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The Construction Path of Innovation and Entrepreneurship Education in Secondary Vocational Schools from the Perspective of Maker Era

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Abstract: *Mass entrepreneurship and innovation are the way to prosper the country and strengthen the people. The maker culture and the country's development resonate at the same frequency and complement each other. In-depth study of the innovation and entrepreneurship education in secondary vocational schools under the background of the maker era has important theoretical significance and contemporary value for promoting the transformation of macro strategy in China. This article uses research methods of literature and logical analysis to accurately research and judge the innovation and entrepreneurship education of secondary vocational schools in the maker age, and propose a series of development measures according to the requirements of the development of the times. The development of innovation and entrepreneurship education in secondary vocational schools provides useful help and important reference.*

Keywords: *maker era, innovation and entrepreneurship, secondary vocational schools*

1. Introduction

With the continuous deepening of China's science and technology field, China's international competitiveness is also increasing, and education is the foundation of a strong country, so in recent years, education reform has entered a critical stage of continuous release of productivity. How to coordinate with the fundamental changes in China's macro strategy has become an important support for China's education reform at this stage. China's national leaders have repeatedly put forward the development strategy of the era of "mass entrepreneurship and innovation" on various occasions, which has promoted and accelerated the formation and development of China's "maker" cultural atmosphere, and has contributed to the development of China's innovation and entrepreneurship education played a positive role in promoting. Therefore, exploring the development of innovation and entrepreneurship education under the background of "maker" culture in the new era has important theoretical significance and practical value.

2. The positive effect of maker culture on innovation and entrepreneurship education in secondary vocational schools

With the continuous improvement and development of the maker culture in China, the current secondary vocational schools have achieved many positive results in carrying out innovation and entrepreneurship education, but there are also many problems. The original meaning of "Maker" is "Maker". Chris Anderson pointed out that "Maker" is "not aiming at profit, but using the Internet, 3D printing and open source hardware and other technical means to work hard to transform ideas into reality and be creative a group of people". In layman's terms, a maker is a group of people who are committed to innovation and creation [1]. The maker culture usually refers to individuals or groups who are interested or in order to realize the value of individuals or organizations, through a certain informal, networked and shared learning social environment, encourage the application of new technologies, explore different fields and different from the traditional way of working between [2]. It can be seen that the maker culture is a different way of working from the traditional, which contains many aspects, such as innovative thinking, innovative working methods, innovative management and so on. As a positive culture pursuing innovation and collaboration, the maker culture has its unique characteristics such as strong practicality, strong target, strong authenticity, etc., which determine that it has an important role in promoting innovation and entrepreneurship education in secondary vocational

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schools.

Maker culture helps to create an atmosphere of innovation and entrepreneurship. In the innovation and entrepreneurship education of secondary vocational schools, the first problem to be solved is how to create an innovation and entrepreneurship atmosphere, give full play to the advantages of environmental education, and enable students to give full play to their subjective initiative and actively participate in a strong innovation and entrepreneurship environment to innovation and entrepreneurship activities [3]. Once this atmosphere is shaped, students will not only have a rational understanding of innovation and entrepreneurship, but their passion for innovation and entrepreneurship will also be ignited, which will surely make innovation and entrepreneurship education embark on a virtuous circle. The promotion and popularization of maker culture focuses on this point. The popularization and promotion of maker culture, especially the construction of maker space in secondary vocational schools, and the support of national policies, will inevitably contribute to creating an atmosphere of innovation and entrepreneurship play an important role. In addition, we must also realize that innovation and entrepreneurship education can't always focus on the results. We must also see that students get a higher level of spiritual satisfaction and the realization of self-worth in the process of innovation and entrepreneurship, and ultimately promote their own all-round development is the ultimate goal of innovation and entrepreneurship education. From this level, the spirit of maker culture meets the requirements of innovation and entrepreneurship education in secondary vocational schools. Because the strong practical characteristics of maker culture encourage students to "learn by doing", by setting specific problem situations, students can observe, model, and explore in real problem situations, and finally solve problems. In this process, because the students personally participated in the discussion, analysis and answering of the problem, they not only learned knowledge, but also experienced the joy of researching the problem [4].

