

# Cultivate Innovative and Entrepreneurial Qualities among Medical Students through Curriculum Ideology and Politics

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## Abstract

As the main body of promoting the development of medical science and technology, medical students play an extremely important role in promoting the construction of new medical science. New medicine is a new concept based on the development of traditional medicine, breaking the discipline barrier, aiming to cultivate composite talents, taking reality as the orientation, and combining with the Internet, big data and artificial intelligence. Cultivating medical students' innovation and entrepreneurship literacy is not only the internal need of the construction of innovative medical talents in new medical sciences, but also the development need of promoting the optimization of medical disciplines and effectively promoting the construction of an innovative country. As the main place for training medical talents, medical colleges and universities should integrate classroom ideology and politics with the new medical background to improve medical students' professional knowledge, professional ethics, humanistic quality and scientific and technological quality, promote the cultivation of medical students' innovative spirit, and further innovate medical theories, technologies and concepts. It lays a solid foundation for cultivating top medical talents with both innovative thinking and cultural self-confidence and building an innovative country.

## Keywords

Innovative and Entrepreneurial Qualities, Curriculum Ideology and Politics, Medical Students

## 1. Introduction

Medicine is a discipline that studies diseases and health, with its research focus on humans. It encompasses both natural sciences and humanities and social

sciences. The purpose of curriculum ideology and politics is to align all courses and ideological and political theory courses towards a common goal, in order to promote collaborative education. Curriculum ideological and political construction is an essential approach for medical colleges to enhance the humanistic quality of medical students and train medical workers with strong medical ethics. The training of medical students requires a combination of theoretical knowledge and practical experience in clinical settings. The unique nature of medical students' training mode makes the ideological and political work more complex. Medical students who have not formally entered society are more susceptible to its influence. Without an objective understanding of the problem, they are prone to forming one-sided views, which can undermine the effectiveness of ideological and political education. Therefore, ideological and political education for medical students is particularly important.

In the process of training medical students, "doctors with benevolence" and "great doctors with sincerity" are typical summaries and essential requirements for the medical professional spirit. The ideological and political work of medical colleges and universities must integrate social morality with the specific moral obligations of the medical profession in order to fulfill the essential objective of fostering morality and developing individuals. At present, in order to promote the comprehensive development of medical students, the state strongly advocates and requires the strengthening of professional ethics and humanistic qualities, as well as the improvement of innovation and entrepreneurship abilities, alongside the cultivation of professional knowledge and skills. Therefore, ideological and political education is integrated into all aspects of the medical students' training objectives. The construction of "curriculum ideology and politics" in medical colleges is helpful to grasp the regularity of medical students' growth and political quality training, guide students to find their role positioning, establish the medical value orientation of "people's health first", and help cultivate medical talents who meet the requirements of the new era.

## **2. Improve Medical Students' Professional Skills Based on Curriculum Ideology and Politics**

Medical education encompasses not only the instruction of medical knowledge and technology, but also the development of medical students' sense of social responsibility and strong professional ethics. Therefore, ideological and political education in medical schools is of utmost importance. Through the teaching reform of "curriculum ideology and politics," ideological and political education in colleges and universities can be integrated into every aspect of the teaching process, fostering the cooperative cultivation of high-quality talents.

First of all, professional courses play a crucial role in enhancing the medical professional level. They serve as a significant platform for integrating ideological and political theory education and implementing educational reforms that focus on character development. Professional teachers should clearly prioritize the

