ATLANTIS PRESS

Advances in Economics, Business and Management Research, volume 82

International Conference on Management, Education Technology and Economics (ICMETE 2019)

The Difficulties and Countermeasures of Talent Cultivation in Applied Undergraduate Colleges Against the Backdrop of "Creator Education"

Ke Jianbo
Huali College Guangdong University of Technology
Guangzhou, China

Ye Shitong*
Huali College Guangdong University of Technology
Guangzhou, China

***Abstract*—Against the Backdrop of "mass entrepreneurship and innovation", the concept of maker education provides a new perspective for the cultivation of applied talents. Based on the ten characteristics of the application-oriented talent maker, the classification criteria and connotation of "creative talents" have been established for the industrial needs of the docking area. By focusing on the five connotations of "creator-style education", we explore the reconstruction of applied talent training mode.**

Keywords—Difficulties; Countermeasures; Talent; Cultivation; Applied undergraduate colleges; "Creator education"

I. INTRODUCTION

The 21st century is an information age in which information technology is developing at a high speed and digital technology is deeply rooted in people's lives. In this era, a concept of maker movement based on entrepreneurship, design, production, sharing and communication came into being. In 2015, Premier Li Keqiang proposed the "Public Entrepreneurship and Innovative Innovation" in the government work report at the Third Session of the 12th National People's Congress [1-2], which enabled the makers and makers to flourish. The maker movement and maker education not only bring a new perspective to the development and innovation of education, but also point out a new direction for optimizing the training mode of applied undergraduate colleges and improving the quality of education.

At present, the cultivation of applied talents in local universities in China is facing a new situation change. There are more than 1,000 undergraduate colleges and universities in the country, 90% of which are local colleges and universities. They have become the main battlefield for talent training. Most of them are oriented to the cultivation of applied talents and face the regional economic and social development. Under the background of new models, new industries and new formats, the state has proposed innovation-driven development strategies and a series of new industrial development strategies, focusing on cultivating new economic growth points and focusing on s[1]upporting the development of strategic emerging industries such as mobile Internet [3-4]. Internet finance has sprung up everywhere, new businesses such as e-commerce and logistics express have grown rapidly, and cultural and creative industries have flourished. Many "creators" stand out.

Maker points out people who are interested in their interests and hobbies and who are trying to turn their ideas into reality. Maker is a kind of behavior, it is a kind of culture, a kind of spirit, and Maker provides more fresh ideas and more creative products for the industry in which it is located. In 2015, Premier Li Keqiang first mentioned the makers in the government work report, "to make many creators stand out", and then put forward the national strategy of "mass entrepreneurship and innovation". Therefore, the makers are widely concerned by the public in Chinese society.

II. MAKER AND MAKER EDUCATION

Maker originated from the English word "maker" originally meant "creator" or "manufacturer". As a concept, Maker was first proposed by Chirs. Anderson of the United States in "The Maker: The New Industrial Revolution". "Creator is a group of people who pursue innovation and strive to use various digital, intelligent and open source tools. People whose ideas have become reality." After the word maker was introduced, it was valued by the US government. In November 2009, US President Barack Obama called for "every student should be a creator, not just a consumer" at the Education Innovation Conference. In 2011, the United States launched a maker. Educational activities, in 2015, held the second White House Maker Conference to continue to promote the operation of Maker [5]. Today, Maker is not only ubiquitous in all areas of the United States, but also affects the world by sweeping the globe. In this context, a development that is consistent with the development of the maker movement aims to reshape the educational concept, emphasizing the creation of creative ideas into a new form of education through hands-on operation - Maker Education came into being.

Maker Education is a kind of integrated information technology, adhering to the "open innovation, inquiry experience" education concept, "creating middle school" as the main learning method and a new type of education model for the purpose of cultivating various innovative talents. Compared with traditional education based on knowledge education, Maker Education is a new ability-oriented education that adapts to the development of the knowledge economy era.

Education research project of Guangdong Education Research Institute,2014(GDJY-2014-C-b033)

Guangdong Province Undergraduate Higher Education Teaching Reform Program (YJGH (2016) No. 236).

