

Construction and Application of Innovation and Entrepreneurship Curriculum System from the Perspective of Educational Ecology

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Abstract

The innovation and entrepreneurship course opened in recent years is an important way to cultivate students' innovative thinking and entrepreneurial consciousness, and its curriculum system needs to be improved. This paper uses the theory of educational ecology to guide the construction of innovation and entrepreneurship curriculum system, combined with relevant national policies, analyzes the current situation of innovation and entrepreneurship education in China. On this basis, this paper carries out teaching reform on several subsystems of innovation and Entrepreneurship Education Ecology (including teachers, teaching methods, curriculum content, teaching methods, teaching resources, curriculum evaluation, etc.). The results show that through the transformation of teaching theory, students' creativity has been brought into play, integrated entrepreneurship education and professional learning, actively participated in entrepreneurship competition and achieved good results.

Keywords

Innovation and entrepreneurship courses; Curriculum system; Educational ecology; Internet plus college students' innovation and Entrepreneurship Competition.

1. Backgrounds

At present, colleges and universities in China have set up college students' innovation and entrepreneurship education, which has achieved certain results and provided strong support for further promoting college students' innovation and entrepreneurship. However, in recent years, innovation and entrepreneurship education has not achieved the expected results, mainly manifested in the few awards in high-level college students' innovation and entrepreneurship competition, the low entrepreneurship rate of college students, the unreasonable structure of entrepreneurship environment and so on. According to statistics, the average rate of independent entrepreneurship of college students in western developed countries is between 20% and 30%, while the proportion of ordinary college graduates in China from 2015 to 2017 choosing independent entrepreneurship is only about 3%, and the success rate of entrepreneurship is low [1].

College students are the new force of mass entrepreneurship and innovation. The main factors affecting college students' choice of independent entrepreneurship are as follows: first, the influence of traditional social factors. After completing their studies, most college students hope to apply for jobs in the government, state-owned enterprises and institutions in order to obtain a decent and guaranteed career; Second, the ecological environment of innovation and entrepreneurship education is poor. Local colleges and universities often do not pay attention to entrepreneurship courses. The lack of courses, lack of teachers, lack of funds and few entrepreneurship platforms have become the difficult factors of entrepreneurship courses;

Third, lack of innovation and entrepreneurship. College students are less involved in non professional knowledge, lack of correlation between entrepreneurship courses and majors, lack of corresponding communication, organization, leadership and other abilities, and lack of entrepreneurial awareness. As a western region, Guangxi has a relatively weak economic environment and entrepreneurial atmosphere, which leads to these problems being particularly prominent in local colleges and universities in Guangxi.

Talent training is inseparable from the environment. Talent is the first element of innovation and entrepreneurship. College students' entrepreneurship is a difficult process, and its environmental factors have a great impact on innovation and entrepreneurship training. At this stage, college students reposition their entrepreneurial awareness, produce new entrepreneurial thinking, and have weak initiative and adaptability to actively understand the development trend of the enterprise market. Their independent entrepreneurship maturity is low and the environment is severe. Most college students are difficult to fully grasp the development trend of the enterprise market [2]. In this context, as the main battlefield of talent training, it is particularly important for colleges and universities to study and reasonably allocate the ecological environment of innovation and entrepreneurship education, straighten out various environmental factors and optimize them.

2. Educational Ecology Theory and National Entrepreneurship Policy

2.1. Relevant Theories of Educational Ecology

In the 1970s, the famous American scholar kraming formally put forward the concept of "educational ecology" and constructed the basic principles of educational ecology research. In terms of theoretical connotation, educational ecology advocates using the principles of ecology to analyze and solve educational problems from the interaction of ecological components such as individual, population and environment [2]. Apply the ecosystem theory model to pedagogy, that is, the educational ecosystem theory model. In this model, it is considered that in the process of learning and growth, an internal and external environment formed by the school, society and government is a system with multiple levels of complex relations, and all aspects of students' development will be affected by the whole environment [3].

