreneurship and innovation education

The essence of innovation and entrepreneurship education is to put people first and promote the all-round development of students. Mass entrepreneurship education should strengthen the role of schools as the carrier of innovation and entrepreneurship education, apply teaching rules to improve the comprehensive quality of students, and provide a support platform with distinctive features, complete functions and effective guarantee for cultivating students' innovation spirit and improving their entrepreneurship ability.

(2) Build a diversified policy support system

As a national action plan, innovation and entrepreneurship need a good atmosphere for social participation. The cultivation of entrepreneurship and innovation talents requires not only the input of the school, but also the support of social forces. Diversified policies need to be formulated to support the cultivation of entrepreneurship and innovation talents.

a. Fund policy: The construction of innovation and entrepreneurship practice platform is based on the integration of social resources, and also requires certain funds and technology support.

b. Incentive policy: on the one hand, reward the excellent students who participate in the innovation and entrepreneurship competition and the students who practice, and encourage students to carry out social practice activities. On the other hand, certain subsidies will be given to various entrepreneurship trainings carried out by the school to encourage them to provide various entrepreneurship services for college students.

c. Supporting policies: College students face huge risks in starting their own businesses, and their willingness to start their own businesses is not strong. Therefore, the school can set up relevant entrepreneurship funds to support college students of start-ups, and entrepreneurs will not have too much economic pressure even if they fail to start their own businesses.

(3) Multi angle teaching quality management and assessment and evaluation methods

Promote the reform of curriculum development and teaching management system matching the credit system, set up reasonable credit for innovation and entrepreneurship, establish a credit accumulation and conversion system for innovation and entrepreneurship, explore how to convert students' innovative experiments, publishing papers, obtaining patents and independent entrepreneurship into academic scores, and identify students' participation in project research, project experiments and other activities as curriculum learning.

Develop innovation and entrepreneurship training plans for students with willingness and potential, establish innovation and entrepreneurship files and transcripts, and objectively record and quantitatively evaluate students' innovation and entrepreneurship activities. Give priority to supporting students who participate in innovation and entrepreneurship to transfer to relevant majors, implement flexible schooling, relax the length of schooling for students, and allow adjustment of academic progress and retention of student status to suspend school for innovation and entrepreneurship.

3. Improve the method of mass entrepreneurship and innovation talents training

3.1 Top level design of school running orientation, talent training objectives and teaching mode based on social needs and graduation requirements

Aiming at the problems of "what to cultivate" and "how to cultivate", application-oriented universities can organize expert teams to master the characteristics of the demand for innovative and entrepreneurial talents in economic and social development through investigation; Combined with the particularity of application-oriented undergraduate universities and the graduation requirements of engineering certification, it can be used to guide the formulation of professional training objectives, design of teaching content, examination and assessment, etc.

Three changes should be achieved in the orientation of training objectives. Through the mass entrepreneurship and innovation education in schools, college students are no longer passive learners of knowledge, but improve their comprehensive quality in entrepreneurial practice. Through the reform of various teaching methods and the network, digital and intelligent teaching equipment, the mass entrepreneurship and innovation education no longer stays in the traditional discipline classification, but realizes the integration and development of various

majors in practice. The core of the change of target orientation is to change the traditional teaching thinking of teachers and students, and to achieve high-quality talent training with mass entrepreneurship and innovation practice as the carrier.

3.2 Curriculum system for mass entrepreneurship and innovation talents cultivation based on constructivism of “integration of expertise and innovation, one body and two wings”

Centering on innovation and entrepreneurship, we will set up career development and employment and entrepreneurship guidance courses, and build a talent training curriculum system of “integration of expertise and innovation, one body and two wings”. “Professional and creative integration” means the integration of professional education and innovation and entrepreneurship education. “One body and two wings” means that innovation and entrepreneurship education is the main body, and knowledge, theoretical learning, knowledge application and practice are the two wings. In the construction of the curriculum system for mass entrepreneurship and innovation talents training, we should not neglect one thing and lose the other, overemphasize entrepreneurship and neglect general education and professional education. If entrepreneurs do not have professional knowledge and skills as the basis for practice, innovation and entrepreneurship projects will be difficult to promote, strategic decisions are prone to mistakes, resulting in frequent personnel flow, uncontrollable product quality, blocked market development, and entrepreneurial enthusiasm will gradually disappear.

3.3 The construction of diversified teaching platform based on the improvement of innovation and entrepreneurship ability and practical ability

Mass entrepreneurship and innovation education is based on the cultivation of students' ability, strengthening the basic and professional practice links, achieving the combination of teachers' professional basic teaching ability and students' personalized learning ability and innovation and entrepreneurship ability, and forming a diversified innovation and entrepreneurship ability training system. For example, establish a university entrepreneurship base in the industrial park, and hire enterprise engineers to give students professional courses in the entrepreneurship base. After the course is completed, students can choose to practice in enterprises, or they can practice entrepreneurship projects in the entrepreneurship incubation base. Through close cooperation with enterprises, it can not only promote students' innovation and entrepreneurship ability, but also enhance students' enterprise practice ability.