empowerment of students as the central focus of teaching activities, with a focus on developing their abilities and enhancing their overall quality. This approach should be guided by new teaching concepts. The concept of “great health” [1] changed the health content, work center, and service scope of China’s traditional health services, and emphasized the significance of disease prevention. Teachers in medical colleges and universities should adhere to the principles of student growth. They should fully integrate online and offline teaching methods in their classes. This can be achieved through teacher-led discussions, case studies, argumentative teaching, situational simulation teaching, and other effective teaching methods. It is important to integrate professional curriculum content with ideology and politics, and to emphasize the importance of general medical education and preventive medicine education. Enhance the ability to promote health and address practical clinical problems. The construction of curriculum ideology and politics in medical colleges aims to enhance the persuasiveness, appeal, and leadership of professional courses. This is done to make them more “ideological and political” and to transform professional courses that lack ideological and political elements into courses that have such elements. In the construction of a medical curriculum, it is important to incorporate and be guided by ideological and political education. By efficiently combining ideological and political education with medical professional knowledge, students can enhance their spiritual experience and promote the internalization of medical knowledge and the development of moral sentiments. This approach aims to cultivate practitioners who possess both high professional skills and strong medical ethics.

In order to enhance clinical skills, it is important to establish a comprehensive clinical practice teaching system that integrates basic and clinical knowledge, theory and practice, and collaboration between schools and colleges. Strengthen the “actual combat” and “situational” training of preliminary basic experiments, increase the scope of comprehensive and self-designed experiments, and prioritize the cultivation of students’ abilities in scientific research design and innovation. By integrating case teaching, the training of clinical abilities will be integrated throughout the entire process, with a focus on addressing the challenges that hinder the development of medical students in practical teaching. This approach will promote the reform of teaching methods, guided by students’ independent learning. In formulating the training program, we fully utilize various platforms such as micro-videos and Chinese university MOOCs. We also incorporate different teaching scenarios to enhance professional knowledge learning. Additionally, we integrate ideological and political education content throughout the entire teaching process. Based on the background of “Integrating ideological and political theory education into the whole course” and considering the characteristics of the medical laboratory major, this paper conducts research on the integration of ideological and political theory education into the entire curriculum. It aims to organically incorporate ideological and political theory education into the content of professional courses and assign the professional course

with a significant role in value orientation [2]. A study conducted at Kunming Medical University naturally integrates ideological and political education into the teaching of medical parasitology. It aims to create an educational model that combines specialized courses with courses on ideological and political education [3]. In addition, the curriculum incorporates thought and politics into forensic science [4] and stomatology [5], as well as other medical students' professional talent training. In the practical teaching process and curriculum, there is always an emphasis on the integration of ideological and political aspects. We consistently uphold the values of protecting life, saving the lives of the critically ill, and healing the wounded. We also prioritize professional honor and respect, ensuring that we do not compromise the spirit of medical ethics. In practical activities such as clinical practice or situational simulation learning, medical students can not only acquire professional skills and apply what they have learned, but also identify their weaknesses, develop a stronger interest in learning, and cultivate a sense of social responsibility.

In general, it is necessary not only to implement horizontal integration in teaching content, by shifting the course design from exam-focused to disease-focused, but also to seamlessly integrate ideological and political theory education into the content of professional courses. This gives professional courses a crucial role in promoting value orientation. The effective integration of teaching mode reform and ideological and political elements is a necessary condition for the seamless integration of professional knowledge and curriculum-based ideological and political education.

### **3. Strengthening the Professional Ethics and Humanistic Qualities of Medical Students through Curriculum Ideology and Politics**

The uniqueness of the medical profession determines the specificity of medical personnel training. While enhancing the theoretical knowledge and clinical proficiency of medical students, it is important to prioritize the cultivation of their medical ethos, which includes “respecting life, saving the dying and healing the wounded, being willing to contribute, and having boundless love.” Medical humanistic quality education runs through the entire process of training medical professionals [6] [7]. Peng Rui Cong, the secretary of the Party Committee of Peking University, wrote to the class of 1986, stating that “Medicine encompasses the three aspects of science and technology, art and compassion, and the harmonious integration of truth, goodness, and beauty.” It shows that Peking University Health Science Center attaches great importance to the construction of medical humanities and the tradition of cultivating the humanistic spirit among graduate students in the field of medicine. In November 2018, Peking University officially approved the establishment of the Department of History of Science, Technology, and Medicine, as well as the CAST-PKU Joint Institute for Science Culture. This marked the beginning of a new phase in the integration of

resources for the development of the disciplines of History of Science and Technology, and History of Medicine.