The ecological environment of innovation and entrepreneurship education in Colleges and universities is not only the specific application of educational ecological theory in the field of innovation and entrepreneurship education, but also an important subsystem of entrepreneurship ecosystem. It is a social ecosystem based on universities and composed of individuals, organizations and environment involved in entrepreneurship education. The ecological environment of innovation and entrepreneurship education in Colleges and universities has the following characteristics [2]. First, the ecological environment of innovation and entrepreneurship education in Colleges and universities aims at cultivating innovative entrepreneurs, focusing on cultivating students' Entrepreneurship and some entrepreneurial skills. Second, the ecological environment of innovation and entrepreneurship education in Colleges and universities is an ecological network organization, which contains a large number of heterogeneous subjects and the interaction between subjects based on the flow and use of knowledge and other resources. Third, the innovation and entrepreneurship education ecosystem is a dynamic and open complex system with obvious environmental embeddedness, self-organization adaptability and emergence.

2.2. National Entrepreneurship Related Policies

In the document "opinions of the general office of the State Council on the implementation of deepening the reform of innovation and entrepreneurship education in Colleges and universities" issued by the national government in 2015, the notice pointed out at the beginning

that there are some prominent problems that can not be ignored, mainly because some places and colleges do not pay enough attention to innovation and entrepreneurship education, the concept of innovation and entrepreneurship education lags behind, the combination with professional education is not tight, and it is divorced from practice; Teachers lack the awareness and ability to carry out innovation and entrepreneurship education, the teaching methods are single, and the pertinence and effectiveness are not strong; There is a shortage of practice platforms, inadequate guidance and assistance, and the innovation and entrepreneurship education system needs to be improved. Put forward the urgent requirement of further deepening reform. The notice requires colleges and universities to promote the organic integration of professional education and innovation and entrepreneurship education, adjust the professional curriculum, excavate and enrich the innovation and entrepreneurship education resources of various professional courses, and strengthen innovation and entrepreneurship education in the process of imparting professional knowledge. For all students, we will develop and open compulsory and elective courses in research methods, discipline frontier, entrepreneurship foundation, employment and entrepreneurship guidance, incorporate them into credit management, and build a special course group of innovation and entrepreneurship education that is progressive, organically connected, scientific and reasonable. All regions and colleges and universities should speed up the informatization construction of high-quality courses of innovation and entrepreneurship education, and launch a number of online open courses such as resource sharing Mu courses and video open courses. Establish an online open course learning certification and credit recognition system. To organize the leaders of disciplines and enterprises, and jointly compile[4], a key textbook for innovation and entrepreneurship education with scientific, advanced and applicable features. The China International Internet plus student innovation and Entrepreneurship Competition (hereinafter referred to as the "Internet plus" business competition), jointly sponsored by twelve central ministries and commissions of the Ministry of education, has been rapidly becoming the most influential and top ranked college student competition project [5], since 2015. The results of the competition have also become a symbol of the scientific research and innovation strength of colleges and universities and an important indicator of the performance evaluation of colleges and universities. The competition aims to deepen the comprehensive reform of higher education, stimulate the creativity of college students, adhere to promoting learning through competition, cultivate a new force of "mass entrepreneurship and innovation", promote college students to increase their wisdom and talents in innovation and entrepreneurship, and strive to grow into promising talents with both morality and ability; The competition will promote the transformation of competition results and the combination of production, teaching and research, and promote the formation of new formats of "Internet plus", serve the high quality development of economy, and strive to form a new situation of higher quality employment and employment for university graduates.

3. Relevant Literature Research

In this project, the periodical data over the years are retrieved from CNKI. The retrieval formula is set as "retrieval conditions: (all periodicals = y)) and ((theme = innovation and entrepreneurship, and theme = curriculum system) or (title = innovation and entrepreneurship, and title = curriculum system))". Academic journals are selected from the database, and 517 literature data are obtained, There are 33 Chinese core journals. In terms of quantity, the number of relevant papers published in 2011 and before is very small, and has increased year by year since 2012. This reflects that domestic scholars have paid general attention to this field in recent years. The following is a brief summary of the relevant research on the training environment of innovative and entrepreneurial talents at home and abroad.