III. The Educational Concept Based on Maker Culture

Under the new situation of national strategy such as "mass entrepreneurship and innovation", in the trend of "double first-class" construction of higher education, how to reform the application-oriented talent training mode of local colleges and universities is an objective problem in front of local colleges and universities. The ability of students to develop their ability and quality cannot keep up with the new requirements of rapid industrial development has become one of the common problems common in local colleges and universities. The core is how to give full play to the subjectivity of students. One of the solutions is to carry out the education of makers and promote the reform of the training mode of applied talents in local universities. Maker education usually has two kinds of understandings. One is “Creator's Education”, which aims to cultivate creative talents. It is usually possible to set up a maker space by setting up a special maker course, equipped with a professional instructor. The practice is implemented; the other is “creator education”, which aims to apply the concept and method of makers to transform traditional education. It is usually necessary to integrate the “hands-on, practical experience” concept advocated by the maker movement into the traditional The whole process of talent cultivation and the development-based learning. We believe that for application-oriented talents, maker-based education based on the concept of makers is a systematic project. It should focus on the connotation of maker education, and need to cultivate the concept of cultivating guests, creating culture, creating teachers, and creating education organizations. All aspects of personnel training are coordinated. Maker education is not only a matter of education, but also a seamless integration of family education, social education and school education. In particular, it requires the participation of various social forces (such as enterprises, associations, non-profit organizations, research institutions, etc.). The educational concept based on "cultivation of cultivating customers" is a brand-new educational perspective. It is not to cultivate every student into a creator, but to take the students into an all-round growth and take the initiative to change the educational perspective and create each one creatively. Students are considered to be “creatives” to develop and make them possess the characteristics of the application-oriented talents. How to carry out the training concept of "depending on each student as a maker", we must do a good job in the top-level design of the school's talent training, and carry out a large-scale discussion of the whole school's educational thoughts through multiple types and levels, so that the concept of talent education is rooted in all teachers, Students and teaching managers are in the heart and throughout the process of talent development. At the same time, it emphasizes the “main position of makers”, and focuses on the core of innovation and entrepreneurship and the cultivation of practical ability. By exerting the innovation potential and subjective initiative of “Creator”, it implements teaching reform, especially in shaping students' innovative quality and stimulating Students have made breakthroughs in the entrepreneurial potential, enabling students to have the awareness and ability of creating customers, to achieve "everyone is a customer, can be practiced everywhere, and can be transformed from time to time."

IV. Establish the Classification Criteria for Applied Talents Based on the Characteristics of Makers

In view of the cultivation of applied talents in local universities, what kind of qualities can they be called makers? Or, what qualities does the maker have? Through extensive research and a large amount of research, we put forward the ten "creative" characteristics of local college applied talents, namely, firm belief in talent, strong sense of social responsibility, clear self-awareness, original innovation motivation, and outstanding Innovative spirit, active innovative thinking, solid professional knowledge, outstanding practical ability, strong resistance to stress and good team spirit.

Application innovation. Applying innovative talents, aiming at cultivating and applying innovative talents, through the establishment of a top-notch innovative talent training model. 2% of outstanding students were selected from all the majors in the school. Through the establishment of Zhangye College, Football College and International Nursing College, the development of top-notch innovative talent training mode was explored. This model adopts one-on-one academic tutors, full-time guidance, independent choice of majors, overseas study tour system and other individualized personnel training programs to stimulate students' creative passion, cultivate students' sense of innovation, innovation and innovation, and cultivate first-class applied research talents. .

Industry excellence. The industry's outstanding talents are aimed at cultivating elites in the industry and are built by building a model of excellence in education. Facing the industry by building a multi-level (national, provincial and school) multi-category (excellent education program covering outstanding engineers, outstanding agricultural and forestry talents, outstanding legal talents, outstanding teachers, excellent doctors, and outstanding journalism professionals) In accordance with the Washington Protocol's results-based international standards for talent development, the “3+X” two-stage integrated learning model for on-campus learning and corporate learning is used to open up a school-enterprise joint training channel, reconfiguring the curriculum system and teaching content to foster adaptation areas. Industrial elites required for industrial development.

