

The Practice and Reflection on the Cultivation of New Technology Applied Entrepreneurial Talents in Higher Vocational Colleges

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Abstract

'Mass Entrepreneurship, mass innovation' provides an important time opportunity for higher vocational colleges to train new technology application talents, which is also a concrete action for higher vocational colleges to carry out the strategy of 'Dual entrepreneurship'. The training of new technology application talents in higher vocational colleges focuses on training students to become new technology application talents with the characteristics of entrepreneurs. In the course of practice, we have accumulated the following concrete experiences, namely, expanding the scope of production to cultivate innovative and entrepreneurial talents, strengthening the education of innovation and entrepreneurship by learning, deepening the research to enhance the ability of innovation and entrepreneurship, and improving the degree of innovation and entrepreneurship by creating, create a high ground for innovation and entrepreneurship. Reflect on the existing practice, it is urgent to introduce new technology into the curriculum of higher vocational education, to promote the main body consciousness of enterprises participating in training new technology application talents, and to improve the ability of new technology service enterprises in higher vocational colleges.

Keywords

Higher Vocational Colleges; Application of New Technology; Entrepreneurial Talents.

1. Introduction

With the transformation and development of our country's economy and society, the Innovation and Entrepreneurship education in colleges and universities has received unprecedented attention. The opinions on deepening the reform of innovation and entrepreneurship education in colleges and universities' (issued by the state-run office [2015] No. 36), issued by the State Council, is a concrete implementing opinion on deepening the reform of entrepreneurship education in colleges and universities and cultivating innovative and entrepreneurial talents. Under the strategy of innovation-driven development, the innovation of Higher Vocational Education Development and the Promotion of high-quality employment and Entrepreneurship of Higher Vocational College graduates are important measures to realize "Mass entrepreneurship and mass innovation". Under the background of Mass Innovation, Higher Vocational Colleges based on the development of regional economy and society need to build a talent training system of "Training, research and innovation" integration, and train new technology application and entrepreneurship talents, which is an effective measure for higher vocational education to train innovative and entrepreneurship talents. 'Double-innovation' not only provides an important time opportunity for higher vocational colleges to cultivate new technology application talents, but also is a concrete action for higher vocational colleges to practice 'Double-innovation' strategy.

2. The Background and Significance of Training New Technology Applied Entrepreneurial Talents in Higher Vocational Colleges

2.1. The Background of Training New Technology Application Talents in Higher Vocational Colleges

2.1.1. Regional Industrial Transformation and Upgrading Requires the Application of New Technology Entrepreneurship

Market, technology and capital are the three factors that dominate the speed, scale and replacement law of industrial transformation and upgrading. The industrial transformation and upgrading based on the leading power of technology emphasizes the transfer and application of technology, and forms the technology application process of technology development, technology transfer and market cultivation. In this process, the application of innovative and entrepreneurial talents to new technology is the cornerstone of accelerating industrial transformation and upgrading. With the gradual disappearance of our country's demographic dividend and the subsequent industrial transformation and upgrading, especially in the implementation of the 'Made in China 2025' strategy, how to achieve 'Machine for person' and 'E-COMMERCE for market', how to realize the transformation of labor-intensive enterprises to automation and intelligence, and how to realize the application of new technology to promote industrial transformation and upgrading. As an important force of industrial transformation and upgrading in service area, higher vocational colleges need to think about these problems urgently. Therefore, higher vocational colleges should shoulder the mission of promoting regional industrial transformation and upgrading, train a batch of innovative and entrepreneurial talents with new technology application, and incubate a batch of small and micro enterprises with scientific and technological content^[1], to realize the effective joint of talents, technology, capital and other innovative resources, and promote the application of new technology entrepreneurship in higher vocational colleges to deepen development.

