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An Analysis of the Teaching Reform of Ceramics in Colleges and Universities from the Perspective of Innovation and Entrepreneurship*

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***Abstract*—At present, many colleges and universities are working hard to cultivate innovative talents and create a new force of "widespread entrepreneurship and innovation". Innovation and entrepreneurship contribute to the sustainable development of colleges and universities, and the cultivation of the spirit of innovation has become the greatest possibility of entrepreneurship practice. As an important part of art education innovation and entrepreneurship in colleges and universities, ceramic teaching is the key. How to integrate innovation and entrepreneurship education with ceramic professional and how to cultivate innovation and entrepreneurship ability of students is the key to explore the teaching reform of ceramic in colleges and universities from the perspective of innovation and entrepreneurship.**

Keywords—innovation and entrepreneurship; ceramic teaching; reform

I. INTRODUCTION

In September 2014, Premier Li Keqiang proposed at the Summer Davos Forum that "widespread entrepreneurship and innovation", "innovation and entrepreneurship" has become a hot issue and focus of the whole society. In May 2015, the General Office of the State Council issued the "Implementation Opinions on Deepening the Reform of Innovation and Entrepreneurship Education in Colleges and Universities", which clearly proposed nine main tasks and measures, including "improving the quality of talent training, the mechanism for training innovative talents, improving the curriculum system for innovative and entrepreneurship education, reforming teaching methods assessment methods, and strengthening the practice of innovation and entrepreneurship". More and more attention has been paid to the innovation and entrepreneurship education in colleges and universities; it is an important task for the sustainable development of colleges and universities to cultivate the innovation spirit and entrepreneurship ability. In fact, innovation and entrepreneurship play a very important role in social progress, the development of colleges and universities and the growth of students. Among them, innovation and entrepreneurship education bear the brunt of it, and school education plays an irreplaceable role. Colleges and universities should provide students with more education and guidance on innovation and entrepreneurship, regardless of subject category, and provide students with more space and opportunities for innovation and entrepreneurship. Ceramic as an important subject in the field of art, how to make students still develop better in their own major after graduation, it is crucial to explore the reform of ceramic teaching from the perspective of innovation and entrepreneurship. Therefore, ceramic education should break through the shackles of conventionality, combine the current social situation, understand the needs of the society, keep up with the pace of the times, and aim at innovation and entrepreneurship, reasonably arrange ceramic courses in the teaching concept, so that the ceramic major in colleges and universities can continuously innovate in teaching ideas, teaching contents, teaching methods, teaching equipment, and so on, improve the teaching quality, comprehensively improve the comprehensive quality of students, cultivate students to start their own businesses, alleviate the pressure of employment, and ultimately contribute to the country and society.

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II. THE NECESSITY OF INNOVATION IN CERAMIC TEACHING AND THE POSSIBILITY OF ENTREPRENEURSHIP IN CERAMICS

A. The Necessity of Innovation in Ceramic Teaching

Pottery is the crystallization of Chinese wisdom, which is itself an innovation. Ceramic is the crystallization of the wisdom of the Chinese nation, which is a unique innovation in social development. Its appearance witnessed the progress of human civilization, and brought material and spiritual enjoyment to people's life. As early as when humans knew how to turn earth into pottery with fire, they had begun creative activities. With the advancement of human civilization, ceramic is constantly innovating in terms of shape, material and decoration. While bringing convenience to people's life, it also promotes the development of the

whole art field and becomes an important part of the excellent traditional Chinese culture. Nowadays, ceramic is still carrying on creative inheritance and innovative development. The research and application of new materials, the re-creation of techniques, the renewal of creative ideas, from "innovative ceramic" to "ceramic innovation" and so on, all reflect the creativity and innovation of ceramic.

The teaching of ceramic is the foundation of the inheritance and development of Chinese culture, which is also a process of innovation and development. There are many ways to inherit Chinese ceramic culture, such as master-apprentice inheritance, school education, special training and so on. As the medium of knowledge and culture communication, colleges and universities can impart ideas, skills and so on, which is an important way to inherit and innovate ceramics. The students majoring in ceramics in colleges and universities can inherit and carry forward the excellent traditional ceramic culture of China, so a good teaching system of ceramic is the basic creation of the inheritance of Chinese culture. In the era of knowledge-based economy, innovation and entrepreneurship need solid basic knowledge, and ceramic teaching should shoulder this great responsibility. In the new era of rapid development of society, university education should keep up with the pace of the times, constantly innovate, constantly meet the needs of society, and train more outstanding talents for the country and society. The history of ceramic education in colleges and universities is not far away. With the resurgence of ceramic culture in China, the establishment of ceramic major in colleges and universities is more and more extensive, followed by the problem of how to cultivate innovative talents in ceramic teaching. The establishment of a complete curriculum education system, including innovation and entrepreneurship education, from theory to practice, all of which will better serve the inheritance of Chinese culture, and will certainly be a process of innovation and development.