Maker culture helps the innovation and entrepreneurship education of secondary vocational schools to move from theory to practice. The essence of innovation and entrepreneurship education in secondary vocational schools is to preview the society in advance to cultivate the spirit and ability of innovation and entrepreneurship. Only when students have the ability and spirit of innovation and entrepreneurship can the innovation and entrepreneurship education of secondary vocational schools be considered successful. The enhanced authenticity of the maker culture can solve this problem well. The teaching advocated by the maker culture is very different from the traditional. Traditional teaching also advocates exploratory teaching and question-based teaching, but the interaction of these teachings is often "script-based teaching", that is, in the traditional exploratory and question-based teaching. In teaching, students are in a false environment created by the teacher. The teaching interaction according to the teacher's plan can also mobilize the students' learning enthusiasm to a certain extent, but most of the time it is a collective work between the students and the teacher performance". Unlike traditional education, maker education is based on real projects. Students encounter real problems in projects. In order to solve these problems, students must contact what they have learned to study, discuss, and train students to multifaceted.

3. The construction path of innovation and entrepreneurship education in secondary vocational schools in the maker era

3.1 Strengthen cooperation between industry and schools, and increase the conversion rate of innovation and entrepreneurship education results

The key to innovation and entrepreneurship education is to increase the enthusiasm of everyone, especially the enthusiasm of educators and educated. The improvement of enthusiasm depends on the degree to which the achievements of innovation and entrepreneurship are recognized by the society. The two are in a proportional relationship, that is, the greater the society's recognition of innovation and entrepreneurship results, the more active participants will be, thereby creating more achievements that can be recognized by the society, thus forming a virtuous circle. In order to increase the recognition of the achievements of innovation and entrepreneurship by the society, it is necessary to increase the conversion rate of the achievements and form a relatively mature school-industry cooperation model. The so-called "industry-school-research" cooperation refers to the establishment of enterprises, school, scientific research institutes, and the government based on their respective development strategic goals and strategic intentions, accelerating technological innovation, realizing a common vision, and combining each other's superior resources to formal but non-merged partnership for mutual development [5]. Industry-school-research cooperation is one of the important ways to promote the

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transformation of scientific and technological achievements. Therefore, this requires secondary vocational schools to actively seek cooperation with third parties, break the traditional cooperation model, and promote the integration of innovative and entrepreneurial projects with society.

First of all, secondary vocational schools must break the traditional single model of innovation and entrepreneurship to technology transfer, and gradually move towards the trinity of technology, capital and talents, and jointly build a talent training model to promote the development of innovation and entrepreneurship education. Secondly, secondary vocational schools can also introduce enterprise development projects through fixed-point linkage and cooperative joint construction. For example, secondary vocational schools can sign joint construction agreements with enterprises to establish innovation and entrepreneurship bases for students in the enterprise. It is also possible to introduce enterprise talents and technologies, and cooperate in development, so that students can directly participate in the development of the project. Finally, secondary vocational schools should also adjust the distribution of benefits in cooperation. Interest is the driving force of all production activities, and it is even more important for cooperative innovation. Secondary vocational schools must continuously improve the profit distribution mechanism in the cooperation of industry, school and research, so as to maximize the driving force of interests and promote the development of innovation and entrepreneurship education.

3.2 Actively promote the construction of maker culture and enrich the ways of innovation and entrepreneurship education

The construction of maker culture requires the cooperation of schools, government and society. However, secondary vocational schools are the main force for cultivating school students' innovation and entrepreneurship. This requires secondary vocational schools to take the initiative to take the initiative, provide platforms, establish institutions, and guide students to enter. First, we must actively create a maker cultural atmosphere [6]. Whether students can truly participate in innovation and entrepreneurship has a lot to do with whether secondary vocational schools can create a strong atmosphere of maker culture. This requires secondary vocational schools to mobilize the enthusiasm of students through various means. For example, secondary vocational schools actively build platforms and provide a normal channel for students to display their innovative works. Second, we must actively reform the evaluation system to guide the development of maker culture. Innovation and entrepreneurship education is different from traditional education. It can't be evaluated unilaterally by the traditional result-oriented evaluation method, let alone whether it is successful or not simply based on whether the innovation and entrepreneurship competition is awarded. This requires secondary vocational schools to coordinate the process of innovation and entrepreneurship and establish a complete scientific evaluation mechanism that emphasizes both process and results. Only when the evaluation mechanism is scientifically rationalized can the positive role of evaluation be brought into full play.