2.1.2. The Rapid Development of the Internet Promotes Technological Entrepreneurship

Traditional innovation and entrepreneurship activities which is a small number of elite personnel as the main body and advanced experimental equipment as a carrier. With the development of new technology and the improvement of market environment, the traditional innovation and entrepreneurship is changing from elite behavior to mass action. Under the background of 'Internet +' era, the new mode of innovation and entrepreneurship, which is user-centered, characterized by common innovation and open innovation, is rising gradually. Internet and Mobile Terminal Devices realize low-cost aggregation of information, capital, technology and other factors of production, such as crowdfunding, crowdsourcing, crowdsourcing, maker and other innovation models to broaden the organizational form of innovation and entrepreneurship. The rapid development of the Internet has greatly reduced the threshold of access to entrepreneurship, but also reduce the cost of technological entrepreneurship, and enrich the financing channels of technological entrepreneurship. It is convenient for the new technology application talents to link the technology supply side and the market demand side effectively, and realize the most convenient connection of the market resources and the social demand, it also plays an intermediary role in connecting the generation of new technology and the application of new technology.

2.1.3. The Requirements of Higher Vocational Colleges to Deepen the Reform of Personnel Training Model

Under the guidance of the Innovative Development Concept of higher vocational education, the deepening reform of talent training mode in higher vocational colleges has ushered in a new opportunity. Under the school-running philosophy of 'What kind of supporting industry, set up

what kind of specialty; what kind of enterprise difficult problem, set up what kind of research platform; what kind of research platform, train what kind of New Technology Application Entrepreneurial Talents^[2], sticking to the combination of production, teaching and research, taking the cultivation of new technology application and pioneering talents as the carrier, forming a new mode of running a school to serve the development of local industries, is an important measure for higher vocational colleges to establish a regional foothold and form a characteristic tradition of running a school, it is also the specific path of 'Speeding up the pace of reform in higher vocational colleges, deepening the reform of personnel training mode, and promoting the ability of application technology innovation service'.

2.2. The Significance of Higher Vocational Colleges to Cultivate New Technology Applied Entrepreneurial Talents

2.2.1. It Is Beneficial to the Realization of Talent Training Goal in Higher Vocational Colleges

The goal of talents cultivation in higher vocational education decides the basic direction of students cultivation in higher vocational colleges, and stipulates the requirements of talents cultivation in knowledge, skills, quality, etc. . As early as 2000, the Ministry of Education clearly pointed out that higher vocational education trains applied professionals of higher technology who meet the first-line needs of production, construction, management and service. The key link of training technical applied talents is to improve the ability of students to solve practical problems in production by using technical skills. With the development of Economic Society and Higher Vocational Colleges, it is beneficial to realize the goal of higher vocational education to train students to apply new technology and start their own business.

2.2.2. It Is Conducive to the Cultivation of Technological Innovation-Oriented Entrepreneurs

At present, College Students' entrepreneurship practice can be classified into two categories: one is survival entrepreneurship, many local colleges and higher vocational colleges provide students with on-campus entrepreneurship sites and platforms, most student entrepreneurship programs are also aimed at the on-campus student market. This kind of low-cost, low-technology, low-level management and operation of the entrepreneurial practice of the lack of stability and growth. The other is 985,211 and other high-level university-led high-tech student entrepreneurship. This kind of entrepreneurial practice has a high degree of attachment to scientific research, high investment and high risk. Although it has certain growth, the success rate is less than 5%. Compared with the two, the start-up of the application of new technology has exactly realized taking the advantages of the two and making up the disadvantages of the two, that is, as long as the new technology is mastered, the needs of the society and the users are coordinated, and the new products or services are provided, can greatly reduce the dependence of entrepreneurship on scientific research. This kind of entrepreneurial mode not only has the technical content, but also has the characteristics of short cycle and quick effect.

2.2.3. It Is Beneficial for Higher Vocational Colleges to Carry Out the National 'Double-Innovation' Strategy

At present, our country has stepped into the era of mass innovation. 'Mass Entrepreneurship, mass innovation' not only clarifies the development problem, but also highlights the people's livelihood problem. At the national level, the policy refers to a variety of organizational forms of innovation and entrepreneurship, and increasingly clearly expresses the strategic thinking and development path of innovation to promote entrepreneurship, it also accurately expresses the subjectivity, mass and vitality of the 'Double-innovation' strategy. The development of new technology application in higher vocational colleges embodies these characteristics. It not only

emphasizes individual innovation, but also emphasizes innovation and entrepreneurship with technology content. It can be said that the new technology application of entrepreneurial talent training is the practice of higher vocational colleges, 'Double-innovation' of the specific action.