Abroad, it has a history of half a century since the 1960s, with rich and diverse literature materials. The Book Entrepreneurship by Professor Jeffrey A. Timmons, the leader of American innovation and entrepreneurship education, is the framework and standard of innovation and entrepreneurship education in the United States and even the world. In the book, he divides the entrepreneurship education curriculum into two parts: theoretical and practical curriculum, which are integrated with each other. In his article "entrepreneurship education in America's major universities", Peter Robinson created an evaluation model of innovation and entrepreneurship education in major universities in the United States from six aspects: the number of courses, academic projects and human resources [6]. In the curriculum for entrepreneurship education: a review, Caroline Brown introduced the implementation modes of entrepreneurship education at different levels of education and the exploration experience of new entrepreneurship courses in American colleges and community colleges from a macro perspective. He Yunjing (2006), Lu Lihua (2007), Ji Xuejun (2007) and other scholars have studied and analyzed the typical models of innovation and entrepreneurship education in foreign universities. They will take the innovation and Entrepreneurship Education Center as the main organizational form and promote interdisciplinary development. On this basis, they put forward the path and model of innovation and Entrepreneurship Education [7-9]. Lai min (2018) From the perspective of institutional environment differences in innovation and entrepreneurship, it is considered that high-income countries are significantly better than low-income countries in the institutional environment of innovation and entrepreneurship [10]. Bao Xiaomei (2016), Hu Jian (2019) They believe that MIT, Stanford University and Baisen business school are one of the models for the successful implementation of global innovation and entrepreneurship education. These schools have gradually formed an integrated ecosystem integrating innovation and entrepreneurship education curriculum system, innovation and entrepreneurship practice competition system and innovation and entrepreneurship education guarantee system, focusing on the needs of students It has influenced the concept and practice of innovation and entrepreneurship education in other American universities, and has become an important reference for the construction of innovation and Entrepreneurship Talent Training Environment in higher education institutions in other countries [11-12]. In addition, the literature shows that international well-known universities such as Stanford University, Munich University of technology and King's College London have made considerable achievements in the construction of innovation and entrepreneurship curriculum system [13] These foreign advanced innovation and entrepreneurship education experiences undoubtedly provide a good reference for the construction and optimization of China's innovation and entrepreneurship curriculum system.

In the domestic research literature, after searching and screening, we have divided the current research on innovation and entrepreneurship curriculum in China into teaching theory discrimination, educational problems and strategy research, curriculum system research, curriculum teaching environment allocation and so on.

(1) Analysis on the theory of entrepreneurship education in Colleges and universities. Hu Xiaofeng (1989) and others first introduced entrepreneurship education into educational discourse. The article believes that entrepreneurship education is to cultivate a reasonable life as the goal, and puts forward the development of entrepreneurship education with the "three combinations of science and technology, education and economy", which still has enlightenment for the research of innovation and entrepreneurship curriculum system in the new era [14]. Cao Weilin (2002) and Xu Huaping (2004) For the research on exploring the connotation and theory of entrepreneurship education in Colleges and universities, it is generally believed that entrepreneurship education is a part of quality education, and entrepreneurship education can better cultivate students' innovative spirit and ability, which is an objective requirement to promote the all-round development of students' quality [15-16].

Luo Zhimin (2011) and Yan Maoxin (2014) believe that entrepreneurship education in Colleges and universities must be based on "realistic people" As the logical starting point and "developing people" as the logical end point, we should cultivate students' pioneering quality [17-18].

(2) Analysis on the current situation and Countermeasures of entrepreneurship education teaching. Typical studies in this regard include Qian Qiang (2005), Mei Weihui (2009), Yan Maoxin (2009) and Hu Tao (2011). They believe that there are still some problems, such as lagging ideas, imperfect curriculum system and lack of teachers, obvious lag in the development of entrepreneurship education in Colleges and universities, weak entrepreneurship awareness, lack of knowledge and weak ability of college students [19-22]. They analyzed the current situation of entrepreneurship education in China, found problems and reflected. They generally believe that there is a great contrast between College Students' high expectations and low participation rate in innovation and entrepreneurship. Entrepreneurship education in Colleges and universities should continue to make efforts in expanding the depth of courses, strengthening the construction of teachers, creating an atmosphere of entrepreneurship education, and improving the capital guarantee mechanism [23-25].

