Research on Cultural Origins and Influence on Engineering Entrepreneurial Education Within Colleges and Universities in Chinese Mainland

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Abstract

The entrepreneurship education in engineering education is a long-term, complex and arduous system engineering. It requires the cooperation and joint efforts of the country, universities, students, society and related industries. Over the past several years, Chinese mainland has implemented the policy of “mass entrepreneurship and innovation” and promoted “innovative and entrepreneurial education”. How to achieve effective integration of engineering education and entrepreneurship education is a top priority for higher education in Chinese mainland. Horizontally, the entrepreneurship education of Chinese mainland is an important tributary of the international entrepreneurship education. Vertically, colleges and universities should also need to excavate the essence of Chinese culture and exerting its leading value, which helps to form specific entrepreneurship education model. Thus, entrepreneurial culture in higher engineering education needs to be examined from historical and cultural perspective. This research first analyzes the origins of entrepreneurial culture in higher engineering education; secondly, explores the influences of entrepreneurial culture in higher engineering education; finally, analyzes the implications of entrepreneurial culture in higher engineering education based on a cultural perspective, especially in the cultural ecology of Chinese mainland. This research preliminarily shows that the practice of entrepreneurship education within colleges and universities in Chinese mainland urgently seeks rational reflection on the inheritance of traditional culture, the values excavation of traditional business culture, the value recognition of entrepreneurship education, and functions exertion of modern university culture, in order to enhance the level of entrepreneurship education in higher engineering education.

Keywords: engineering education, entrepreneurship education, entrepreneurial culture, colleges and universities, Chinese mainland

1. Introduction

Entrepreneurship education can not only create more jobs, but more importantly, cultivate the innovative spirit and entrepreneurial ability of the younger generation. Providing education, training and support for entrepreneurs is one of the important factors for a country to develop an entrepreneurial economy and establish a global competitive advantage. Along with China’s economic transformation and industrial upgrading, and the number of college graduates increasing year by year, the employment situation has been extremely severe. In 1998, the Action Plan for Revitalizing Education for the 21st Century proposed the development of entrepreneurship education in colleges and universities. In the following two decades, the country has successively introduced dozens of policies and regulations for the promotion of entrepreneurship education, and the strategic trend of entrepreneurship education has gradually taken shape. “Innovative and Entrepreneurship Education” is a new concept formally used in the Ministry of Education documents in 2010. On May 4, 2010, the Ministry of Education issued the “Opinions on Vigorously Promoting Innovative and Entrepreneurship Education in Colleges and Universities and Independent Entrepreneurship Work for College Students” [1], requiring local governments to vigorously promote innovative and
entrepreneurship education and college students’ self-employment work to achieve breakthrough progress. The innovative and entrepreneurship education of colleges and universities in Chinese mainland has entered a stage of comprehensive advancement under the guidance of the education administration. Since then, the State Council and the Ministry of Education have successively issued programmatic documents on innovative and entrepreneurship education, such as “Basic Requirements for Entrepreneurship Education and Teaching in General Undergraduate Schools (Trial)” [2], and established policy orientation for innovative and entrepreneurship education.

In recent years, China’s Communist Party Central Committee and the State Council have attached great importance to “mass entrepreneurship and innovation”. In 2015, after the “Several Opinions on Deepening the Reform of the Institutional Mechanism and Speeding up the Implementation of the Innovation-Driven Development Strategy” [3] by the CPC Central Committee and the State Council and the “Implementation Opinions on Deepening the Reform of Innovative and Entrepreneurship Education in Colleges and Universities” [4] by the General Office of the State Council, resource investment, policy support and environment creation have received great attention, opening a new “mass entrepreneurship and innovation” era in Chinese mainland. The “Opinions on Deepening the Reform of Innovative and Entrepreneurship Education in Colleges and Universities” clearly puts forward the requirements of “establishing and improving an innovative and entrepreneurship education system that integrates classroom teaching, independent learning, combination with practice, guidance and assistance, and cultural guidance,” in order to vigorously cultivate students’ innovative spirit, entrepreneurial consciousness and innovative ability, with special emphasis on making full use of the power of culture to promote innovative and entrepreneurship education system in colleges and universities.

