

Exploration of ideological and political education in polymer chemistry based on online teaching mode

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ABSTRACT: Polymer chemistry is a core basic course in majors of applied chemistry. Integrating its rich ideological and political elements into classroom teaching is the basic requirement of teaching reform and innovation of specialized courses. Moreover it is also the only way to achieve the fundamental goal of "establishing moral integrity in cultivation". In this paper, in the special period of the COVID-19, the ideological and political elements are naturally integrated into the polymer chemistry classroom teaching through the online teaching mode, such as xuexitong, tencent conference, wechat, QQ and other platforms with the form of micro-video, storytelling and sharing. To enable students to actively improve their ideological and moral quality while mastering professional knowledge. So as to cultivate comprehensive high-quality talents with ideals and beliefs and moral sentiment.

KEYWORDS: ideological and political education; polymer chemistry; online teaching; teaching exploration

I. INTRODUCTION

Curriculum ideological and political education is the proper integration of ideological and political education and moral education into curriculum teaching. It is a new concept and new model for colleges and universities to carry out ideological and political work in the new era. It is the full embodiment of the main responsibility in the construction of "curriculum ideological and political" by taking "building morality and cultivating people" as the central link of university work^[1,2]. Polymer Chemistry is a professional basic course of applied chemistry in our university. It is also a course following the "four basic chemistry" courses, and is called "the fifth chemistry". The polymer compounds involved in this course are closely related to all aspects of daily life and national construction. This course not only includes rich knowledge points, which contain a lot of ideological and political elements. Being able to integrate these ideological and political elements into classroom teaching in real time can not only improve students' enthusiasm for learning this course, but also greatly improve students' ideological and moral cultivation, and help cultivate students' correct world outlook, outlook on life and values. It is of great significance to comprehensively improve students' comprehensive ability. However, affected by the epidemic, our school has effectively implemented the concept of "three aspects of education", and implemented curriculum ideology and politics into the whole process of online and offline teaching. This paper discusses the construction concept, effective ways and effects of strengthening the ideological and political construction of polymer chemistry course during online teaching in our school.

II. IDEOLOGICAL AND POLITICAL CONSTRUCTION CONCEPT OF POLYMER CHEMISTRY COURSE

The rapid development of polymer chemistry is of great significance for national construction and social development.

The variety, quantity and application of polymer polymers have penetrated into almost every field of science and technology and have entered the lives of thousands of households. The annual output of polymer materials in China has ranked the third in the world, which is inseparable from the unremitting efforts and hard work of a large number of polymer professionals. Therefore, there is a large demand for polymer materials professionals, and college students majoring in chemical engineering will be the backbone of the development of polymer science and polymer material research and development and production in China in the future. Their national feelings, heart, and spirit of continuous exploration and innovation will greatly affect the development of polymer chemistry and polymer material development in China in the future. The course of Polymer Chemistry aims to consolidate students' basic polymer theory and basic skills as well as their patriotism, sense of ownership and sense of social responsibility^[3]. The idea is to cultivate and improve students' "national pride" and "national self-confidence"^[4]. And use systematic scientific thinking to integrate correct world outlook, outlook on life and values into classroom teaching, and realize the harmonious unity of explicit education and implicit education^[5].

III. CURRICULUM IDEOLOGICAL AND POLITICAL DESIGN AND IMPLEMENTATION STRATEGY OF ONLINE TEACHING

Affected by the epidemic, online teaching has become the main teaching method, and the online teaching mode is becoming more and more mature and diverse. In online teaching, it is the requirement of the training goal to effectively integrate polymer chemistry with the ideological and political elements of the curriculum to achieve the effect of "turning the spring breeze into rain" and "moistening things without sound".