Industry composite type. The industry's compound talents are aimed at cultivating key talents in the industry and are realized through the construction of a large professional platform talent training model. Closely linking the regional economic pillar industries, advantageous industries and emerging future industrial development needs, breaking the disciplines, giving full play to the advantages of comprehensive universities, strengthening multidisciplinary cross-infiltration and deep integration, and creating cultural and creative industries and health industries that are connected with regional industries. The automobile industry, electronic information industry, international cooperation and teacher education "six major professional platforms", highlighting the integration of production and education. The same platform

implements large-scale enrollment and large-scale training, and implements the “platform + module + plug-in” curriculum system to open up the talent training path among the various majors in the platform. Establish a close connection mechanism with the industry, enhance students' comprehensive practice and application ability, meet the needs of the industry for compound talents, and cultivate key talents in the industry.

V. THE STATUS QUO OF THE IMPLEMENTATION OF MAKER EDUCATION IN APPLIED UNDERGRADUATE COLLEGES

As a new type of education phenomenon and education type, applied undergraduate colleges have a high degree of development space and development potential due to their high degree of talent training objectives and social needs, and have received widespread attention from the society. At present, one-third of newly-built undergraduate colleges in China have clearly proposed the application-oriented undergraduate as their development direction. In order to improve their own competitiveness, applied undergraduate colleges must optimize their structure, strengthen their characteristics, focus on innovation, and cultivate applied talents that meet the needs of the country and economic and social development. As a new teaching mode, Maker Education not only meets the needs of applied undergraduate emphasis on innovation, but also on the development of students' technical application ability, and provides a brand new for the development and innovation of applied undergraduate colleges. Perspective. Faced with the wave of “double innovation”, many applied undergraduate colleges have initiated and implemented Maker education. Although they have accumulated some experience in cultivating college students' practical ability and innovation and entrepreneurship, they are in the orientation of Maker education, curriculum, There are still many problems in the construction of the team of Maker Tutors.

Although the maker movement has developed rapidly in the world, it is still in the development stage of applied undergraduate colleges in China. The concept of maker education also copyes western theories and has not yet formed Chinese characteristics. In many applied undergraduate colleges, Maker Education is still in its infancy as a new teaching model. The positioning of Maker Education is still vague and the benefit is relatively narrow. This is far from the goal of introducing Maker Education in higher education. .

Although some applied undergraduate colleges have realized that Maker Education can update educational concepts, innovate practical teaching models, and supplement the shortcomings of traditional practice teaching, but lack the initiative and ideas under the control of inert thinking.

Although some applied undergraduate colleges have established the Maker Education course, the innovative entrepreneurial skills taught as an independent course only stay at the operational level, can not be compatible with the talent training system, lack of combination of different disciplines, no professional, different interests. Courses at different levels of Maker's needs lack a complete creator education curriculum system. This leads to the fact that the course cannot be linked to the majors that students have learned. After learning the Maker Education course, students will spend more time and energy to integrate professional knowledge and innovative entrepreneurial knowledge.

As the main force of Maker Education, Maker Education Tutor is not only the instructor of Maker knowledge, but also the organizer of Maker Project and Maker Activity. It can be said that the level of mentor's ability determines the outcome of Maker Education implementation. Maker Education puts higher demands on its faculty team. The instructor must not only have relevant theoretical knowledge and professional background, but also have certain entrepreneurial and practical experience. However, at present, most applied undergraduate colleges do not have full-time teachers who specialize in maker education. Maker education tutors are often served by professional teachers or managers with successful entrepreneurial experience. Although the professional teachers have rich theoretical knowledge and teaching experience, but the practical experience is insufficient, the managers who lack the practical experience of innovation and entrepreneurship have the rich experience but lack the teaching skills, and can not truly meet the students' innovative and entrepreneurial requirements. It is not conducive to the continued development of Maker Education.