(3) Research on innovation and entrepreneurship curriculum system. Research in this area mainly includes: Ji Zhaolin (2001), Li Jingwang (2006), Li Chunqin (2007) and others believe that entrepreneurship education curriculum can be set as subject curriculum, activity curriculum and entrepreneurship practice curriculum, and it is necessary to establish a full-time and part-time Entrepreneurship education expert system with dynamic development [26-27]. Zheng Ruilun (2012), Zhou Lingyu (2014) This paper discusses the construction of the curriculum system of innovation and entrepreneurship education in Colleges and universities, and expounds the characteristics, ideas and technology of the curriculum system construction of cultivating innovation and entrepreneurship talents [28]. Chen Wenjuan (2012), Shang Dajun (2015), Zhao Huili (2016), Li Deli (2019) And a large number of scholars have focused on creating a modern entrepreneurship education model, studied the planning of discipline design and curriculum, including system construction, curriculum construction, teaching staff, practical teaching, evaluation indicators, and put forward many countermeasures to solve the problems encountered in the implementation of entrepreneurship education [29-32].

(4) Research on teaching mode and educational resource allocation environment. Zhang Xiaoyang (2017), Yang Wei (2018), Li Shuwen (2019) and others have made detailed discussions on talent training scheme and cooperation among various departments of colleges and universities to help innovation and Entrepreneurship Education [33] After investigating 99 demonstration universities in China, Yang Wei believes that new teaching modes and methods such as flipped classroom and online and offline mixed courses are widely used in innovation and entrepreneurship education, which enhances students' autonomy and interest in learning [34]. Zhang Xiaoyang et al. Proposed that schools establish innovation and entrepreneurship credit accumulation and conversion system [33]. Mei Weihui (2009), Huang Wenguang (2009), Huang Zhaoxin (2011) It is generally believed that college innovation and entrepreneurship education should continue to make efforts in expanding the depth of courses, strengthening the construction of teachers, creating an innovation and entrepreneurship education atmosphere, and improving the capital guarantee mechanism. Xiao Zhixiong (2016) and Li Shuwen (2019) affirmed the "maker space" It can fully mobilize the enthusiasm of the masses for innovation and entrepreneurship [35-36].

(5) Research on innovation and entrepreneurship education for medical students. Some scholars cited that the business of life science maker space of Xuzhou Medical University focuses on biotechnology, pharmaceutical R & D and medical device manufacturing; Yang Ling Zhongchuang pastoral in Shaanxi focuses on agriculture, integrating modern agricultural research and development creativity, agricultural big data cloud and agricultural product

testing and R & [35]. In addition, the authors of medical colleges and universities such as Guangxi Medical University and Jilin Medical College have conducted in-depth research, among which 14 relevant papers have been published by scholars of our university [37], which shows that there is a certain research foundation.

The research on innovation and entrepreneurship curriculum in Colleges and universities in China has been relatively rich, but there are still some research gaps and deficiencies, which are manifested as follows: first, the positivity is not strong. Many studies stay in the theoretical stage, talk about entrepreneurship forms and teaching methods, and do not study the combination of college running reality and training objectives; second, the integration is not strong. Local universities and application-oriented universities have their unique innovation and entrepreneurship Due to the advantages of professional education, some innovation and entrepreneurship curriculum research is not combined with students' majors, and there is a lack of comprehensive innovation and Entrepreneurship Education Research for different levels and types of students; third, the number of innovation and entrepreneurship curriculum research for medical students is small, only more than 50, of which there are few papers in the core issue; fourth, the application of the studied hybrid teaching model is not systematic, which has little impact on the existing teaching methods The direction of curriculum system reform is still unclear.

