



Research and Practice on Ideological and Political Teaching Design of Production Practice Course in the Direction of Building Environment

Baojun Liu*

Shandong Huayu university of Technology, Shandong Dezhou, China

*lbj138@126.com

Abstract. In order to strengthen the ideological and political quality and professional ethics of talents majoring in building energy and improve the quality of classroom teaching, combined with the concept of "curriculum thinking and politics", taking the core course of building environment and energy application engineering "Production Practice in the Direction of Building Environment" as an example, the curriculum ideological and political elements are deeply explored and the curriculum ideological and political content and unit design are carried out according to the teaching objectives. In the course ideological and political reform of other specialized courses, we strive to realize the organic unity of value guidance, knowledge education and ability training, and learn from each other.

Keywords: Production practice in the field of built environment, Curriculum ideological and political, Instructional design.

1 Introduction

In the 2020 work points of the Department of Higher Education of the Ministry of Education on "Comprehensively promoting the ideological and political construction of college courses", it is pointed out that: give full play to the educational functions of various courses, deeply explore the ideological and political education content contained in each course, promote professional courses and ideological and political theory courses to peer, and realize the organic unity of value guidance, knowledge education and ability training. The integration of ideological and political elements into professional teaching can more implicitly achieve the cultivation goal of ideological and political education, and make ideological and political education integrated into the teaching content of professional courses like "salt" to achieve the silent effect of smoothing things [1].

2 Curriculum Characteristics

"Production Practice in the Direction of Building Environment" is a professional core

© The Author(s) 2024

D. Hu et al. (eds.), *Proceedings of the 2024 5th International Conference on Modern Education and Information Management (ICMEIM 2024)*, Atlantis Highlights in Social Sciences, Education and Humanities 29, https://doi.org/10.2991/978-94-6463-568-3_12

practice course for the major of building environment and energy application engineering, with a total of 120 hours and 4 credits. The main content consists of five internship projects and 20 assignments. The first project is the test and operation of central air conditioning system. The main internship contents are the startup and operation of central air conditioning system, parameter monitoring and collection, fault analysis and elimination, and operation management methods. The second project is the application of HVAC refrigeration electronic technology. The main internship content is the identification and detection of commonly used electronic technology devices, and the principle analysis of commonly used electronic circuits in HVAC refrigeration. The third project is HVAC refrigeration electrical automatic control, and the internship content is the electrical circuit debugging and maintenance methods of common refrigeration equipment. The fourth project is HVAC refrigeration professional operation skills, the internship content is refrigeration professional basic operation skills, copper pipe processing technology, copper pipe welding, small refrigeration system design steps, assembly skills, debugging skills and maintenance methods. The fifth project is production practice. Through the study of this course, students can understand the safety system and technical requirements of production, be familiar with the structure and working principle of professional equipment, master the operation debugging, fault detection and maintenance of professional equipment, cultivate students' all-round quality development of morality, intelligence, physical, beauty and labor, have a high sense of social responsibility, and have a solid foundation of knowledge. Have a certain ability of theoretical analysis, practice and comprehensive application. The prerequisite courses of this course are "Air Conditioning", "Heating Engineering", "HVAC System Debugging and Operation", etc. This course lays the foundation for the subsequent courses such as "Graduation Internship" and "Graduation Design". Through the production practice in the direction of built environment, we can enter the production line, experience labor education personally, and enhance students' sense of solidarity and cooperation.

The course "Production Practice in the Direction of Built Environment" started for the first time in our school in October 2017, and has accumulated a complete set of course resources system and assessment system. In September 2022, the course teaching reform was implemented on the basis of the original course, and the teaching effect of the course was further improved.

It is of great significance to integrate the course ideology and politics into the teaching of specialized courses to cultivate students' patriotic spirit, safe operation consciousness, master work consciousness and great power craftsman spirit.

3 Ideological and Political Design

3.1 Curriculum Ideological and Political Design Principles

Integrating curriculum thought and politics into professional courses does not mean thinking and politics for the sake of thinking and politics, nor can curriculum thought and politics be transformed into a course of thinking and politics, nor can curriculum thought and politics be separated from professional courses. This requires teachers to

deeply explore the ideological and political content of professional courses, design curriculum thought and politics content, and deeply integrate it with professional content, just like "salt". It is integrated into the content of professional courses to achieve the effect of silence.

