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Training Mode of Innovation and Entrepreneur Talents in Medical Laboratory Specialty

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Abstract: Entrepreneurship education and innovative talent cultivation are the needs of building an innovative country. It is the trend of the times to cultivate college students' entrepreneurial spirit. Medical testing is a new discipline with multiple technologies and multiple disciplines. The traditional medical test personnel training model has been difficult to adapt to the development needs of the economic globalization situation. This paper further explores the feasibility of the new situation to establish a new entrepreneurial class medical training model in the domestic medical institutions of higher learning in class, and has achieved initial exploration entrepreneurial thinking and awareness to students in the school, entrepreneurial skills and the ability to practice As the core medical examination education model. To explore a new mode of training medical personnel under the new situation, and to build a unique innovative and entrepreneurial talent training system with excellent operational skills and various development directions and strong comprehensive quality, so as to better meet the social testing professionals.

1. Introduction

Since the founding of New China, thousands of higher education institutions in China have been classified into research or application types, and medical colleges and universities are no exception. Currently, many people still uphold the traditional belief that after graduating college students is nothing more than enterprises, companies employment, graduate school or continue their studies, part of the conditions for a better choice out of the country. In these inherent concepts, there is no place for “entrepreneurship”.Most of the universities in China that are responsible for education are also in a state of vacancy. Very few special entrepreneurship education courses are offered. It is even more important to raise medical entrepreneurship education to the same level as traditional routine education. In such a social environment, the students trained in traditional medical higher education are very lacking in entrepreneurship and entrepreneurial ability. This undoubtedly kills

the entrepreneurial spirit of students to a certain extent, which is why the proportion of college students in developed countries in Europe and America. So high, but most of the college students in China are absent from the round of entrepreneurial tide since the reform and opening up. Based on this, in China's medical higher education, it is necessary to strengthen entrepreneurship education, and the whole society can act together to upgrade medical entrepreneurship education to the status of traditional education or employment-oriented education, which not only improves students' practical ability and comprehensive skills, but also It is of great practical significance to further expand the employment of students and even the employment rate of college graduates.

2. Analysis of Research Status at Home and Abroad

For a long time, people generally believe that entrepreneurship is innate, just as the Jewish people were born with material to do business. Wenzhou and Chaoshan people are Chinese Jews. They are all natural businessmen. However, as people deepen their understanding, people gradually discovered that entrepreneurial spirit and ability are not innate, and the acquired education can guide entrepreneurs well. In western countries, entrepreneurship education started very early. As early as the beginning of the 20th century, some educational institutions in the United States attempted to educate high school students in the country on entrepreneurial practices. Decades later, Harvard University opened the first business education related course in the history of the world's higher education at the school's business school. From the end of the 20th century to Steve Jobs (Reed College), Frank Wright (University of Wisconsin), Bill Gates (Harvard), Michael Dell (University of Texas), James Cameron (University of California) and Baggminster Fuller (Harvard) and a large number of entrepreneurs from American colleges and universities began to set off a series of "entrepreneurial revolutions" in American universities and colleges. Entrepreneurship education has also developed rapidly. Hundreds of colleges and universities have set up special entrepreneurial education.

In the area of medical entrepreneurship, many medical colleges and universities in China have also carried out a large number of effective measures to guide medical students in their entrepreneurial activities. For example, the "community medical service system research group under the background of the new medical reform" formed by students of clinical medicine graduating classes actively visited the community. Investigate the implementation of six-in-one medical services for community medical care in Xuzhou City and the related factors that restrict the development of community medical care. These periodic surveys are conducive to the employment of medical students to the grass-roots, alleviate the increasingly severe employment pressure, and promote the establishment of harmony. The community and harmonious society also have positive significance. Southern Medical University promotes students' entrepreneurship from both education and practice, and incorporates entrepreneurial education into the process of undergraduate teaching to cultivate students' abilities and qualities in all aspects required for starting a business. The school started targeted education from the time the students entered the school, opened career planning elective courses, and incorporated entrepreneurial-related content into the curriculum. In addition, the school also implements the "double mentors" policy: professional tutors are mainly teachers in the school, providing guidance for students in their knowledge and technology for entrepreneurial ventures; practical tutors are mainly off-campus entrepreneurs who provide students with guidance on corporate management. The practical tutor will provide targeted guidance to college students in the process of entrepreneurship. At the same time, tutors will follow their entrepreneurial process and conduct full guidance. At the same time, the school has also established the Southern Medical University Students Entrepreneurship Practice Center as a business practice base, providing entrepreneurial positions for college students, including entrepreneurship education in the