VI. THE COUNTERMEASURES FOR THE CULTIVATION OF TALENTS IN APPLIED UNDERGRADUATE COLLEGES IN THE ERA OF MAKERS

Applied undergraduate colleges as an important part of China's popular education, as long as they learn and participate in Maker education with a positive and open mind, through the accurate positioning of Maker education, strengthening the curriculum system construction, and building a professional team of mentors, can truly achieve The goal of Maker Education is to cultivate more application-oriented talents with innovative capabilities.

Applied undergraduate colleges are different from traditional research-based and vocational universities. Their orientation is to train higher-tech applied talents that meet the needs of practice. The goal of the school is to adapt to the needs of society, and its curriculum and teaching content system are based on “application”. The main purpose and characteristics are to pay attention to the cultivation of students' technical application ability, and the emergence of Maker Education just meets the needs of talent training in applied undergraduate colleges. Therefore, only by recognizing the value of Maker Education and deeply understanding its connotation can we accurately locate and provide protection for the application of innovative and innovative talents.

The Maker course is a comprehensive practical activity course that integrates and optimizes interdisciplinary knowledge and abilities by focusing on project activities, topic exploration or problem solving. The maker course system is the guarantee and foundation for the application of undergraduate colleges to cultivate students' ability of innovation and entrepreneurship. Whether it is complete or not will directly affect the realization of the goal of the invention education in applied undergraduate colleges. In order to build a complete maker education curriculum system, in addition to

learning from relevant foreign experience, we must integrate the concept of maker education into the existing curriculum teaching, so as to make up for the shortcomings of traditional teaching and realize the goal of maker-style education. In addition, it must be linked to the profession, strictly fit the talent training system, design and develop the maker courses that adapt to different disciplines, different professions and different interests, so as to realize the cultivation of professional talents.

The smooth development of Maker Education activities is inseparable from the division of labor and collaboration of team members. The high-level team of Maker Tutors is an important guarantee for application-based undergraduate colleges to deepen the reform of innovation and entrepreneurship and improve students' ability to innovate and start businesses. It is necessary to build a team of dedicated and integrated Maker Education Tutors, in addition to integrating teachers and experts with different academic backgrounds, different knowledge systems, similar interests, and strong practical skills to form an interdisciplinary tutor team. Formulate the cultivation mechanism of the Maker Tutor, encourage teachers to learn the concept of Maker education, motivate teachers to study the pedagogical teaching method, teaching strategies, and enhance the training ability of teachers' Maker education theory and practice.

VII. CONCLUSION

In the context of the current "mass entrepreneurship, innovation", for application-oriented undergraduate colleges, only fully recognize that maker education is an important way to deepen the reform of innovation and entrepreneurship education in higher education institutions, and how important it is to cultivate innovative entrepreneurs. In order to explore the implementation path of Maker Education suitable for the development of the times, we will train qualified application talents for the country.

REFERENCES

[1] Fu Xujian. Coupling and Path of Talent Cultivation and Double Education in Applied Undergraduate Colleges [J]. Journal of Jishou University (Social Science Edition).2016.06.

[2] Zhou Yang. College Maker Education Based on Activity Theory: Factor Structure and Practice Strategy [J]. Journal of Heilongjiang Institute of Technology (Comprehensive Edition).2017.11.

[3] Wang Fang. Liu Wantai. Qin Qin. Luo Shenghua. Research on the Training Mode of Higher Vocational Talents Introducing “Creator Education” [J]. Education Modernization . 2017.11.

[4] Pu Ming. Research on the Construction of Innovation and Entrepreneur Talents Training Model in Applied Undergraduate Colleges [J]. Adult Education.2012.06.

[5] Zhang Liangfeng. Liu Yingchun. Liu Shuzhong. Research and Practice of Applied Undergraduate Talents Training Model Based on the Combination of Industry, Education and Research——Taking Hunan Institute of Engineering as an Example [J] Journal of Hunan Institute of Engineering (Social Science Edition).