3.2 Curriculum Ideological and Political Content Design

The difficulty of implementing curriculum ideology and politics in professional courses lies in how to excavate ideological and political elements in the content of professional courses, and how to integrate them into the ideological and political elements^[2]. In the teaching process of "Production Practice in the Direction of Built Environment", teachers should not only focus on the improvement of teaching content and skills, but also carry out effective design of curriculum ideological and political content under the concept of curriculum ideology and politics, and form effective guidance for students' ideological understanding. For example, when explaining the first lesson, first let the students understand the history of the development of China's built environment and energy application major, the earliest can be traced back to 1950, HIT's health engineering major, HIT's built environment and equipment engineering major has the longest history in China, its original name is heating, gas supply and ventilation major. It is because the study of the former Soviet Union education system founded one of the earliest professional, but also the establishment of the earliest pillar of the Department of thermal engineering. In 2013, the major of built Environment and Equipment engineering was renamed as Built Environment and Energy Application Engineering^[3]. China has also been committed to the improvement of human settlements and the study of human settlements. Then let students watch the optimized living environment video, compare the effect before and after the improvement, stimulate students' national pride and professional identity, form a sense of responsibility and mission for the rejuvenation of national industry, and realize the Chinese dream. At the same time, let students realize that there is still a certain gap between China's living environment and the advanced living environment in foreign countries, but China is developing fast. Guide students to study hard and contribute to the development of our built environment and energy engineering.

The course "Production Practice in the Direction of Building Environment" is a key construction course of our college, which has rich online course resources, including videos, animations, pictures, etc. In order to fully mobilize students' learning interest and learning initiative, teachers make full use of information teaching means and use the school's Super Star learning platform to build online courses. In class, students will be asked to sign in with QR code on the platform using the mobile APP of Hyperstar Learning Connect, and participate in class activities by using the functions of discussion, questioning, shaking and other functions of Hyperstar Learning Connect Connect, which will inevitably make use of mobile phones. For some students with no self-discipline, they will take the opportunity to do other things. At this time, teachers can tell examples of celebrities' self-discipline. Buffett once said: If you can't discipline yourself on small things, then you probably can't discipline yourself on big things. Therefore, if you want to become self-disciplined, you must start from small things, a high

degree of self-discipline, must be a desire from the heart, eager to do better, become more excellent. If you can't discipline yourself in 45 minutes of class, what else can we do in the future? Self-disciplined people are not necessarily excellent, but excellent people, certain self-discipline. Let the students understand the importance of self-discipline^[4-5].

The course "Production Practice in the Direction of Building Environment" is a relatively comprehensive course, which should make comprehensive use of drawing, air conditioning design, engineering thermodynamics and basic operation skills of electrical automatic HVAC refrigeration, etc. Whether the course content design is reasonable will affect the learning effect of students and directly affect the production efficiency and economic benefits of enterprises. Even a very small part will affect the overall effect, so students are required to develop rigorous, serious, excellence of professional quality, while cultivating students' sense of ownership of the enterprise.

3.3 Curriculum Ideological and Political Unit Design

The production practice course in the direction of building environment selected the central air-conditioning system test and operation, HVAC refrigeration electronic technology application, HVAC refrigeration electrical automatic control, HVAC refrigeration professional operation skills, enterprise production practice, forming five projects, each project includes different tasks. For example, when visiting enterprises for internships and other content, I explain to students that "freedom" is relative, only by abiding by social laws and regulations and abiding by school rules and regulations, you are free, and if you violate them, you will be constrained, so as to cultivate students' awareness of abiding by the rules and regulations. The specific curriculum ideological and political content design takes the first project as an example, as shown in Table 1.

Table 1. Ideological and political design of production practice course in the direction of built environment.