Currently, how to innovate an entrepreneurship education from a large-scale development to an intension development is a major problem for Chinese mainland. Horizontally, in terms of the international development trend of entrepreneurship education, the development of entrepreneurship education of Chinese mainland is an important tributary of the development of international entrepreneurship education. During the advancement process of “innovative and entrepreneurship education”, colleges and universities in Chinese mainland should learn and absorb the cultural essence of entrepreneurship education in American colleges and universities with a rational attitude. Vertically, colleges and universities should also need to excavate the essence of Chinese culture and exerting its leading value. The “Implementation Opinions on Deepening the Reform of Innovative and Entrepreneurial Education in Colleges and Universities” clearly states that, “By 2020, we will establish and improve a system of innovative and entrepreneurial education in colleges that integrates classroom teaching, independent learning, combined practice, guidance and assistance, and cultural guidance.”[4] Obviously, the significance of culture in entrepreneurship education is reflected.

2. Research Questions

Undoubtedly, Colleges and universities play an important role in the development of entrepreneurship. In terms of scale, China has become a veritable country with engineering education. The integration of entrepreneurship education and engineering education is not
only an important trend for entrepreneurship education to become a professional model, but also a new direction for the current engineering education reform. In the context of “mass entrepreneurship and innovation”, how to achieve effective integration of engineering education and entrepreneurship education is a top priority for higher education in Chinese mainland. In the academia of engineering education, most of related studies emphasize the entrepreneurship policy-making, faculty development, talents cultivation, and curriculum system, seldom discuss and research on the micro issues such as entrepreneurial culture in higher engineering education. Which kinds of cultures should entrepreneurship education of Chinese mainland uphold on earth? This issue requires in-depth exploration by the theoretical community from historical and cultural perspective. Therefore, this research intends to analyze the origins, influences and implications of entrepreneurial culture in higher engineering education in Chinese mainland through cultural speculation and historical analysis.

3. Research methods

3.1 Literature research method

The research uses the literature research method to focus on the research materials and literature results on the implementation of entrepreneurship education in colleges and universities, and to collect, sort, screen and analyze relevant data, fully interpreting the factors affecting entrepreneurship education of Chinese colleges and universities from a cultural perspective.

3.2 Historical analysis method

The research uses the historical analysis method to conduct in-depth examination of the Chinese traditional culture, discuss the factors conducive to entrepreneurship, and examine the cultural factors absorbed in Chinese traditional culture, conducive or not conducive to entrepreneurship education.

4. The Essence of Entrepreneurial Culture

In the western cultural system represented by the United States, it contains the concept of “duty” although the concept of “occupation” is already a secular vocabulary [5]. This value is deeply embedded in the American entrepreneurial culture, so its entrepreneurial activities have the cultural characteristics of sacredness and mission.

In the essence, culture is composed of four elements: utensils, institutions, behaviors, and ideas [6]. Among them, idea is the values that are rooted in and recognized by cultural carriers. In a narrow sense, entrepreneurship refers to the corporate entrepreneurship; while in a broad sense is an autonomous and innovative practice with the purpose of creating value and achieving cause. Its essence and foundation lies in innovation. On the evolution path, entrepreneurship and culture also complement each other. Entrepreneurship originates from and depends on culture, and culture promotes and drives entrepreneurship, thereby generating
a cultural form of entrepreneurship, including the ideology, value system, psychological consciousness, ways of thinking and behavior in the process of entrepreneurship.

In a general sense, the core goals of entrepreneurship education are to cultivate students’ entrepreneurial consciousness, pioneering personality and ability to create value. As the expression form of human creative value, culture has the generation and persistence structure of whole life cycle, whole chain and all links. Therefore, in the original meaning of the generation of culture, entrepreneurship education, as a person’s survival education, development education, and innovation education, is a process that can generate and cultivate life creativity and build the foundation of entrepreneurial culture. It is embedded with motivation and ability of development and innovation, innovation and entrepreneurship, and has the roles of guidance, incentives, strengthening and so on.

5. The Origins of Entrepreneurial Culture in Higher Engineering Education in Chinese mainland

Based on the dialectical logic of the cultural nature of entrepreneurial activities and the cultural foundation of entrepreneurship education, entrepreneurship education in colleges and universities should first position its ideas on the inheritance and innovation of entrepreneurial culture genes when constructing its cultural foundation [7]. Examining from the perspective of Chinese culture, the Chinese traditional culture structure with Confucianism, Buddhism and Taoism contains the cultural genes of innovation and entrepreneurship [8], such as the entrepreneurial spirit of “ceaselessly striving to be stronger” (zi qiang bu xi), the pursuing attitude of “studying the underlying principle to acquire knowledge” (ge wu zhi zhi), have supported the thousands of years’ civilization of the Chinese nation in the cultural and spiritual path. Among them, the ethical culture of Confucianism constitutes the core of traditional culture and is an important pillar of life and spiritual order. For example, Confucianism advocates “exercising benevolence”. The cultural intension of this kind of benevolence is manifested in the spirit of practicing, caring about society, and actively joining the society (ru shi). The Taoist thought advocates “inaction” or “do-nothingness” (wu wei) to express the heart of salvation. Among them, the dialectic thought that “being and not-being grow out of one another” (you wu xiang sheng) in Lao Tzu’s Tao Te Ching has important implications for entrepreneurial activities, such as starting a business from nothing, from weak to strong, from simple to complex. In the Buddhist cultural system, the concept of karma is reflected in all activities of thought and behavior. The resulting karma is not only the law of cause and effect in the natural and moral circles, but also the force that generates human cultural character.