curriculum, and arranging professional tutors and practices for students with entrepreneurial intentions. Tutors conduct personalized coaching. Anhui Medical University organizes the annual University Student Entrepreneurship Competition. The scope of entrepreneurial design covers health management, pharmaceutical research and development, product promotion, cultural communication, nutritious meals, community medical services, early childhood education, resource recycling, medical supplies, and catering. Industry field, guide students to start a business.

3. The Current Drawbacks of the Medical Examination Professional Training Model

3.1. The Talent Training Model is Single

At present, the medical examination major is mainly based on the "knowledge reserve type" or "test-type", and the structure is relatively simple. This traditional talent training mode limits the development direction of students, ignoring students' self-directed learning and courage. The ability to innovate further neglects the orientation of the inspection profession should be based on the “application-oriented” talents. This leads to the incomplete knowledge structure, rigid thinking, innovative ability and practical ability of the graduates of medical examination majors, and adapt to the society. A series of problems such as poor ability. To this end, our school's testing profession has innovated the talent training model based on professional characteristics and subject characteristics, and focused on the cultivation of applied talents.

3.2. The Reform of the Curriculum System is Slow

Test major focus of medical education capacity and quality of education for future training and delivery of higher technology applied outstanding professionals for primary health care units. However, most of the current medical examination professional education models still adopt the traditional education mode centered on the subject; the professional curriculum system is mainly based on the systematic and complete teaching of subject knowledge, and has the phenomenon of heavy theory and light practice; The professional training program also does not pay attention to the subjectivity and difference of students. Most of the students passively accept the relevant courses prescribed by the school; these phenomena make the connection between the disciplines lack, the boundaries between disciplines are too clear, and the students' subject consciousness is too strong. It inhibits the enthusiasm and creativity of students' learning and neglects the cultivation of students' abilities. As a result, students' clinical thinking ability, practical ability, and innovation ability are all relatively poor, and the overall quality is not better cultivated; Graduates have weak adaptability after entering the society and cannot be in an advantage in social competition.

3.3. Teacher Resources Lack Double-Educational Teaching Talents

Medical Laboratory is relatively strong and practical application of discipline, so the training and the application of practical ability to pay special attention to; but there is a serious lack of professional teachers test in two qualified teachers, most teachers theory divorced from reality. This kind of teacher resources is very unfavorable for the inspection of professional personnel training requirements. Therefore, we must strengthen the cultivation of applied talents, we must first strengthen the construction of dual-qualified teachers, to solve some of the problems of the theory of teachers from practice, so as to improve the teaching quality of inspection education.

4. The Medical Examination of Students in Innovation and Entrepreneurship Training Model Implementation

4.1. Strengthen the Cultivation of Innovation and Entrepreneurship Quality of Medical Test Students

Innovative education makes entrepreneurship education integrated into the requirements of knowledge and skills. Entrepreneurship education makes innovation education more specific and realistic. The emphasis on the intrinsic value of the two basic concepts of innovation and entrepreneurship has affected the starting point of the idea of innovation and entrepreneurship education in universities and the systematic construction of the educational system. Focusing on the training of innovative and entrepreneurial talents, the Department of medical inspection insists on the practice orientation of innovation education and the innovation orientation of entrepreneurship education, and attaches great importance to the integration of innovation education and entrepreneurship education. Relying on the school enterprise cooperation platform of the Medical Laboratory of Southern Medical University, we have deeply thought about how to carry out this work. With the principle of "interest driven, independent experiment, emphasis on process and demand oriented", the innovation training project of college students is carried out, the "Simulated company system management" model is introduced to carry out the training program of entrepreneurship, the "entrepreneurial tutor", the introduction of "incubator", the implementation of the entrepreneurial practice plan, and the combination of the teaching plan and the entrepreneurial plan. We should tailor the personalized professional training plan, create an entrepreneurial atmosphere, and jointly build an innovative and entrepreneurial exchange platform.