The number	The name of the learning situation	Learning task	Teaching content and requirements	Curriculum ideological and political design
1	Central air conditioning system inspection and operation	Task 1: Central air conditioning trial operation and commissioning	<ol style="list-style-type: none"> 1. Familiar with the basic knowledge of central air conditioning. 2. Master the operation steps of trial operation and commissioning of central air conditioning. 	Teach the history of professional development to stimulate students' sense of mission and responsibility for the revitalization of national industry; Play a video of the living environment to stimulate students' national pride and professional identity. By analyzing the role and contribution of this major in the current epidemic situation, we can cultivate students' rig-

The number	The name of the learning situation	Learning task	Teaching content and requirements	Curriculum ideological and political design
				orous and meticulous professional quality, so that students can understand the truth that details determine success or failure.
		Task 2: Simulation fault demonstration and troubleshooting	1. Familiarize yourself with common faults of the central air conditioner. 2. Master the central air conditioning simulation fault demonstration and troubleshooting methods.	By watching the video, personal troubleshooting feels the joy of success, and cultivates students' sense of corporate ownership responsibility.
		Task 3: Air handling unit commissioning	1. Familiar with the basic knowledge of air handling units. 2. Master the steps of trial operation of air handling units.	Through the explanation of the basic knowledge of the air processor, students can establish the confidence of "heart has faith, can go far", and cultivate students' lofty goals and beliefs.
		Task 4: Air handling unit parameter detection	1. Familiar with the common parameters of air handling units. 2. Master the steps of air handling unit parameter collection and detection.	Through parameter collection and testing, students are trained to save resources for the enterprise, love the job and dedication of the master responsibility consciousness. Foster the spirit of "craftsman of a great country".
		Task 5: Air handling data processing and calculation	1. Familiar with the common parameters of air handling units. 2. Master the steps of parameter processing and calculation of air handling unit	Through data processing, cultivate students' meticulous craftsman spirit; Cultivate students' professional quality of meticulous and standardized operation through calculation.

4 Course Education in the Teaching Process

With a good curriculum ideological and political content design, but also need to be implemented in the classroom teaching process. The key to the implementation of curriculum ideology and politics lies in teachers, who are the first responsible person in classroom teaching. In order to achieve the curriculum ideological and political and

professional courses in the same direction, we need to have a strong moral education awareness of the teachers, as a professional course teachers, first of all, to have a good teaching ideological and political ability, but also to improve their own moral cultivation. Some course teachers think that ideological and political education for undergraduates is only the voluntary work of teachers and counselors of ideological and political knowledge courses, which has nothing to do with themselves. In particular, political courses of built environment and energy engineering majors are highly professional and have relatively little contact with ideological and political teaching. It is necessary to further strengthen the cultivation of teachers' professional ideological and political ability. In addition to improving teachers' ideological and moral cultivation, strengthening the mastery of political quality and the principle of Marx, we should also use the education of ideological value, political lecture education, and interaction with teachers of different disciplines. Path, improve the ideological and political quality of professional teachers.

5 Conclusion

The implementation of curriculum ideological and political work is a long-term work, and it is a new educational attempt to realize moral cultivation. Because different courses have different characteristics, they also have different elements and teaching resources of curriculum ideological and political work. In order to achieve the same direction of each subject class, ideological and political work and curriculum, and realize the "silent effect of moistening things", teaching methods, content and organization must be considered. Forms, evaluation systems and other aspects continue to explore, innovate and implement.

Reference

1. Notice of the Higher Education Department of the Ministry of Education on the issuance of the Work Points of the Higher Education Department of the Ministry of Education in 2020.
2. Liang Peng; Zhang Huadan; Lin Xianming's Teaching Reform and Practice of "Curriculum Ideology and Politics" in Food Technology. Food and Fermentation Industry, 2020.
3. Liang Peng, ZHANG Huadan, Lin Xianming. Research on teaching reform and practice of "Curriculum Ideology and Politics" in Food Technology. Food and Fermentation Industry, 46 (16), (2019).
4. Yang Jiaoke. Discussion on Ideological and Political Teaching Mode of NC Turning Technology Course. Southern Agricultural Machinery (2020).
5. Jie Mingsha, Guo Ruipeng, Yue Xiaoyue; Liu Mengpei "Food Biotechnology" course ideological and political teaching reform practice and exploration "Light Industry Science and Technology" (2021).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