The development of the times has created conditions and space for the development of ceramics. Innovation is the reality that ceramic teaching must face. With the continuous progress of human society, all kinds of resources are more abundant. The development of the times also creates more convenient conditions and space for the development of ceramics. In the new situation, both ceramic daily necessities and ceramics are closely connected with people's lives. Both ceramic artisans and ceramic artists have played their own advantages in the favorable space provided by the country, creating more and more ceramic fine products that are integrated with ornamental and practical. China is rich in resources, and each region creates unique ceramic daily necessities and artistic masterpieces based on its own materials and cultural resources. It plays the advantages of local resources and constantly innovates in ceramic materials, modeling, firing, technology and other aspects. Innovation in ceramic teaching in colleges and universities is bound to be at the forefront, which is also the reality that the society must face today. Without innovation, there will be no progress, and without innovation, it will be gradually eliminated by society. The teaching of ceramics in colleges and universities should incorporate innovative ideas, which also will promote the development of ceramics in colleges and universities, serve the society and the country at the same time, and cultivate more innovative talents for the society.

B. The Possibility of Entrepreneurship in Ceramics

Professional skills of ceramic provide conditions for students to start their own business. The teaching of pottery art is to cultivate the inheritors of excellent Chinese culture, carry forward the ceramic culture, and provide technical energy and economic benefits to society and the country. As an application-oriented discipline, ceramic major can not only expand the field of the students in the art, but also provide more and better learning conditions to the students in the technology, so as to train students to become artistic talents with both theory and practice. In the process of ceramic teaching, the school provides enough space and resources for students. As the most basic condition of entrepreneurship, ceramic skills can directly transform what they have learned into achievements. The school provides a platform and opportunity for entrepreneurship. Students can directly take their own creative ideas and creative programs as the basic conditions for entrepreneurship. In addition to showing students the conditions for their skills, they can also truly connect with society and understand the advantages and risks of entrepreneurship as early as possible.

Ceramics can meet the material and spiritual needs of people's life. At present, with the continuous improvement of living standards of people, the pursuit of a better life is not only about material enjoyment, but also spiritual pursuit. As an elegant and simple art form, ceramics has been sought after by many people. The process of ceramic production can edify sentiment. More and more personal ceramic products have entered thousands of households. Ceramics has been the object of people's collection for a long time. It is not only a symbol of nobility, but also brings the ancient ceramic culture into thousands of households. Ceramics are easy to get close to life, and everyone is easily contact with ceramics, so that there will be more opportunities for students to start their own business. For ceramics entrepreneurship, it can be done from the perspectives of handwork, finished product sales, parent-child experience, and so on. Meanwhile, college students can adopt effective methods to teach young and junior middle school children, so as to promote the ceramic culture, and there are opportunities of them for exercise and entrepreneurship.

Ceramics and its products have a vast space for entrepreneurship as a mass product. Ceramics is a major with broad space for entrepreneurship. At present, although ceramic products are common on the market, but ceramics as both traditional and modern art form, there is still a lot of space for creation. With the continuous change of people's pursuit, creators should keep up with the demand and try to innovate, which brings the greatest possibility for entrepreneurship. With different aesthetic concepts in different periods, different ceramic artworks or commodities will appear accordingly. Therefore, ceramics has always existed as a popular category for a long time. In addition to its own material advantages, it also lies in the unique artistic

charm that it embodies. Especially in modern times, under the premise that people pay more attention to spiritual enjoyment, environmental protection and health, the daily necessities of ceramic materials are more and more popular. Therefore, there is enough space for this category of entrepreneurship. Of course, the premise of entrepreneurship is innovation, and innovation must cultivate innovative talents. There is a market when there is demand, and then there will be a space for entrepreneurship. Only by grasping the current market needs and understanding people's aesthetic psychology and material needs, there will be a vast prospect for the development of entrepreneurship space.

III. Prominent Problems in Ceramic Teaching

A. The Orientation of Ceramics Is Not Accurate, and the Training Plan Needs to Be Updated Urgently

At present, there are more and more ceramic majors in colleges and universities. The training objectives of the professional training plan are old, which can not keep up with the pace of social development, they cannot meet the needs of the society, and the professional characteristics are not distinct enough. There are many ceramic majors, including the newly opened ceramic professional curriculum plan to be set according to the allocation of teachers, which professional direction of the teacher is excellent to focus on which courses, and even one teacher serves multiple professional courses, which leads to learning of students are unprofessional, the contact surface is shallow, all aspects are half understood, and there is no accurate orientation from the beginning of enrollment. Therefore, the teaching objectives of ceramic major in colleges and universities should be reasonably positioned, optimize the teaching staff, establish and perfect the curriculum system, and improve the teaching hardware facilities, so that the ceramic major can develop the real innovative ceramic talents in order to have the possibility of entrepreneurship in the future, and serve the society better.