3.3 Promote the integration of professional education and innovation and entrepreneurship education, and enhance the pertinence of innovation and entrepreneurship education

One of the biggest obstacles for students in secondary vocational schools in the process of entrepreneurship is the low level of innovation and technological content of students' entrepreneurial projects, a high degree of duplication and substitution, and long-lasting benefits; for the vast majority of students, they have not experienced through systematic and scientific research ability training, there are great deficiencies in scientific research, practical transformation, and scientific research ability. Therefore, it is necessary to actively integrate professional education and innovation and entrepreneurship education. Through integration, relying on the resources of the instructor, encourage and drive school students to participate in scientific research as early as possible.

First, secondary vocational schools should actively cultivate the concept of integrating professional education and innovation and entrepreneurship education, so that everyone can realize the importance of the organic integration of professional education and innovation and entrepreneurship education. Promote the organic integration of innovation and entrepreneurship education and professional education, meet the needs of economic and social development, conform to the law of talent training, and also reflect the important functions of the school. The organic integration of the two will help students in secondary vocational schools to establish a spirit of innovation and improve their practical ability. The organic integration of the two can realize the coupling and linkage of innovation and entrepreneurship knowledge and professional knowledge, forming a situation where professional

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knowledge is used for innovation and entrepreneurship, so that professional knowledge can be more directly and efficiently integrated into social production practices.

Second, secondary vocational schools should strengthen top-level design and actively explore the integration of professional education and innovation and entrepreneurship education courses from the perspective of curriculum construction. Because no matter what kind of education, the ultimate goal is to cultivate talents needed by society and promote the overall development of students. One of the important ways to train talents is curriculum construction. In addition, innovation and entrepreneurship education is a systematic project. It is necessary for secondary vocational schools to specifically set up innovative and entrepreneurial courses that effectively integrate with each major according to the characteristics of their own school's professional settings, and in the course of curriculum integration, they must also take enterprise research and other methods to fully consider the requirements of the talent demand side. Only by considering the requirements of students, schools, and enterprises can a comprehensive scientific curriculum be formulated.

3.4 Coordinate and promote the construction of innovation and entrepreneurship mentor team in the era of maker

The quality of innovation and entrepreneurship education tutors directly affects the effect of innovation and entrepreneurship education. In the new era, actively promoting the construction of a new innovation and entrepreneurship mentor team in the maker era is the key to improving the quality of innovation and entrepreneurship education in secondary vocational schools. Strictly control the quality, and select high-quality innovation and entrepreneurship instructors from the source. Since China's innovation and entrepreneurship education started relatively late, there is a relatively lack of teachers for innovation and entrepreneurship education. This has led to the practice of patching up teachers in secondary vocational schools to develop innovation and entrepreneurship education, which has affected the development of innovation and entrepreneurship education to a certain extent. This requires secondary vocational schools to start from the source, strictly control the quality, and consciously raise the requirements for the selection and employment of innovation and entrepreneurship tutors. Only when the quality of the teaching staff is improved can it be possible to further promote the development of innovation and entrepreneurship education in secondary vocational schools. Provide a variety of learning and further training channels for innovation and entrepreneurship tutors, and support teachers' self-growth from a policy perspective; for the tutors that have been hired, secondary vocational schools should actively adopt a variety of methods to encourage the tutors to follow-up self-learning and growth.

4. Conclusion

All in all, the maker culture, as an inevitable product of the information age, represents the main theme of the development of the times and also represents the vane of this talent training. In recent years, through theoretical research and practice, China's innovation and entrepreneurship education has made considerable progress, but we need to recognize the situation of the times and future development trends. There is still a lot of room for innovation and entrepreneurship education in secondary vocational schools and expand the platform. This requires the joint efforts of the state, society and schools to promote the development of innovation and entrepreneurship education in China's secondary vocational schools.

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