The humanities are playing an increasingly important role in medical training. Improving the humanistic literacy of medical students is beneficial for enhancing their ability to communicate with patients and improving their comfort in the clinical environment [8]. It also helps them to better listen to and observe the diagnosis results of patients [9] [10]. In the course of teaching, teachers should pay attention to integrating professional courses with humanistic social practice. This will promote the integration and co-construction of the spirit of medical science and humanistic values. The field of visual arts is effective in teaching observation and description skills, which can be successfully applied to medical training. Some studies have found that training medical students in art observation can improve their clinical ophthalmology observation skills [11]. In the process of integrating professional courses with humanities courses, we should actively incorporate fresh examples to enhance the subtle impact of professional courses on the development of students' humanistic qualities. In terms of organization and management, the school should provide guidance and encourage medical students to enhance their interpersonal communication skills and self-management abilities in practice. To cultivate a campus environment that is infused with medical humanistic values and to implement medical humanistic education for medical students, leveraging the distinctive cultural ethos of medical colleges, in order to foster cultural education seamlessly. In addition, expand the range of elective courses and implement the second classroom system, and utilize the second classroom by utilizing various resources such as medical humanities, characteristic activities, general education, and social practice. These initiatives aim to enhance students' ideological and political literacy, guiding them to address national strategic needs, future human development, and the forefront of fundamental disciplines. We should establish lofty ambitions and take on the responsibility of solving the problems of human development.

#### **4. Improve the Innovation and Entrepreneurship Abilities of Medical Students through Curriculum Ideology and Politics**

Innovation is the soul of social progress, and entrepreneurship is a crucial means to foster economic and social development and enhance people's well-being. Innovation and entrepreneurship education is primarily focused on cultivating innovative talents. Its fundamental task is to foster morality and develop individuals. The main objective is to drive high-level reform in innovation and entrepreneurship education. The education of college students in innovation and entrepreneurship is highly valued by governments around the world. "Innovation and entrepreneurship education in the United States has been integrated into the national education system. The National Standards for Innovation and Entrepreneurship Education published in 2001 not only specify the curriculum of innovation and entrepreneurship education in the United States, but also

clearly explain the curriculum units and the competency standards for each unit.” The German government has made it clear that universities should become furnaces for entrepreneurs. In Australia, innovation and entrepreneurship education has been conducted in universities for more than 40 years, and the Indian government’s 1986 National Education Policy explicitly requires universities to develop students’ “attitudes, knowledge and skills needed for self-employment.” Kenya’s Ministry of Technical Training and Skills Development stipulates that “all qualified vocational schools should set up innovation and entrepreneurship education laboratories and small business centers.” The development of innovation and entrepreneurship education in China can be roughly divided into three stages: the initial stage from 1989 to 1998, the rising stage from 1999 to 2001, and the extensive dissemination stage from 2002 to now. At this stage, we advocate integrating innovation and entrepreneurship education with the development of “new engineering, new medical science, new agricultural science, and new liberal arts”. Furthermore, we aim to promote a strong connection between innovation and entrepreneurship education and professional education. The new field of medical science aims to promote the seamless integration of modern information technology and medical education. It seeks to establish a talent training system for “new medical science” that aligns with the “bio-psychology-society-environment” medical model and caters to the entire lifespan of individuals’ health. Currently, countries worldwide are exploring new training models with the goal of enhancing the development of college students’ innovation and entrepreneurship skills, and overall improving the quality of talent training. In 2015, the state issued the Implementation Opinions on Deepening the Reform of Innovation and Entrepreneurship Education in Colleges and Universities. This document proposed to strengthen innovation and entrepreneurship practice and subsequently introduced the national innovation and entrepreneurship training plan for college students. Additionally, the Management Measures for the National Innovation and Entrepreneurship Training Plan for College Students were formulated. The purpose is to enable students to experience and understand the entire process of scientific research through innovative training programs focused on clinical, public health, and pharmacy issues. The aim is for students to perceive the “peak experience as a scientific researcher” and to stimulate their interest in scientific research, ultimately helping them achieve personalized development goals. The plan is working. A research group from Nanjing Medical University conducted a questionnaire analysis to examine the factors that influence the ideological and political education curriculum, with the aim of enhancing the scientific research participation and innovation level of medical students. The study revealed that out of the six students with a high level of innovation and entrepreneurship, five had participated in summer scientific research practices or competitions. In contrast, only two out of the six students with a low level of innovation and entrepreneurship had taken part in such activities. In addition, curriculum ideology and politics play an important role in promoting students’ participation in innovation and entrepreneurship training

