

Path analysis of aesthetic education in the course of Electronic Material Experiment

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ABSTRACT

Aesthetic education, an education mode that integrates aesthetic cultivation, sentiment shaping and soul nourishing, plays a vital role in the forming process of students' moral character and personality. At the National Education Conference, General Secretary Xi Jinping deeply analyzed the urgency of comprehensively strengthening and improving the aesthetic education work in schools, and called for the nourishment of aesthetic education and the edification of cultural essence to enhance students' aesthetic appreciation ability and humanistic quality. This paper expounds the importance and background of introducing aesthetic education in the science and engineering professional course —— "electronic materials Experiment". Then, the article discusses how to integrate the teaching content of "electronic material experiment" with the concept of aesthetic education, and puts forward a series of creative implementation strategies. On this basis, this paper also designs a set of aesthetic education and ideological education effect evaluation system for this course.

KEYWORDS

electronic material experiment; aesthetic education; implementation path

While improving students' aesthetic judgment and humanistic quality, aesthetic education has played a profound influence on the overall development of students. It enables students to better understand and appreciate the beauty, and then form a healthy aesthetic concept and noble moral quality. Aesthetic education plays an irreplaceable role in shaping students' complete personality, stimulating their innovative thinking and enhancing their practical ability, and its value in the modern educational structure is obvious. However, at present, science and engineering disciplines in domestic universities, especially experimental courses, still face many difficulties in the integration of aesthetic education. In view of this, this paper has great practical significance to explore the effective path of implementing aesthetic education in the course of electronic Materials Experiment.

1 Analysis of the importance and background of aesthetic education of science and engineering students

Since the 18th party congress held, xi jinping, general secretary repeatedly reiterated that "ideological and political work is the core of school education", when building a full range of talent training architecture, need to consider the discipline layout, teaching methods, teaching content

and management system, and ideological and political work is like a red line, throughout the education, guarantee the education comprehensiveness, continuity and depth, highlights the higher education for the country and the party to cultivate outstanding talents.

Aesthetic education, as a key link in cultivating students 'patriotism, stimulating innovative thinking and shaping their unique personality, plays a vital role in the process of improving students' comprehensive quality. The primary task of school aesthetic education is not only to improve students' aesthetic ability and humanistic quality, but more importantly, to enrich their spiritual world and inspire their thinking and wisdom. At present, improving the status of aesthetic education in education at all levels, especially in higher education, has become an indispensable part of the education reform.

Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era provides a clear guide for the development of aesthetic education. We should further implement the party's education policy, firmly take the education development path of socialism with Chinese characteristics, to undertake the fundamental task of khalid ents, this is to guide students to form healthy aesthetic concept, make up for the lack of aesthetic education, engineering education tradition, aesthetic education, shape students good moral character, cultivation, intelligence and physique comprehensive development of the fundamental way of socialist builders and successors.

2 The construction and evolution of aesthetic education teaching system in science and engineering teaching

With the continuous improvement of the comprehensive quality requirements of science and engineering talents in modern society, the reform and exploration of the talent training mode in the field of education are deepening. At the same time, the educational administrative departments also pay more and more attention to the integration of aesthetic education elements in the ideological and political courses. In this trend, the aesthetic education teaching in science and engineering universities has initially set up a more systematic framework. Based on their own professional characteristics, educational concepts and other actual conditions, many science and engineering universities have actively explored and innovatively constructed a unique charm of aesthetic education teaching practice mode and operation mechanism. These practice and exploration in the process of the construction of aesthetic education teaching system, both the remarkable achievements and the challenges and difficulties encountered, provide valuable practical experience and profound reflection for the further popularization and deepening of aesthetic education.

However, it is worth noting that among the college educators, there are still some misunderstandings in the understanding of aesthetic education, which is easy to confuse it with art education, art education and other concepts. In order to clarify the connotation of aesthetic education, the general office of the central committee of the communist party of China, the State Council general office released in October 2020 "about comprehensively strengthen and improve the new era school aesthetic education work opinion" made clear that aesthetic education should stick to carry forward the socialist core values, strengthen Chinese excellent traditional culture, revolutionary culture, socialist advanced culture education, aims to help students to set up correct historical view, firm national, positive national, advanced culture, to cultivate students 'sentiment, shaping students' mind, improve students' cultural confidence ^[1].

If the lack of accurate understanding of the connotation of aesthetic education, the practice of aesthetic education may deviate from its core purpose, and there is a risk of deviation from the right direction.