3. The Connotation and Practice Exploration of New Technology Application and Pioneering Talents Training in Higher Vocational Colleges

3.1. The Connotation of New Technology Application and Pioneering Talents Training in Higher Vocational Colleges

The New Technology Application Entrepreneurial Talents is a compound concept which is formed on the basis of the new technology application, entrepreneurial talents and so on. New Technology usually refers to the new technology improved on the basis of the original technology, 'Including not only a variety of new process operation methods and new materials, new equipment, but also related to the new system, new management'^[3]. Technological innovation is generally divided into two stages: 'The first stage is the scientific and technological personnel to carry out innovative research and development, the formation of New Technologies; the second stage is to carry out technological transformation, the transformation of new technologies into new processes or new products.'^[4] the application of new technology in higher vocational colleges belongs to the second stage in the process of technology transformation, that is, the process of transforming new technology into realistic new products and realistic productive forces.

Knudson et Al. , based on two factors that influence economic man's behavior, namely, the motivation to commercialize new ideas (entrepreneurial motivation) and the motivation to create new ideas (innovative motivation) , this paper puts forward four types of talents, which are innovative talents, entrepreneurial talents, and entrepreneurial innovative talents and innovative entrepreneurial talents.^[5] among them, entrepreneurial talents have strong entrepreneurial will, entrepreneurial awareness and entrepreneurial ability, and can actively engage in entrepreneurial activities, that is, to initiate and set up a venture team composed of professional and technical personnel, management personnel, can bear risks independently of the organization.

Based on the above analysis, we understand that the training of new Technology Applied Entrepreneurial Talents in higher vocational colleges is based on serving the local economy and society, taking the students' entrepreneurial interest as the motive force, and taking the technology innovation and application as the means, it is a new education mode which aims at cultivating new technology application talents with entrepreneurial will, entrepreneurial consciousness and entrepreneurial ability, and which coincides with and highlights the characteristics of higher vocational education. This concept of entrepreneurship education differs from General Entrepreneurship Education in that, emphasizing the establishment of demand-oriented, new technology application as a means, curriculum-based, team-based "Production-learning-research-innovation" integration of personnel training model, and trained talents can master their own technology as a basis to initiate and set up a entrepreneurial team to achieve technology to productivity transformation.

The theoretical basis of the cultivation of New Technology Applied Entrepreneurial Talents in higher vocational colleges can be traced back to pragmatism, constructivism and situational learning theory. For example, Dewey advocated "Learning by doing", "Learning by experiencing", Symon advocated "Learning by making", "Valuing Learner Initiative", the theory of situational learning calls for the training of professional skills in specific work situations,

which provides a strong theoretical support for the training of new technology-based entrepreneurial talents.

3.2. Practice and Exploration of New Technology Application and Pioneering Talents Training In Higher Vocational Colleges

In the face of the new round of scientific and technological revolution and industrial transformation, Wenzhou Vocational and Technical College actively grasps the development of new technologies, new industries and new forms of business, incubating small and micro enterprises of science and technology, promoting the development of real economy, deepening the integration of production, teaching and research, and taking the cultivation of talents as the core driving force and core combining point of the integration of production and teaching, which echo the cultivation of new engineering talents in undergraduate colleges, to form the training mode of new technology application talents.

To 'Produce'to expand: The integration of industry and education, the cultivation of innovative entrepreneurial talent. The school adheres to the concept of 'Interaction with regional economy and win-win situation with enterprises', and constructs a cooperative educational mechanism of integration of Industry and education and cooperation between government and enterprises. First, to carry out school-administration cooperation in educating people, to jointly build a second-level college with the government to serve the automobile and motorcycle industry, the shoe and clothing industry and the light industrial and intelligent manufacturing industry in Wenzhou, and to realize the goal of building a platform for the government, performing opera in schools, and educating people together; Second, to carry out school-industry cooperation in educating people, the second-level colleges should be built with the industry and the regional pillar industries, and the new mode of mixed ownership should be tried to train the talents of new technology application innovation and entrepreneurship, from post-internship, order training, modern apprenticeship system to the university-enterprise R & D Center, to build a win-win situation for universities, enterprises, students and society.