4. Innovation and Entrepreneurship Curriculum System Reform Path

4.1. Determination of Reform Objectives

On the basis of studying the experience of entrepreneurship education at home and abroad, actively promote the reform and optimization of innovation and entrepreneurship curriculum environment for local college students. Combined with the investigation of the current situation of entrepreneurship education in some colleges and universities in the province [38], summarize the representative models and strategies, and scientifically plan the innovative entrepreneurship education mechanism and training environment configuration. First, insist on deepening the reform. Only through the reform can we further optimize the innovation and entrepreneurship environment of college students, and only through the reform can we explore a sustainable development road for the cultivation of innovation and entrepreneurship talents. Second, pay attention to people's subjective initiative. Teachers and managers should improve their ability to use information technology, enrich teaching means and teaching content according to students' professional characteristics and employment skills, and create a network-based learning environment. Third, strive to create the joint participation of colleges and universities, government, society and individuals, and make every effort to create an ecological environment for innovation and entrepreneurship education in line with the reality of local colleges and universities.

4.2. Research on Innovation and Entrepreneurship Curriculum

(1) Establish online and offline mixed teaching mode and revise the curriculum system. We should integrate curriculum resources effectively, develop online and offline blended teaching, establish and run SPOC courses, official account numbers, video numbers, arrange curriculum contents reasonably, enrich teaching means, timely conduct teaching evaluation, and ensure the healthy operation of the curriculum system. In addition, from the system planning level, establishing and improving the planning blueprint of innovation and entrepreneurship curriculum system is the top priority. Through the construction and optimization of innovation and entrepreneurship curriculum system, we can realize the whole process of the whole staff and promote medical colleges to cultivate compound talents, promote students' innovation ability and promote employment..

(2) Coordinate the relationship between innovation and entrepreneurship course and other courses. Including the integration with employment guidance courses, innovative education should be combined with professional courses like "curriculum thinking and politics", that is, "integration of specialty and innovation", so as to stimulate students' innovative consciousness. Therefore, it is necessary to bring the talent training mechanism of innovation and entrepreneurship education into the professional and quality-oriented education system, design a diversified and hierarchical talent training scheme of innovation and entrepreneurship education, and better integrate it into the construction of professional groups and curriculum system by classification, stratification and highlighting characteristics.

(3) How to create a good institutional environment for students' innovation and entrepreneurship activities. Whether students are willing to actively accept and participate in innovation and entrepreneurship education is directly related to the educational effect and the operation of the whole ecosystem. It is a long-standing problem that students' entrepreneurial enthusiasm is not high. Colleges and universities need to carry out institutional innovation in credit recognition, "second report card" promotion and application, degree management, incubation base, etc., provide flexible and loose conditions for students to learn and practice innovation and entrepreneurship, and improve students' enthusiasm to participate in various "big innovation" competitions.

(4) Optimize the resource support environment of the ecological environment of innovation and entrepreneurship education in Colleges and universities. At present, the school supervision department or quality management office is responsible for the quality monitoring of general courses, while the supervision of innovation and entrepreneurship courses is diversified. The academic affairs office, enrollment and employment office, innovation and entrepreneurship college and the Student Work Department of the Youth League Committee are responsible for setting up and supervising some courses, and the sharing of curriculum resources is insufficient. Therefore, we need to explore the investment of innovation and entrepreneurship resources in many aspects. On the one hand, we should revitalize the resources in the school, make overall planning and optimization of funds, venues and other resources, coordinate the sharing of resources in the school, and avoid different departments acting in their own ways and repeated investment. On the other hand, we should cooperate with social enterprises to realize the integration of industry and education, give full play to students' professional advantages, obtain some funds from enterprises and alumni, and carry out research on horizontal topics.

5. Ecological Construction Measures of Innovation and Entrepreneurship Curriculum System

5.1. Course Teaching Content and Organization and Implementation Process

In 2018, the University listed the innovation and entrepreneurship education for college students as a general compulsory course, with a total of 32 class hours and 2 credits, to teach the sophomore students of the University. In addition, we have also set up an elective course of innovation and entrepreneurship training camp, which mainly implements the TBL teaching mode of "goal oriented, project driven and business roadshow" for the two types of courses. The teaching links of the whole course are as follows:

- ① Establish a team (company): the class is divided into six teams, including the CEO and the main principals.
- ② Explanation of innovation and entrepreneurship theory of medical students: tell the relevant theoretical knowledge of innovation and entrepreneurship, cultivate entrepreneurship and improve students' innovative thinking.