3 The path of implementing aesthetic education in the course teaching of electronic Materials Experiment

In the educational scene of science and engineering universities, aesthetic education is often in the marginal position of neglect, and its formal phenomenon is very obvious, and it is difficult to achieve real integration with professional courses. Science and engineering courses mainly focus on the teaching of basic professional knowledge and practical skills, while the correlation between aesthetic education concept and such courses is not strong, which makes it difficult for teachers to smoothly integrate the elements of aesthetic education in professional courses. Although the school will provide some art appreciation courses and cultural lectures, most of these activities are classified as elective or extracurricular categories, so the allocation of aesthetic education resources is not balanced. The penetration of aesthetic education concept in college education is relatively shallow, and it is difficult to create a strong atmosphere of aesthetic education, which is far from the original intention of aesthetic education. With the rapid progress of economy and society, the demand for electronic technology is constantly rising, and the field of electronic science has shown increasingly rich diversity.

As the cornerstone of electronic technology, the research and development of electronic materials also occupy a pivotal position. Therefore, many universities in China have opened majors related to electronic materials, which highlights the importance of electronic materials research. In electronic professional training system, "electronic material experiment" course training students to master the basic theory of electronic materials and experimental skills key role, its purpose is to deepen the students' understanding of the basic principles of electronic materials, let them master the experimental method, promote the fusion of multidisciplinary knowledge, cultivate their innovative thinking and practice ability, at the same time improve their dialectical thinking ability, enhance their sense of responsibility and mission of scientific development of electronic materials. Deep aesthetic education and ideological elements into the "electronic material experiment" course content, not only can enrich the connotation of the course, improve the quality of teaching, can also for engineering course aesthetic education system construction to provide strong theoretical support and valuable practical experience, to promote the innovation and development of aesthetic education work in colleges and universities is of great significance.

3.1 Integrate aesthetic education into professional knowledge to stimulate students' aesthetic consciousness

The course of "Electronic materials experiment" occupies a core position in the science and engineering education system. It is committed to comprehensively teaching the basic knowledge of electronic materials, including their basic properties, preparation process, performance testing and other aspects, as well as teaching students experimental skills and data processing methods. This course aims to give students a deep understanding of the internal connection between electronic materials and physical phenomena, and to show the wide application of electronic materials in modern technology and their diversified forms. Although the course content is more profound and complex, but it contains the unique aesthetic charm of electronic materials. This aesthetic charm is not only reflected in the fine and complex structure of electronic materials, but also shown in the diversity and innovation of its performance and function. The beauty of electronic materials echoes with the thinking of natural landscape and philosophy of science, weaving a fascinating scientific map together. In the teaching process, teachers can take the development process of electronic materials as the context, and introduce the spiritual characteristics, innovative thinking and scientific research experience of outstanding scientists, so as to stimulate students' resonance and

respect, and encourage them to devote themselves to learning with more enthusiasm and firm faith. At the same time, teachers can also combine complex theoretical knowledge with aesthetic elements to transform abstract concepts into concrete and tangible images of beauty. Such a teaching method can not only inspire students to think dialectically, but also enable them to feel the charm of beauty while learning professional knowledge, so as to stimulate the potential of creating beauty and transmitting beauty ^[2].

3.2 Innovate the teaching mode and encourage students to pursue the footprints of beauty

According to the Opinions on Comprehensively Strengthening and Improving the Aesthetic Education in Schools in the New Era issued by the General Office of the CPC Central Committee and the State Council in October 2020, the core of the current aesthetic education work is to build a scientific and efficient curriculum system of aesthetic education, establish clear goals, enrich the content, and strengthen the curriculum management of aesthetic education practice activities. In the current framework of college education, the traditional teaching methods are still widely used in science and engineering courses such as "electronic materials experiment", which, to some extent, is difficult to meet the actual needs of the aesthetic education development of students in science and engineering.

In view of this, exploring and applying the new teaching mode has become a key measure to improve the aesthetic education curriculum system and promote the improvement of students' aesthetic education literacy. In practice, new teaching models such as project-oriented learning or inquiry learning can be introduced, so as to guide students to carry out independent learning and in-depth discussion around specific electronic material experimental topics or core knowledge points. At the same time, students are encouraged to explore the artistic value, the brilliance of science and technology or the wonders of nature behind these knowledge, and skillfully integrate professional knowledge with aesthetic elements to create a unique course feature ^[3].

3.3 Enrich daily teaching activities and stimulate students' aesthetic creativity

The ultimate pursuit of aesthetic education lies in cultivating college students' ability to keenly capture beauty and actively create beauty in every moment of their daily life, in every step of their study and exploration, and in every step of their career. Deep understanding and effective practice of this concept of aesthetic education is the key for aesthetic education to exert its far-reaching influence and maintain its vitality. Therefore, the education workers in the daily teaching should continue to excavate the rich resources of aesthetic education, have the courage to explore and innovation of aesthetic education teaching strategy, strive to the aesthetic education concept and theory teaching, practice teaching depth, fusion, fully demonstrate the unique art in the field of science and engineering, let the students in the immersive course experience deeply feel the endless charm of aesthetic education, and stimulate their beauty of discipline, the beauty of professional.