To 'Learn' the width; we should deepen the reform and strengthen the education of innovation and entrepreneurship. Schools adhere to the 'All-oriented, classified teaching, professional, strengthen the practice' concept of innovation and entrepreneurship education to lead the comprehensive reform of professional education, improve the quality of training. The first is to reform the talent training mode and create '2 + 1' talent training, '2' refers to the students who have completed the professional courses in the previous two years, "1" refers to the students who have completed the last year's innovation and entrepreneurship courses in the Entrepreneurship Institute The second is to reform the curriculum system, to integrate the regional and professional characteristics of Wenzhou, to build a "Hierarchical classification" curriculum system, to set up innovation and entrepreneurship education-related courses, and the third is to reform the practice teaching model, to build a practical teaching system which is based on practice, driven by R & D and Guided by innovation and entrepreneurship, and extend 'Learning by doing', 'Learning by doing', 'Learning by exploring' to 'Creating by doing' and 'Creating by exploring'.

To 'Research' digging depth: We are on-site R & D to enhance the ability of innovation and entrepreneurship. The school adheres to the concept of "Innovation and Entrepreneurship driven by R & D, and Innovation and entrepreneurship serve the development of real economy", and takes the lead in setting up the "National Applied Technology Service Alliance of Higher Vocational Colleges", striving to solve the problem of the last kilometer of technology application. First, to jointly build a collaborative innovation center, the service industry key technologies. Zhejiang province-level Collaborative Innovation Center for Smart Technology of light industry equipment was set up to provide technical service for enterprises, and the second

is to Jointly Build Enterprise R & D Center to serve private enterprises. To Build Enterprise Research Institute

With large and medium-sized enterprises, to build industry-university-research-innovation center with small and medium-sized enterprises, to develop new technology and new products for enterprises, and to consolidate the foundation of industry-university-research to serve the professional growth of teachers. Through the transformation of scientific and technological achievements of teachers, to solve technical problems for enterprises.

To 'Innovation' to improve: the application of new technology, to create a highland of innovation and entrepreneurship. First, the concept of innovative personnel training. The school adheres to the concept of "Training today's students with tomorrow's technology to serve the future", taking the new technology as the guidance, taking the intelligent, information and digital projects as the carrier, and devoting great efforts to the training of new technology application talents, service 'Made in China 2025' strategy. The second is to reconstruct the mode of personnel training. The school revises the personnel training plan with the new technology application personnel training idea, form a "Demand-oriented, technology-based, professional-based, team-based, interest-driven, practice-based approach to school-enterprise cooperation as a link" training model. Third, to advocate new technology entrepreneurship. The school strongly advocates innovation and entrepreneurship in the application of new technologies, trains innovative and Entrepreneurial Talents, sets up entrepreneurship colleges, and constructs the 'Three teachers and three students' training mode of 'Teachers and graduate students follow, teachers and supervisors create, teachers and students create together', in order to combine innovation and Entrepreneurship Education with professional education, we should explore the training method of 'Follow-up of teachers and postgraduates, creation of teachers and supervisors, creation of teachers and students', and practice the training method of 'Enterprise setting questions, school taking questions, teachers analyzing questions, students answering questions'.

4. Reflection on the Cultivation of New Technology Applied Entrepreneurial Talents in Higher Vocational Colleges

4.1. The Introduction of New Technology Into Higher Vocational Courses Is Relatively Backward

At present, the cycle of discovery, popularization and practical application of new technology is becoming more and more short. However, there are still strong traces of formatting in personnel training planning, Curriculum Setting and textbook development in higher vocational colleges, therefore, the contradiction between the talent training and the supply of social demand is more prominent. Because the new technical achievements have not entered the higher vocational courses in time, the higher vocational colleges have not taken the application of new technology and the value of technological innovation as the core capital value of entrepreneurship. This not only hinders the quality of higher vocational colleges personnel training, but also restricts the application of new technology in higher vocational colleges and the promotion of entrepreneurial personnel training. Because of the students' weak ability to learn the theory of new technology knowledge, lack of awareness of starting a business based on the application of new technology, and lack of practical platform for new technology training, etc., the new technology students are learning is out of step with the new technology in the production activities of the enterprise. Therefore, it is an urgent problem for higher vocational colleges to choose new technology which can be learned, used and closely related to social demand as the course content of study and training.