4.2. Effectively Arrange the Teaching Content, Highlighting the "Practical" Principle

The teaching content is the direct manifestation of the quality and goal of talent training; according to the characteristics of the clinical examination basis, clinical microbiology test, clinical hematology test and other morphological content, the "experimental theory" teaching method is proposed. The main content of the original theoretical morphology is turned into experimental theory, which makes the teaching content more intuitive, image and concrete, easy to master; the integration of theory and experiment can greatly stimulate students' interest in learning and improve teaching quality and learning effect. In addition, due to the lack of comprehensive planning and rational planning for the teaching materials of the current inspection professional courses, the teaching content between the courses has been repeated, such as disjointed; such as "Clinical Immunology Test" and "Clinical Microbiology Test" have flow cell technology content, such as hepatitis B serological markers, each

4.3. Improve the Practical Teaching System and Pay Attention to the Cultivation of Professional Skills

The design of traditional experimental teaching content is more about the verification of a certain theory , the process is simple and passive; the teachers and students pay less attention to it, ignoring the mutual promotion between theory and experiment; in order to improve students' practical ability and professionalism Practical skills, adhere to the comprehensive experimental, design-based experiments, supplemental experiments supplemented by the new form of experimental teaching, can not only strengthen the basic skills training of students, but also cultivate their comprehensive quality ability; implement the theory of the full-course responsibility of the teacher Effectively avoid the possibility of low-grade teachers serving as experimental lecturers. Fourth, adhere to the

open laboratory system and increase students' independent learning space. Students can conduct independent research on experimental topics and introduce innovative thinking and skill methods into experiments. Personalization and initiative.

4.4. Improve the Teaching Quality Monitoring and Evaluation System to Ensure the Quality of Teaching

Formulate and improve the rules and regulations of teaching operation management, clinical teaching and internship management, student status and degree management, teaching quality management, teaching research and reform management, as well as quality standards and evaluation documents for each major teaching link. Establishment of teaching quality monitoring system consisting of the target system, quality standards, information collection, evaluation and feedback, regulation and other sectors. The classroom teaching has formed a three-level evaluation system for the evaluation of the school expert supervision team, the leadership of the second-level department and the evaluation of the teachers, and the evaluation of the students; the teaching guidance documents include the sampling and evaluation of the syllabus, teaching schedule, preparation notes, lesson plans, courseware, etc. In the examination section, strict monitoring is carried out on the whole process of the mid-term and final-term examinations; in practice, the two-level supervision departments of the department and department monitor the practice base and practice teaching. Finally, through the analysis of students' various assessment results, analysis reports and other related materials to reflect the comprehensive quality of the teaching process; in addition, also carry out irregular graduate survey feedback.

5. Study on the Cultivation Profile of Innovative and Entrepreneurial Talents in Medical Testing

The data collection of this paper adopts the way of questionnaire survey. Firstly, by reading a lot of literature, the questionnaire was designed for the research content of this paper. A total of 300 questionnaires were distributed, 292 were returned, 289 were valid, and the effective return rate was 98.9%. The results of the questionnaires were then counted and analysed using SPSS 22.0 software, and t-tests were conducted. The t-test formula used in this paper is shown below.

$$t = \frac{\overline{X} - \mu}{\frac{\sigma X}{\sqrt{n}}} \tag{1}$$

$$t = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}(\frac{1}{n_1} + \frac{1}{n_2})}} \tag{2}$$

5.1. Attitudes of Medical Laboratory Students towards Innovation and Entrepreneurship

The results regarding medical laboratory students' attitudes towards innovation and entrepreneurship are shown specifically in Table 1.

The survey found that when asked about their plans after graduating from university, 37.1% of students chose to enter graduate school, 44.9% chose to work, 52% chose to study abroad and only 12.8% chose to start their own business. When asked "what is your attitude towards innovation and entrepreneurship", 64.2% of students support it, 45.6% actively participate in it, 3.5% oppose it and

13.1% are neutral, neither opposing nor supporting it; when asked "whether you will choose to start your own business", 17.2% of students have When asked if they would choose to start their own business, 17.2% of the students had the intention of starting their own business, 10.2% were in the process of starting their own business, 48.5% had the idea of starting their own business but did not actually do so, and 24.1% had never considered starting their own business; when asked if they had participated in the practical training, practice or other related activities organised by the school on tourism innovation and entrepreneurship, only This shows that students' attitude towards innovation and entrepreneurship is not very positive, so universities should pay attention to strengthening the understanding of innovation and entrepreneurship education and guiding students' interest and enthusiasm for innovation and entrepreneurship.