Entrepreneurship and creativity exist in China’s 5,000-year civilization. Therefore, the hard-working entrepreneurial spirit in traditional culture should be brought to life in modern society [9]. Traditional culture is the foundation and logo of a cultural entity. Innovation, as the fundamental driving force for cultural generation, basically covers the evolution of culture. The cultural heritage of entrepreneurship mainly stems from the continuation of the essence of traditional culture. If the essence of culture is innovation and humanization, then traditional culture is the crystallization of national innovation ideas and innovation practices in history, and it is the sum of the material and spirit created and recognized by this nation.
Chinese traditional culture contains rich entrepreneurial genes, i.e. the spirit of courage to resist, willing to sacrifice, actively innovate, and striving of Chinese personal and collective myths. Compared with modern innovation, although traditional innovation is not a conscious and organized system, nor is it an obvious form of Chinese traditional culture, it is still the cultural gene and consciousness that should be advocated in the innovative and entrepreneurship education.

In these traditional cultures, there exists traditional business cultures composed of Shanxi business culture, Zhejiang business culture, Anhui business culture, Guangdong business culture and Shandong business culture, etc. Take Shanxi business culture as an example. As the head of the traditional business, by the Ming Dynasty, Shanxi business had reached the state of “business and financial resources are flourishing”. Its large scale, long duration, and wide range of fields involved, and its long-term commercial activity practice are related to the belief and spirit of individuals and groups. This belief and spirit includes not only pioneering and innovative, hard-working and frugal, but also honesty and trustworthiness, perseverance, etc., which together constitute the essence of Shanxi business culture and the source of the inexhaustible power of Jin business. Pioneering and innovative are the driving force for Shanxi business to advance, diligence and dedication are the criteria for Shanxi business to deal with, honesty and trustworthiness are the foundation of Shanxi business, and tenacity is the cornerstone of the development and growth of Shanxi business [10]. Take Zhejiang business culture as an example. The long-standing Zhejiang culture nourishes Zhejiang businessmen and has created Zhejiang economic miracles. A number of famous Zhejiang businessmen emerged, which have created “Zhejiang model”, “Zhejiang economy” and “Zhejiang phenomenon”. The core of Zhejiang business culture is reflected in the following aspects: keen insight, down-to-earth spirit, hard-working belief, the quality of pioneering and enterprising spirit, honesty-based ethics, responsibility awareness of Zhejiang businessmen [11].

6. The Influences of Entrepreneurial Culture in Higher Engineering Education in Chinese Mainland

From a rational perspective, Chinese culture can both promote and inhibit the innovative and entrepreneurship education. Confucian culture is the core and mainstream of Chinese culture. Traditional Confucianism focuses on ethics and moral education. On the one hand, it stimulates a sense of personal social responsibility; on the other hand, it also suppresses the development of personality [12], restrains people’s creative thinking, easily leading the entire society lack a culture of tolerance for failure. The Confucian education concept of “providing education for all people without discrimination” (you jiao wu lei) and “educating someone according to his natural ability” (yin cai shi jiao) emphasizes that in the process of education, teaching is differentiated according to the characteristics of different students. This kind of education concept that pays attention to the cultivation and development of students’ personality plays a role in protecting students’ imagination and creativity, and is conducive to innovative and entrepreneurship education.

The “harmonious coexistence” (he xie gong sheng) thought of Confucianism makes Chinese
culture have strong compatibility and cohesion with foreign cultures. This open and inclusive attitude is conducive to attracting talents and attracting more outstanding ideas, talents and technologies to the Chinese innovation and entrepreneurship culture. However, the ideas of “emphasizing agriculture and restraining business” (zhong nong yi shang) and “a contented mind is a perpetual feast” (zhi zu chang le) in the thousands’ years of farming culture contain unfavorable factors that hinder China’s development and allow people to use most of the funds in their hands to purchase land and real estate for safety rather than adventurously expanding reproduction or investing.