Fully excavate and sort out the ideological and political elements in polymer chemistry curriculum: Polymer Chemistry is an emerging interdisciplinary subject. Although it has a history of development for decades, a number of great scientists have emerged in the history of polymer chemistry in China, and the patriotic spirit of indomitable and selfless dedication to promote the development of polymer science in China will always inspire generations of students. When talking about functional polymers, we must think of Mr. He Binglin, the "father of ion exchange resins" in China, who resolutely gave up the excellent life of the United States for the development of polymer science in China, and broke through the barriers to return to the motherland. With his unremitting efforts, he successfully synthesized all kinds of ion exchange resins in the world at that time, and established the first factory specializing in the production of ion exchange resins in China. Through the explanation of Mr. He's patriotic deeds, it can greatly stimulate students' sense of national pride and self-confidence, encourage students to unify patriotism, national ambition and service for the country, enhance their sense of responsibility and mission, and gather strength for building a world science and technology power. For example, after continuous efforts, Chinese scientists finally solved the "neck sticking" technology in the production process of nylon - 66. With the rapid development of polymer science in China, polymer materials have penetrated into every corner of daily life and every aspect of national construction. So the ideological and political content of courses related to polymer chemistry and polymer materials is also very rich. Therefore, this course includes too many ideological and political elements from the introduction to each chapter. Reasonably and effectively combining the relevant ideological and political elements can not only fully mobilize students' interest in learning this course, but also increase students' national pride and self-confidence.

Multi-platform helps the implementation of ideological and political education in online courses : Affected by the epidemic, we have to carry out online teaching in the form of Learning Connect platform and Tencent

conference to ensure that the teaching quality is not affected. In the teaching of "Polymer Chemistry" in our school this semester, we made full use of the Internet platform to carry out online teaching of ideological and political courses in various forms. For example, the ideological and political content of relevant courses is

Real-time guidance to achieve all-round and three-dimensional education : The implementation of ideological and political education in the online Polymer Chemistry course is consistent with the offline requirements. We require students to prepare before class, communicate in class and consolidate their thinking after class.

- (1) Before class, carefully check the relevant materials and prepare well. Before each class, students will be assigned relevant preview tasks and required to publish the relevant preview results on QQ group, WeChat group or the platform of Xuetong within the specified time. On these platforms, you can share some good learning materials and exchange your learning experience in time. Teachers can always pay attention to students' autonomous learning and give appropriate guidance.
- (2) Timely introduce ideological and political content in online teaching. Online teaching is a teaching mode conducted during the special period of the epidemic. Under the dual requirements of online teaching and curriculum ideological and political education, it is necessary to carry out reasonable and careful planning and design in combination with the curriculum content, and write new teaching syllabus, new teaching plan, new courseware and other relevant teaching documents that meet the requirements of online teaching and curriculum ideological and political education. In the selection of ideological and political content in the classroom, we should try to select some relevant content that is "close to life" and "close to the hot spots of the times". In online classroom teaching, we can flexibly integrate the ideological and political content of the course into the course teaching content through multiple channels and forms such as "micro video", "ppt demonstration", "flash demonstration" and "student speech". While mastering professional knowledge, students should learn about the country's major policies and the latest research achievements in the field of polymer materials in China in a timely manner, and cultivate students' sense of responsibility and national pride for national construction^[5].
- (3) After class, "think hard", "enjoy sharing" and "communicate well". Post-class summary, communication and sharing is a very important part of learning this course well. A certain amount of homework will be left after each class. The content of the homework is the professional knowledge related to this section and the ideological and political content of the course. There are various forms of homework related to ideological and political work in the course, such as questionnaires, discussions, oral sharing, debates, manuscripts, etc. Through various forms of timely exchange and discussion with students on hot issues related to the ideological and political issues of the course and topics of interest to students, it can not only increase the friendship between teachers and students, but also timely understand the ideological dynamics of students, and provide students with opportunities to show their own ideas. Over time, it will continuously improve students' ability to analyze and solve problems, as well as improve students' language organization ability and expression ability.

Ideological and political teaching effect of online courses : We evaluated the effect of ideological and political teaching of polymer chemistry course this semester through questionnaires. According to the survey, 85.3% of the students believed that they not only mastered the basic knowledge of polymer chemistry, but also had a deep understanding of the ideological and political content of the curriculum contained in polymer

chemistry through various forms of ideological and political teaching. It has greatly increased the interest of students in learning polymer chemistry, and inspired and encouraged everyone's determination and confidence to contribute to the development of polymer science and the exploration of polymer materials in China. 62.5% of the students believe that they have achieved the dual educational effect of knowledge objectives and curriculum ideological and political objectives. 32.8% of students believe that more time should be set aside in classroom teaching for teacher-student interaction, discussion and communication.

IV. SUMMARY

As a core course of applied chemistry, polymer chemistry deeply explores a lot of ideological and political content contained in this course, and integrates ideological and political elements into all links of classroom teaching in a timely and appropriate manner. It not only plays a subtle role in education, but also has a very important significance in comprehensively cultivating high-quality builders and successors.

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