Table 1. Results of the survey on intention to graduate

	Number of people	Percentage
Examinations	107	37.1%
Employment	130	44.9%
Study Abroad	15	5.2%
Entrepreneurship	37	12.8%

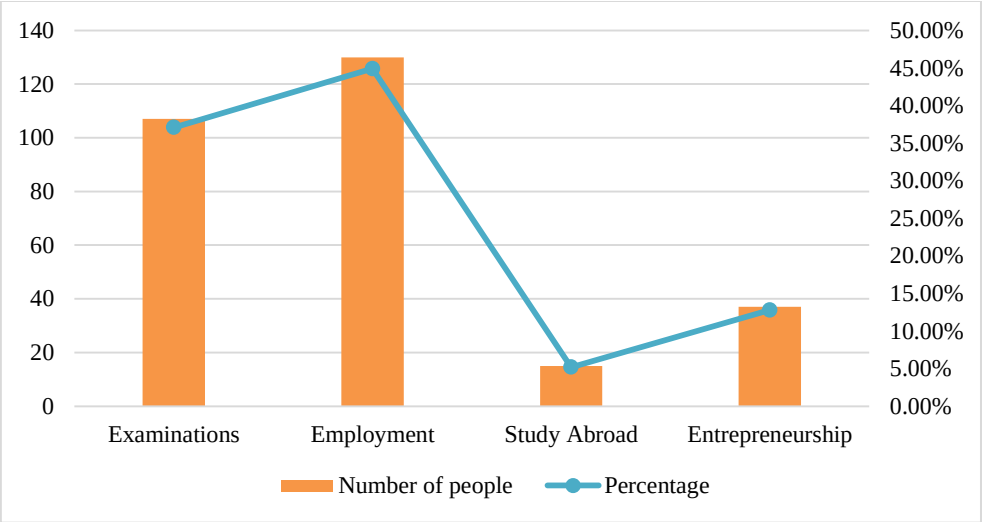

Figure 1. Results of the survey on intention to graduate

5.2. Medical Laboratory Students' Perception of Innovation and Entrepreneurship

When asked "whether they know about innovation and entrepreneurship", only 5% of students know a lot about innovation and entrepreneurship, 75.4% know some, and 19.7% do not know anything about innovation and entrepreneurship; when asked "through what form do you know about innovation and entrepreneurship? "When asked, 33.9% learned about innovation and entrepreneurship through lectures, 40.1% learned about innovation and entrepreneurship through online videos, only 4.5% learned about innovation and entrepreneurship through books, 13.8% learned about innovation and entrepreneurship through professional courses set by the college, and 7.6% learned about innovation and entrepreneurship through social practice (see Figure 2).