As inheriting the cultural genes of entrepreneurship education, colleges and universities should pay more attention to the dialectical innovation of entrepreneurial culture. Colleges and universities should dialectically treat those cultural genes that still exist objectively but may have both positive and negative effects when constructing the cultural ecology of entrepreneurship education. For instance, it is easy to produce a negative response in the idea of conforming to nature. It is easy to produce conservative and mediocre tendencies in the mean and harmonious thought. Even the inertia of traditional social structures based on blood relationship may have a negative impact on a free and fair innovation environment. At the same time, Chinese culture should continue to maintain an open attitude, not only recognize and absorb the concepts of equality, freedom, fraternity, and the rule of law from the international perspective, in order to realize the innovation of the concept of entrepreneurial culture, but also prevent the utilitarian trend in economic crisis, environmental crisis, energy crisis and moral crisis.

7. The Implications of Entrepreneurial Culture in Higher Engineering Education in Chinese Mainland

7.1 Excavating the values of Chinese traditional business cultures

In the modern context, colleges and universities need to actively strengthen traditional cultural education, especially to integrate the entrepreneurial factors of traditional Chinese culture into entrepreneurship education, so as to effectively translate them into the source of value and intrinsic motivation for entrepreneurship, stimulating students’ consciousness and potential for entrepreneurship. In the cultivation of students’ entrepreneurial awareness, spirit and skills, college teachers should attach great importance to the deep integration of various traditional business cultures and innovative and entrepreneurship education, and explore teaching methods that are in line with the training goals of innovative and entrepreneurship education, so as to give full play to the role of traditional business culture in improving college students’ innovative and entrepreneurship ability.

7.2 Recognizing the Value of entrepreneurship education

China is in the best period of modern transformation. This is also the cultural situation faced by Chinese universities. The identification of values in the process of entrepreneurship education needs to be strengthened according to the cultural situation. The ethical and moral condition of a society is often a “barometer” that reflects the social value identity and cultural
status, which is especially evident in traditional Chinese culture. In the process of entrepreneurship education, colleges and universities should establish and always adhere to the cultural value identity orientation of entrepreneurship in order to form the endogenous motivation and value direction that drive entrepreneurship. For example, Tsinghua University has targeted high-level innovation and entrepreneurship education, realized value recognition by covering all students with innovation and entrepreneurship education. One of the important measures is to open a general course of innovation and entrepreneurship aimed at cultivating innovative thinking methods, pioneering spirit and entrepreneurship throughout the university, and gradually cover all students as a core course of general education [13].

7.3 Exerting the functions of modern university culture

Cultivation of entrepreneurial culture is an important way to improve the effectiveness of college students’ innovative and entrepreneurship education, and to deeply create an atmosphere of innovation and entrepreneurship in the whole society. In the university setting, we must focus on promoting its cultural value. Modern university culture can be based on four aspects: physical culture, institutional culture, behavioral culture and spiritual culture [14]. The physical culture can convey certain entrepreneurial values through the campus environment, facilities, sculptures and buildings, and trigger students to accept certain information stimuli. The optimization of physical culture should be achieved by relying on educational mechanisms. The humanization path of institutional culture includes four basic practice paradigms: the behavior-oriented system; the behavior range system; the space-time system of action; the domestication system. The humanization practice of behavior culture is mainly realized through two ways: imitating the behavior of teachers and imitating the behavior of peers. The humanization practice of spiritual culture should mainly do a good job of affecting the environmental atmosphere at three levels, i.e. social and environmental effect, public opinion’s effect, campus activities’ effect. Educators must make full use of the campus activity platform to actively organize campus activities related to scientific and technological innovation, cultural innovation, simulated entrepreneurship, etc., to integrate entrepreneurship into campus cultural life.

8. Conclusions

Entrepreneurship education in higher engineering education requires examination from a historical and cultural perspective. The Chinese traditional culture of Confucianism, Buddhism and Taoism contain the cultural genes of innovation and entrepreneurship. Chinese excellent traditional culture contains rich entrepreneurial genes. In these traditional cultures, there exist various traditional business cultures. However, Chinese culture can both promote and inhibit the innovative and entrepreneurship education. When inheriting the cultural genes of entrepreneurship education, colleges and universities should pay more attention to the dialectical innovation of entrepreneurial culture. Colleges and universities in Chinese mainland should rationally reflect on Chinese traditional culture, inherit the genes of Chinese traditional culture, excavate the value of traditional business culture, strengthen the value recognition of the entrepreneurship education, and promote the value of modern university culture, so as to build the cultural foundation of entrepreneurship education in colleges and
universities.

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