B. The Ceramic Teaching System Is Not Complete, and the Quality Education Needs to Be Strengthened Urgently

The quality education of innovation and entrepreneurship aims to improve the quality of innovation and entrepreneurship. The General Office of the State Council promulgated the overall goal of Implementation Opinions on Deepening the Innovation and Entrepreneurship Education in Colleges and Universities, which established the universal education of innovation and entrepreneurship in 2017 and a sound entrepreneurship education system in 2020. Research on the quality structure of innovation and entrepreneurship of students of ceramics is the theoretical premise for carrying out innovation and entrepreneurship education. The premise of targeted education is to really clarify the quality structure. At present, there are no good answers for the questions about what abilities and qualities the students of ceramics need in terms of innovation and entrepreneurship? What is the internal relationship and overall structure of these qualities? In what ways do students have unique innovation and entrepreneurial qualities? Therefore, it is an important task for ceramic major to explore the quality structure model of innovation and entrepreneurship of ceramic major students, including cultural history, professional knowledge and practical skills. At present, in the aspect of ceramic teaching, although the establishment of ceramic course system in most colleges and universities has taken innovation and entrepreneurship as an important part of quality education, it is not mature enough. The course of innovation theory is not deep enough, it has not been able to combine well with the major, lacks the entrepreneurial practice conditions, the students do not have enough space to exert themselves, and even they do not have a thorough understanding of the problems of innovation and entrepreneurship, which makes students lack of enthusiastic about innovation and entrepreneurship, and the students with entrepreneurial ability are also blindly starting their own businesses. All of which need the establishment and improvement of innovation and entrepreneurship quality education in colleges and universities, tap the potential of students, raise their awareness of innovation, and improve the entrepreneurial environment.

C. The Cross Connection of Ceramic Teaching Is Not Enough and There Are Many Obstacles for Innovation and Entrepreneurship

The theory and practice of ceramics both contain many professional contents and intersect with many disciplines. It is integrated with the disciplines of physics and chemistry. For example, the configuration and sintering of glazes belong to the fields of chemistry and physics, which occupy an important position in ceramics. In order to further study in this major, ceramic students need to arrange interdisciplinary courses reasonably. In addition, "widespread entrepreneurship and innovation" is currently the hottest, so the theory and practice course of innovation and entrepreneurship is the most important, which plays a good role in guiding and promoting entrepreneurial enthusiasm and possibility of students in the future. Later in entrepreneurship, students also need to solve psychological problems, entrepreneurial economic problems, and so on. Although colleges and universities are also involved in this aspect of the curriculum, the system curriculum is not concentrated enough, and it is just a matter of talking on paper. In practice, they are at a loss as well as students, which make entrepreneurial enthusiasm of students encountered problems and immediately subsided. The reason is that in addition to the own problems of students, there is also a direct relationship with the introduction of the subject and the teaching quality in the teaching.

IV. Thoughts on Ceramic Teaching Reform for Innovation and Entrepreneurship

A. Establishing a Complete Curriculum System for Innovative and Entrepreneurial Ceramics

It is important to create a teaching system of ceramics theory courses and practical courses with an innovative and entrepreneurial spirit and orientation. At present, the ceramics curriculum system of most colleges and universities

is very sound. Both the theoretical and practical courses are very mature. However, the ceramic teaching system oriented by innovation and entrepreneurship is still not perfect, lacking the correct guidance and curriculum introduction of innovation and entrepreneurship. The curriculum system is not complete and the teachers are not sufficient. Therefore, the amount of information received by students and their understanding of innovation and entrepreneurship are far from sufficient. Innovation is fundamental to the development of a school. Only by always integrating innovative ideas into the classroom and combining them closely with creative practice, can the school better serve the future entrepreneurship. Many of China's current innovation and entrepreneurship classroom models come from foreign universities, but these are not necessarily suitable for China, and even less suitable for ceramic teaching in colleges and universities. Establishing a sound innovation and entrepreneurship ceramics curriculum system that is in line with China's national conditions and suitable for colleges and universities in China needs to continuously absorb external experience, summarize its own shortcomings, and truly integrate innovation and entrepreneurship with ceramics specialty. It is necessary to cultivate students' comprehensive ability, improve students' professional quality while cultivating students' innovative and entrepreneurial qualities, so that students understand the importance of innovation, truly start a business and then realize their own values and goals.