and achieving meaningful innovation and entrepreneurship outcomes [12]. A survey of 1241 medical students in Fujian Province shows that nearly half of the students participate in undergraduate entrepreneurship and innovation projects, as well as other scientific research projects. Furthermore, most of the participants demonstrate high self-motivation and positive learning abilities, and excel in creative thinking. It shows that early guidance in school life can stimulate creativity, and engaging in early scientific research work can promote the development of innovative thinking [13]. Similar research on the cultivation of medical students' innovation and entrepreneurship literacy is currently being conducted both domestically and internationally. In 2016, the United States identified innovation and entrepreneurship programs by conducting a structured search of 158 medical school websites. With seven courses on educational topics (innovation, entrepreneurship, technology, leadership, healthcare systems, medical business, and enhanced adaptability) and two courses on teaching methods (active learning and interdisciplinary teaching), it was concluded that the program may help students develop their ability to solve complex problems and design programs [14]. The Carl Illinois College of Medicine is developing a groundbreaking approach to medical education by integrating engineering principles into an engaging and interactive curriculum. By educating students about new and innovative technologies for medical products, it provides a unique opportunity for active learning. This helps students understand the current products available on the market and how to enhance them [15]. Introducing practical engineering features into the medical curriculum is beneficial for enhancing the innovative thinking and future entrepreneurial skills of medical students. The University of Utah's seven-month medical innovation and entrepreneurship program, "From Lab to Bed," involves teams of students from various disciplines collaborating to identify healthcare issues and create innovative technological solutions. Research confirms that student-led medical technology innovation programs aimed at addressing global health needs are an effective means of generating new solutions to improve global healthcare [16]. At the same time, teachers should actively develop new curriculum for ideological and political courses to improve the innovation and entrepreneurship abilities of medical students. This will serve as a guidance to strengthen the collaborative education mechanism for medical teaching and research. Most medical students do not receive formal educational training on the innovation process, specifically on how to successfully develop good ideas for clinical and commercial implementation. In addition to a lack of formal education, medical students face resource and time constraints in acquiring the necessary skills to effectively navigate this innovative and entrepreneurial environment.

## 5. Conclusions

We summarized the importance of curriculum ideology and politics in the training of medical students. Curriculum ideology and politics run through the professional theoretical knowledge and skills education, humanistic quality edu-



cation, and scientific innovation ability training of medical students.

1) In terms of professional theoretical knowledge and skills education, ideological and political theory education is organically integrated into the content of professional courses, from exam-centered to disease-centered, which makes professional courses have an important value orientation and also helps to cultivate the learning interest and social responsibility of medical students.

2) In the aspect of humanistic quality education, the integration of ideological and political theory education can promote the integration and co-construction of medical spirit and humanistic value, which is conducive to enhancing the ability of medical students to communicate with patients and better exercise the functions of doctors.

3) In terms of scientific innovation ability training, ideological and political courses improve medical students' scientific research quality and innovation and entrepreneurship ability and have guiding significance for strengthening medical teaching and research collaborative education mechanisms.

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## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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