The construction of diversified teaching platforms should build a “six in one” application-oriented undergraduate IT based mass entrepreneurship and innovation teaching system that integrates “teaching, learning, management, examination, supervision and evaluation” with “Internet+”, “wisdom+”, “teaching and learning, operation management, examination, supervision and evaluation”.

a. Form a reasonable application oriented undergraduate education information program. Build a network teaching platform, practical teaching management system, online university, smart classroom and smart teaching system, upgrade the educational administration management system, form an education and teaching information system suitable for local application-oriented universities, realize the whole process management of information based teaching, and help local undergraduate colleges to minimize capital investment while meeting the construction needs.

b. Promote the application oriented undergraduate mass entrepreneurship and innovation teaching method, research the teaching mode and method combining the advantages of the information teaching environment, and promote it in teaching. By setting up and learning the typical, using the information-based teaching method, we can effectively strengthen the strength of basic teaching. On the basis of stabilizing the professional education, we can adopt more advanced teaching methods to make the concept of innovation and entrepreneurship deeply rooted in the hearts of the people, so that students can learn more efficiently and improve their lifelong learning ability.

c. Improve the application and management of information technology in mass entrepreneurship and innovation teaching. Research the application of information teaching related software, analyze the teaching effect through artificial intelligence and big data, and evaluate the teaching quality. In mass entrepreneurship and innovation teaching, professional teaching content and practical operation need to be completed in the practice base and enterprises. The quality of teaching effect is not only reflected in the students' mastery of knowledge, but also affects the further improvement of teachers' teaching level. Through the application of intelligent teaching software, the teaching quality evaluation can be real-time, graphical and accurate. Teaching supervision can find the problems ignored in teaching in a short time, so that teaching reform can be targeted and the teaching management ability of applied undergraduate students can be enhanced.

d. Improve students' independent and personalized learning ability. The construction of an application-oriented undergraduate IT based mass entrepreneurship and innovation teaching system, on the one hand, can provide students with rich online learning resources, on the other hand, can improve students' hardware learning conditions, provide students with learning convenience in time and space, and help students to carry out independent and personalized learning.

e. Strengthen teachers' information technology literacy and intelligent teaching ability. Cultivate teachers' information-based teaching thinking, improve teachers' teaching methods with virtualization, digitalization and intelligence, enhance teachers' ability to use high-tech tools to assist teaching, explore appropriate reform and innovation means, and improve teaching effects.

4. Conclusion

From the perspective of mass entrepreneurship and innovation, this paper takes the talent cultivation of application-oriented undergraduate universities as the research object, and through the analysis of the characteristics of the social economy's demand for innovative and entrepreneurial talents, it deeply explores the top-level design of the talent cultivation of application-oriented undergraduate universities and the ways and methods of the talent cultivation of application-oriented undergraduate universities, forming a complete set of training models. The main innovation points are:

4.1 Combined with the actual situation of the mass entrepreneurship and innovation education in application-oriented colleges and universities, this paper analyzes the goal and realization method of mass entrepreneurship and innovation talent training, the platform construction of mass entrepreneurship and innovation teaching and enterprise practice, and the information teaching reform path of mass entrepreneurship and innovation education;

4.2 It is put forward that three transformations should be realized in the target orientation of the cultivation of application-oriented undergraduate talents, namely, the transformation of teaching from passive learning of knowledge to combination of quality and ability; The curriculum changes from a single discipline to a multi discipline; The students have changed from the universal balanced type to the personality development type.

4.3 Propose to build the curriculum system and training mode of "integration of expertise and innovation, integration of one body and two wings" for mass entrepreneurship and innovation talents training;

4.4 Put forward the construction plan of "mass entrepreneurship and innovation" teachers;

4.5 It has constructed a guarantee system for the cultivation of application-oriented undergraduate talents, including a diversified platform for innovative teaching, a diversified policy support system, and a multi angle teaching quality management and assessment and evaluation methods.

References:

- [1] Di Jie. Innovation in the training mode of diversified entrepreneurship and innovation talents in application-oriented universities [J]. Education Informatization Forum, 2022 (04): 75-77
- [2] Wang You, Zhu Yuer, Wang Xin. Research on the cultivation path of innovation and entrepreneurship ability of application-oriented college students under the guidance of OBE concept [J]. Science and Technology Wind, 2022 (22): 50-52. DOI: 10.19392/j.cnki.1671-7341.202222016
- [3] Deng Xincan, Chen Zhongji, Han Yue, Lv Ping. "Double integration" training mode and implementation path of mass entrepreneurship and innovation education in application-oriented universities [J]. China Modern Education Equipment, 2022 (01): 133-135. DOI: 10.13492/j.cnki.cmee.2022.01.044
- [4] Li Shixiao. Research on Innovation of Talent Training Mode of Mass Entrepreneurship and Innovation Education in Local Applied Universities [J]. Research and Practice of Innovation and Entrepreneurship Theory, 2019, 2 (13): 113-114

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