B. Building a CeramicProfessional Teacher Team with Innovative Spirit and Entrepreneurial Ability

In 2013, in a letter of condolences to the majority of teachers in China, Xi Jinping emphasized, "Teachers are the foundation for the continuation and development of education. They are responsible for the healthy growth of each child and the satisfaction of education." The key to education lies in teachers' teaching. Teachers are the core strength to run a school well. As a teacher of ceramics, they must accumulate energy in theory and practice, keep up with the trend of the times, update their knowledge reserves, and finally implement it into teaching practice. At present, many college ceramics teachers face very real problems. Some people have weak skills and theoretical foundations, not to mention how to solve problems encountered in interdisciplinary subjects. Therefore, it is necessary to continuously update knowledge, update ideas, continue to innovate on the basis of inheritance, and adapt to the development of society and teaching. In this way, professors can give students more knowledge reserves. Moreover, in the teaching of ceramics, it is not only necessary to train teachers directly related to the specialty, it is more important for the training of innovative and entrepreneurial teachers. Most of the college's innovative and entrepreneurial teachers come from business schools. These teachers do not know enough about ceramics issues, and it is difficult to teach courses. However, there is no dedicated teacher of innovation and entrepreneurship in the ceramics major, so that students will have little knowledge in the cultivation of innovation and entrepreneurship, and they will not be able to integrate well with the profession. Therefore, cultivating senior creative and entrepreneurial teachers of this specialty is of vital importance to the guidance of students' future development. Of course, for the teachers of ceramics, it is difficult for these people to master knowledge about innovation and entrepreneurship, such as understanding psychology and economics. But in the long run, such a group of teachers can directly and effectively communicate with students, and bring more and more complete information to students. They can also innovate with students and guide their entrepreneurship.

C. Establishing an External Guarantee System for Talent Training in Ceramic Innovation and Entrepreneurship

In addition to the high requirements of teachers in ceramic teaching, some external conditions provide information resources on innovation and entrepreneurship to help cultivate innovative entrepreneurship talents. As much as possible, the ceramics major should invite famous teachers, or entrepreneurs and experts with outstanding performance in the industry, to come to school to communicate with students and impart experience, making students know in advance the possibility of entrepreneurship and the many problems encountered in entrepreneurship. Such external conditions combined with the university's strong faculty and entrepreneurship platform can continue to cultivate more outstanding innovative talents and inject vitality into the development of universities. At the same time, it is necessary to establish or improve the innovation and entrepreneurship information service platform within the specialty, timely update the innovation and entrepreneurship information of domestic and foreign counterparts, learn from each other, and provide more and more practical teaching experience for ceramic teaching. Colleges and universities need to go out and bring in. At present, many colleges and universities also carry out school-enterprise cooperation, which brings very important resources to college students' entrepreneurship, and also provides more entrepreneurial opportunities. In addition to the information resources provided by the school, a long-term service mechanism must be established within the major to cultivate the spirit of innovation and entrepreneurship while optimizing the allocation of resources to provide more guarantees for the cultivation of ceramic innovation and entrepreneurship.

D. Optimizing the "Three-One-Third" Training Mode of Ceramics

In the new era of rapid economic development, society's demand for talent must be innovative. For the cultivation of innovative talents, the integration of the "three-thirds" education model combining curriculum system, training base and social practice is very effective for students of ceramics. The establishment of a perfect curriculum system is the goal of the smooth development of the profession, an effective means to improve students' comprehensive quality and ability, and also the direction of employment choices for future students. A sound curriculum system lays a solid foundation for students. The school should provide students with a training platform or establish a training base for students to practice. Building an on-campus training platform or an off-campus training base can also improve

student initiative. At the same time, contacting the post in advance can accumulate more entrepreneurial experience for the students themselves. This also provides more direct and effective resources for schools to cultivate applied talents. The training base and social practice play a positive role in cultivating innovative and entrepreneurial talents, and play a key role in improving professional capabilities, innovative and entrepreneurial capabilities, and sound personality and ideology.

V. CONCLUSION

From the perspective of innovation and entrepreneurship, ceramic teaching reform plays an important role in inheriting and carrying forward Chinese traditional culture, exploring and innovating, providing good entrepreneurial conditions for students, and solving employment problems, and so on. It is necessary to strive to build a sound curriculum system, provide complete entrepreneurial conditions, improve the level of innovation and entrepreneurship of teachers, guide students to strengthen innovation awareness, drive students to start their own businesses, and train more excellent innovation and entrepreneurship talents for the country and society.

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