4.2. The Enterprises in Higher Vocational Colleges Lack The Main Body Consciousness to Participate in the Training of New Technology Application Talents

Participation in vocational education requires investment of cost and effort, and companies often do not care about training technical talents in vocational colleges because they are not compensated for the benefits. The new technology application enterprise talented person training faces the same predicament. There are two main reasons for this: First, large-scale enterprises, a full range of personnel, advanced equipment, the internal formation of a mature technological innovation, product innovation mechanism, second, small-scale enterprises, while recognizing the importance of participating in the training of new technology applied entrepreneurial talents for their own development, lack the awareness and sense of responsibility to participate in the training of new technology applied entrepreneurial talents in higher vocational education, however, due to lack of financial and material resources and strong desire to pursue new technology, there is a lack of patience and ability to participate in the training of new technology application talents in higher vocational education. In short, the form of enterprise participation in higher vocational education new technology application training is greater than the content, enterprises in passive education status.

4.3. The Ability of New Technology Service Enterprises in Higher Vocational Colleges Needs to Be Improved

The source of New Technology in higher vocational colleges can not be separated from "Research": First, based on the "Research" to serve the regional economy and society, to meet the needs of technological innovation and technological upgrading of regional industries; Second, based on the 'Research' to serve the regional industry enterprises, through the development of applied research, leading the Regional Industry Enterprise Technology Development 'Research'. [6] at present, the relatively weak scientific research ability of higher vocational colleges results in that their new technologies can not give full play to the service ability to enterprises. First of all, the new technology in higher vocational colleges can not fully meet the needs of enterprises for technological innovation and auxiliary new product research and development, and it is not enough to attract enterprises to participate in the training of new technical personnel. Secondly, the technical skills that the higher vocational college students actually master lag behind the technical skills that the enterprise job needs, and the enterprise is not willing to accept the students to enter the core links of product research and development, technological innovation and so on. How to improve the dependence of enterprises on the new technology of higher vocational colleges, to find the win-win point of cooperation between the two sides, is an urgent problem for higher vocational colleges to solve.

4.4. The New Technology Application Enterprise Talented Person Training System Is Not Perfect Enough

At present, the higher vocational education stays in the level of industry follow and industry cooperation, and can not achieve industry leading. It needs a large number of people who can control, debug and maintain the new machine technology to promote the development of regional industry quality. Due to the lack of sensitivity to industry changes and the lack of specialized institutions, personnel and ability to connect and study industry and industry changes, the iterative upgrading of major catalogues in most higher vocational colleges can not keep up with the "Redefinition" of industry, the rigidity of specialty setting is greater than the flexibility, and the "Industry Steering Committee" can not implement the real "Industry guidance" because of the lack of space to adapt to the industry changes. The structure of teachers in higher vocational colleges is too single, the original teachers lack the ability of linking up with the industry enterprises and the service industry, most of the enterprises lack the actual working

background and experience of the industry enterprises, while the enterprise teachers are rich in practical experience, however, the relative lack of theoretical foundation and basic teaching skills and methods, which affects the deep integration of schools and enterprises and the quality of New Technology Application Entrepreneurship Training; Lack of quality assurance system and concrete evaluation system for the implementation of the strategy of deep integration between colleges and enterprises and the effect of serving the local economy in higher vocational colleges, as for the integration of Specialty Establishment and Industry Development, the construction of teaching staff, the implementation of practice links, the effect of classroom teaching, etc. , it is difficult to evaluate the integration effect of Industry and education accurately, let alone guarantee the quality.

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