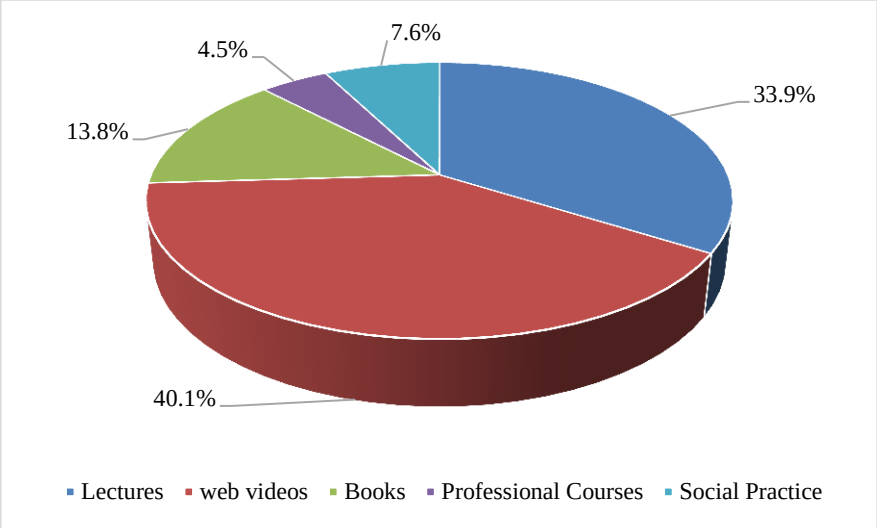

Figure 2. Results of the survey on access to innovative entrepreneurial content

It is clear from this that innovation and entrepreneurship courses are not yet widely available in schools, and most students learn about innovation and entrepreneurship through lectures and online videos, and rarely through the special courses offered. Therefore, universities should therefore optimise their curriculum system and offer courses on innovation and entrepreneurship to enhance students' understanding and meet their needs for innovation and entrepreneurship knowledge.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

6. Conclusion

As the most innovative and entrepreneurial social group, college students are the most active and active factors in the process of building an innovative country. Innovation and entrepreneurship education is a concrete manifestation of quality education in the era of knowledge economy. Constantly exploring new modes of innovative education, igniting the entrepreneurial enthusiasm of students, and cultivating innovative and entrepreneurial high-quality talents are one of the important tasks of the teaching reform of medical laboratory and the inevitable trend of education reform and development under the conditions of socialist market economy. According to the emerging new situations and new problems, we constantly adjusted our work ideas and practices, and established a unique innovation and entrepreneurial talent training system to better meet the diversified needs of the society for medical inspection professionals.

References

[1] Tagg R. The Innovation Hyperlab - Linking Student Innovation at University and Pre-College Levels. APS Meeting. APS Meeting Abstracts, 2012.

[2] Hong J I, Fei Z Y, Zhang G H, et al. Practice and Reflection of Innovation and Entrepreneurship Education in Local Applied Universities. Research & Exploration in Laboratory, 2016.

[3] Government of Canada, Treasury Board of Canada, Secretariat, Treasury Board of Canada Secretariat, Transfer of Federal Non-Regulatory Laboratories: Independent Panel of Experts. Inter-Sectoral Partnerships for Non-Regulatory Federal Laboratories.

[4] Teixeira Bohrer C, Eduardo R D V. Can R&D be identified and measured in services? Empirical evidence from university hospitals. Science & Public Policy, 2014, 41(6):793-808. https://doi.org/10.1093/scipol/scu009

[5] Soleimani F, Zenios S. Disrupting incrementalism in health care innovation. Annals of Surgery, 2011, 254(2):203-8. DOI: 10.1097/SLA.0b013e3182251538

[6] Mourtzis D, Doukas M, Bernidaki D. Simulation in Manufacturing: Review and Challenges ☆. Procedia Cirp, 2014, 25:213-229. https://doi.org/10.1016/j.procir.2014.10.032

[7] Brooks A W, Huang L, Kearney S W, et al. Investors prefer entrepreneurial ventures pitched by attractive men. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111(12):4427-4431. DOI: 10.1073/pnas.1321202111

[8] Takahashi S, Wu J. An International Investigation of Driver's Licenses for Dementia Patients with Considerations of Their Social Circumstances. 2011.

[9] Yusuf S, Nabeshima K. Can Malaysia Escape the Middle-Income Trap? A Strategy for Penang. Policy Research Working Paper, 2016.

[10] Huang L, Wang Y, Yan L, et al. Exploration and Practice on Undergraduate Innovation and Enterpreneurship Training Program for Laboratory Medicine. Continuing Medical Education, 2016. DOI:10.3969/j.issn.1004-6763.2016.03.010

[11] Wang K. Exploration on the Practice of College Students' Innovation and Entrepreneurship. Journal of Shandong Institute of Commerce & Technology, 2017.

[12] Cai S, Tang Z, Chen J. Establishment of school-enterprise cooperative education training system of medical laboratory technology specialty based on position investigation. China Medical Education Technology, 2017.

[13] Ye F. Research on the Practice of Innovation and Entrepreneurship Education Based on the Cooperation of School and Enterprise——Taking Zhejiang Agricultural Trade and Trade Career Academy as an Example. Journal of Jiamusi Vocational Institute, 2017.

[14] Ding L, Wang H. Research on the Present Situation of College and University Students' Innovation and Entrepreneurship——Taking Higher Vocational Colleges as Example. Innovation Science & Technology, 2018.