③ Case analysis and collection: medical related cases are extracted from the entrepreneurial case base and assigned to students for analysis according to the team. The team collects local or medical related cases by itself to enrich the case base.

④ Business roadshow and plan writing: under the guidance of the tutor, from analyzing other people's cases to the team writing their own entrepreneurial projects, participating in business roadshows and striving for financing to achieve the combination of theory and practice.

5.2. Ecological Construction Measures of Courses

This paper carries out teaching reform on several subsystems (teaching staff, teaching methods, curriculum content, teaching methods, teaching resources and curriculum evaluation) in the ecology of innovation and entrepreneurship education, and puts forward the "six in one" teaching mode of College Students' new entrepreneurship curriculum system, namely "system planning, entrepreneurship teaching, entrepreneurship drill, entrepreneurship competition, entrepreneurship practice and graduation tracking". The specific contents of its reform mainly include the following aspects:

(1) Construction of teaching staff

Create a three teacher system teaching team composed of full-time, part-time and off campus tutors. Among the full-time tutors are returned overseas doctors, famous teachers and senior engineers, who have rich experience in students' social practice management activities; In addition, we signed contracts with 6 off campus tutors to mainly carry out lectures, enterprise practice, and counseling and optimization of College Students' entrepreneurship projects.

(2) Reform of teaching methods

We actively adopt the combination of online and offline integration, synchronous and asynchronous teaching to build a three in one flipped classroom teaching mode of online micro class, online live broadcast and offline classroom, so as to give full play to the application of modern information technology in teaching.

(3) Curriculum content construction

First, build two curriculum modules of "theoretical support" and "innovative practice". The theoretical module focuses on innovative thinking and entrepreneurial knowledge in combination with the new progress of the discipline, and the practical module focuses on the analysis and discussion of entrepreneurship.

Second, we position the breakthrough point of innovation and entrepreneurship in the relevant regions and majors of the students. Promote the integration of innovation and entrepreneurship education and professional education. Because the entrepreneurial direction is closely related to their major, the students' entrepreneurial confidence and enthusiasm have increased significantly.

Third, build an ideological and creative integration content system of "one inheritance and three expansion", integrate the ideological and political content into all teaching links, realize mutual integration and symbiosis and value guidance.

Through the organic integration of Ideological and political education, professional education and innovation and entrepreneurship, the relevance of the three is improved, so as to realize the multiple coupling of teaching content.

(4) Teaching method and teaching process design

First of all, in the teaching process, we built an online and offline classroom flipping teaching mode, arranged students to study independently on the platform according to the progress of basic knowledge, lifted the restrictions of learning time and space, and improved learning efficiency. Teachers liberate more energy to offline social practice and carry out inquiry teaching. Online live broadcasting is an effective teaching supplement. Our school is short of resources and funds, so we can't take students out for study and investigation like other

colleges and universities. In this case, our teacher team will go directly to the entrepreneurship incubation base and enterprise factories to carry out live broadcasting. Students can also broaden their horizons and feel the entrepreneurial atmosphere of the times on campus.

Second, we emphasize the practicality of curriculum. In the course of learning, the teacher's explanation can't be lacking, but innovation and entrepreneurship has the attribute of strong applicability, and it is difficult to achieve the ideal effect by simple theoretical explanation. Moreover, entrepreneurship has a lot of tacit knowledge, which can't be told, but can only be experienced and realized in practice. Therefore, in our first meeting class, the first thing to do is to organize the students in the class into six virtual companies, and the team CEO will lead the members to carry out various practical activities. The teacher turned into a coach and the students took the initiative to play football. Guide students to learn by doing and make students "busy" in class. Compared with the traditional indoctrination classroom, the practice classroom that creates a real entrepreneurial atmosphere improves students' entrepreneurial enthusiasm. The third aspect is to shape the learning closed loop and construct systematic learning. In the teaching design, we organize according to the acquisition perspective along the progressive path from knowledge learning to innovation ability and then to entrepreneurial ability. Specifically, our teaching path from low-level to high-level, from input to output, allows students to start with knowledge mastery, then analyze and discuss other people's projects, then return to the mining and design of their own projects, and finally participate in the closed-loop learning of project roadshows to promote knowledge internalization and ability transformation.