Taking the "electronic materials experiment" course as an example, teachers can actively cooperate with colleagues in materials science, electronic engineering and other related disciplines in the teaching practice link, and jointly plan and implement a series of forward-looking and innovative aesthetic education practice activities through interdisciplinary collaboration. Such cooperation serves to help break disciplinary boundaries, promote knowledge integration, and provide students with a more comprehensive and diverse learning experience. For example, a photography contest with the theme of "Exploring the beauty of electronic materials" can be

organized. Students will have the opportunity to operate the microscope themselves, see the microcosm of electronic materials closely, and capture the usual wonder forms through the lens. Through the clever composition and the use of light and shadow, the students freeze the unique beauty of electronic materials under the microscope into photos, showing the microscopic beauty of electronic materials. Such activities can not only exercise students' photography skills, but also stimulate their curiosity and exploration spirit of electronic materials science. In addition, there can also be a creative product design competition for electronic materials. Students need to use the professional knowledge learned in the "electronic materials experiment" course, combined with the concept of artistic design, to design both practical and beautiful electronic materials products. These products can be small objects in everyday life or electronic devices with specific functions. Through design practice, students will learn how to combine scientific principles with artistic creativity to create product^[4] that meet both scientific logic and artistic charm.

3.4 Construct a comprehensive evaluation system of ideological, political and aesthetic education

In order to construct a perfect ideological and political aesthetic education system, it is indispensable to comprehensively and accurately evaluate students' learning effect and educational effect. This requires teachers to carry out a profound innovation to the existing student curriculum performance evaluation system. The fundamental purpose of the evaluation system is not only to test the students' learning harvest in a semester, but also to measure the teaching effect of teachers in ideological and political aesthetic education, so as to provide valuable reference for the continuous optimization of ideological and political education in the future. Most of the traditional teaching evaluation methods focus on examination, mainly examining students' memory and understanding of textbook knowledge. Such evaluation methods are difficult to fully reflect the students' theoretical knowledge into practical ability, nor to accurately judge whether the goal of ideological and political education in the course can be realized. Therefore, if we simply include the content of ideological and political aesthetic education into the scope of the examination, it will not only fail to effectively stimulate students' interest in learning, but may cause their resistance, which runs counter to the original intention of professional courses.

For the course of "electronic material experiment", teachers can comprehensively evaluate students' learning effectiveness by combining the teaching activities in the early stage, recording students' participation degree, the achievements of work creation, and requiring students to write the learning experience of ideological and political aesthetic education. At the same time, teachers can also use the anonymous satisfaction survey, the self-reflection of ideological and political education in the course, and the peer evaluation organized by the college. The core of the evaluation is to find and solve the existing problems, explore the novel and unique and distinctive ideological and political aesthetic education teaching strategies, constantly optimize the course teaching mode, and finally create an efficient and widely applicable course ideological and political aesthetic education teaching system, laying a solid foundation for the comprehensive development of students^[5].

4 Epilogue

In a word, aesthetics, like the rain of the soul, nourishes the growth of the individual spirit, and is the key element to broaden the boundary of the mind and shape a distinct personality. The fundamental mission of aesthetic education is to awaken individuals' sensitivity to beauty, cultivate

their ability to appreciate beauty, and stimulate their inner potential to create beauty. In the highly specialized field of science and engineering, such as "electronic materials experiment", the penetration of aesthetic education, despite many obstacles, also contains great development potential. Through the careful guidance and encouragement of teachers, while teaching the professional knowledge of electronic materials experiment, students' enthusiasm for beauty exploration is stimulated, and then realize the creation of beauty in practical activities. Even in the field of science and engineering, the effectiveness of aesthetic education in colleges and universities can be significantly improved. Therefore, it is particularly critical to deeply integrate the university curriculum and the aesthetic education concept, improve the understanding level of teachers and students on aesthetic education, increase the investment in the infrastructure of aesthetic education, and gradually build and perfect the dual evaluation system of ideological and political education and aesthetic education. This action aims to lead college students to establish a correct view of history, values, cultural consciousness and national identity, shape their noble moral character, enhance their aesthetic level, and strengthen their cultural confidence, which is the solemn mission of aesthetic education in the new era.

Funding

Undergraduate Education Teaching Research and Reform Project of Chengdu University of Information Engineering (Project No.: JYJG2024026)

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