(5) Curriculum resources construction

The self compiled textbook "innovation and entrepreneurship education for medical students" is used for classroom teaching; Supported by the construction of rich relevant curriculum resources, we have built wisdom tree (onlineh5.zhihuishu.com/), China University Moke (www.icourse163.org) and cloud class (<http://mosoteach.cn/>), super star Fanya (<https://mooc1-1.chaoxing.com>). There are more than 200 entrepreneurship case bases and more than 300 short videos on network platforms, and students' self-study, It has greatly enriched the resources of students' self-study.

6. Effectiveness of Curriculum Reform

(1) The transformation of teaching ideas. The assessment method is changed from summative evaluation to formative evaluation, the final examination is cancelled, and the final evaluation results are integrated into each classroom teaching and activity practice. Change the teaching from "teacher-centered" to "student-centered and pay attention to the teaching process". This course takes the team as the unit to reasonably evaluate the mastery of students' knowledge and skills in the form of teacher evaluation and student mutual evaluation. Promote every student to study hard and strive to complete the tasks they undertake.

(2) The two dimensions of on campus entrepreneurship education and off campus entrepreneurship environment support make entrepreneurship education ecological at the same time. Through the establishment of team virtual enterprise operation and management, create an entrepreneurial atmosphere. Compared with the traditional indoctrination classroom, it effectively solves the problem of College Students' entrepreneurial strangeness and improves students' entrepreneurial enthusiasm. The project not only focuses on imparting students' entrepreneurial knowledge, but also on the transformation of entrepreneurial scientific and technological achievements. A good campus science and technology practice environment will boost the improvement of students' entrepreneurial awareness and entrepreneurial ability, strive for the continuous improvement of the off campus entrepreneurship education ecosystem, and lay the foundation for their entrepreneurship education.

(3) Shape learning closed loop, construct systematic learning, and strengthen the transformation from knowledge to ability. Teachers should not only explain, but also participate in analysis and discussion, and finally comment and improve. Students learn from knowledge mastery, project analysis and discussion of others, to their own project development practice, and finally participate in the closed-loop learning of project roadshow to promote students' knowledge internalization and ability transfer. The analysis and discussion of innovative cases in the medical field can effectively inspire students' innovative thinking and innovative methods. In recent years, the number of students' patent inventions, scientific research projects and papers have increased significantly. According to incomplete statistics, there are more than 10 entrepreneurial projects involving students' patented inventions or topics under the guidance of the teacher team.

(4) Apply "embedded" color on the bottom plate of innovation and entrepreneurship education, strive to realize the "binding" development of the two, and build an education system of "innovation and entrepreneurship education + professional education". Medical related cases are extracted from the entrepreneurial case base and assigned to students for analysis according to the team. Then the team is required to collect medical related cases and enrich the case base. Finally, under the guidance of the tutor, from analyzing other people's cases to the team writing their own entrepreneurial projects and participating in business roadshows, so as to achieve mutual benefit between teaching and learning. Teachers' research ability has made great progress. The teacher team presided over 4 provincial and ministerial educational reform topics of innovation and entrepreneurship, and the entrepreneurship Laboratory of "direct access to ZhongGuanCun", an industry university cooperation project of the Ministry of education, won the first prize in the final evaluation. In 2018, the textbook fundamentals of medical students' entrepreneurship was published. The textbook "innovation and entrepreneurship education for medical students", which was re edited in 2021, was published by Guangxi Normal University Press and has been put into classroom use.

(5) Guided by entrepreneurial projects, based on the concept of integration of expertise and innovation, develop products or services around the pharmaceutical field, use the learned innovative methods to complete the project plan and participate in various competitions. In recent years, he has guided students to win projects or more than 40 awards. Especially in China Internet plus China business competition 2020, teachers' guidance projects were awarded 1 national level bronze medals, and 2 gold, 3 silver and 8 copper at the provincial level. In 2021, seventh Chinese international Internet plus entrepreneurship competitions won sixth national silver awards and 1 bronze awards, and 6 gold 12 silver 37 copper at the provincial level.

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