

Research and Practice of Ideological and Political Teaching in Networking Technology Course

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Abstract: Based on the orientation of the school, and the needs of the training goals of applied talents in computer science and technology majors, the employment-oriented, ability and quality assessment, as the center of the examination concept is explored in the new stage of the development of computer technology and the new situation of constantly changing teaching methods. While exploring the new ideas and contents of "Networking Technology" course in teaching content and teaching methods, integrating ideological and political elements, improving learning interest, stimulating innovative thinking, enhancing enterprising spirit, and cultivating students' comprehensive ability and quality.

1. Introduction

The ultimate goal of higher education is to cultivate morality and cultivate people, cultivate socialist pioneers and inheritors with a sense of social responsibility, practical ability and innovation ability^{[1][2][3]}. Therefore, ideological and political education is not only the task of ideological and political theory courses teachers, as every teacher in colleges and universities, should establish the consciousness of ideological and political education, and effectively realize the ideological and political work of colleges and universities from ideological and political courses to the transformation of ideological and political courses.

"Networking technology" course is a professional course for computer majors which combines theory and practice, involves a wide range of knowledge, has a great influence, in the traditional teaching focuses on imparting knowledge and training skills, but ignores the educational function of the course. Nowadays, the vast majority of college students are born after the "00" in the Internet information age, so their thoughts are easily influenced by various values and lack the initiative of independent learning^{[4][5]}. Therefore, teachers should not only do a good job in guiding students to be positive, optimistic and upward, shaping students' correct values, but also stimulate students' interest in professional knowledge learning and improve students' enthusiasm for independent learning. Under the mode of ideological and political education, on the basis of student-oriented knowledge impartation, the ideological and political resources in the course of "Networking Technology" and the strategic thinking of network power are deeply excavated, and the ideological and political education and the network power thinking education run through the professional knowledge teaching

of computer science and technology courses. Through the close integration of professional knowledge education, network power thinking and ideological and political education, the value shaping, knowledge impartation and ability training are integrated, which has important practical significance for three-dimensional education.

2. The overall objective of ideological and political education in curriculum

The teaching object of "Networking Technology" is the third year undergraduates of computer major, who have certain basic computer knowledge and theoretical accomplishment. Knowledge objectives: mainly cultivate students to master the basic knowledge of network technology, strengthen the learning of core knowledge and frontier theory, and expand students' horizons and broad interdisciplinary knowledge. Competency objectives: through the study of this course, students have the basic ability to configure switches and routers skillfully, and the basic ability to design and build LANs. They have the ability to deploy TCP/IP applications, the preliminary ability to analyze protocols, and the ability to track new network knowledge and new technologies. In particular, they pay attention to the cultivation of practical and innovative ability, in-depth and independent learning ability. Quality objectives: cultivate students with a pragmatic spirit, based on disciplines and industry fields, pursue excellence and hard work, and become applied talents with patriotic feelings, social responsibility, innovative spirit and practical ability^[6]. Through the integration of professional knowledge education and ideological and political education, value shaping, knowledge impartation and ability training are integrated. It is mainly reflected in the following three aspects:

2.1. In terms of ideology

Through the guidance of values, students' sense of value is cohesive;

2.2. In terms of content

Combining professional characteristics and trainings, with the help of "school-enterprise cloud", "rain classroom" and other teaching platforms to carry out teaching contents, so as to effectively integrate ideological and political elements and professional skills;

2.3. In effect

Increase the students' recognition of the socialist core values, and establish a correct concept of network security.

The implementation of ideological and political education in curriculum.

In order to better integrate the education of network power into the course of networking technology, in the teaching practice, the use of "Rain Classroom", MOOC and other online and offline mixed teaching methods, so that the ideological and political teaching of the course throughout the whole process of teachings, improve the overall awareness of participation. In the classroom, the full use of project-driven method, case analysis method, analogy heuristic method, task-driven and other teaching methods, while increasing the interest of theoretical knowledge, effective ideological guidance. With the goal of cultivating applied talents, and in accordance with the development trend of computer technology, the emerging teaching reform measures in the field of computer education are explored from the aspects of teaching content, teaching form, teaching means and so on. Centering on MOOC, SPOC and other methods, new teaching methods and new contents suitable for computer education are discussed, and the teaching reform attempts to stimulate students' learning interest and conform to the direction of technological development are highlighted. Effectively integrate online

and offline education and teaching, the MOOC/SPOC-based course construction is built, and the research and application practice of new teaching models such as flipped classroom and blended learning are studied.

"Networking Technology" course is a basic course of computer majors on the basic knowledge of network technology in colleges and universities. Therefore, according to the teaching objectives and teaching content of the course, the ideological and political teaching of the course is implemented in the course, so that students of multiple majors in the computer college of colleges and universities can benefit at the same time.

3. The main elements of ideological and political education in curriculum

The specific course design is shown in Table 1:

Table 1: Course design table

Chapter	Teaching objectives and main content of the course	Ideological and political elements of the course
Chapter 1 Network Communication Basis	Teaching objective: Through the study of this chapter, the students master the knowledge of network communication technology.	When explaining the star topology, it is shown that all data transmission and information exchange and management are realized through the central hub equipment, emphasizing the importance of core equipment, and cultivating the core awareness of the students.
Chapter 2 VRP Basis	Teaching objective: In order to make the students better learn and understand the basic principles of network communication technology, reduce the "abstraction" of principle knowledge and enhance the "touch", they must be proficient in understanding and configuring the experimental content of VRP.	Through the configuration of experimental content of VRP, the students can connect theory with practice, practice and carry forward the spirit of craftsmanship.
Chapter 3 Ethernet	Teaching objective: In this chapter, the Ethernet on the computer and switch is the breakthrough point, so that the students can master the principle knowledge of Ethernet.	Adopt the task-driven teaching method, through the explanation of the network design concept, architecture idea, not only cultivate the students' practical ability to deploy the network, but also take into account the factors such as security, environment, culture, law and so on.
Chapter 4 STP Protocol	Teaching objective: through the study of this chapter, students master the fundamental method to solve the problem of two-layer loop faced by Ethernet composed of computers and switches, and have the ability to decide whether to use STP and which kind of STP to use according to the actual situation of the network.	Through the case teaching method to explain the problem of two-layer loop of switch, cultivate the students to pay attention to the actual when facing problems, and develop the ability to solve problems independently by analyzing specific problems.
Chapter 5 VLAN	Teaching objective: through the study of this chapter, students learn to divide the two-layer broadcast domain flexibly and effectively. Have the ability to divide VLAN according to the actual situation of the network, and have the ability to configure VLAN.	Through the task-driven teaching method, students have the ability to divide VLAN according to the actual situation of the network. Education students to solve problems according to the ideological line of seeking truth from facts, learn to unite and help each other, and cultivate the students' sense of responsibility and unity and cooperation.
Chapter 6 IP Basics	Teaching objective: through the study of this chapter, students have a clear understanding of the basic concepts that are easy to be confused, such as two-layer communication and three-layer communication.	When explaining IP address planning, due to the traditional address division, the number of IPv4 addresses is limited, which inspires students to reasonably plan IP addresses and cultivate the concept of saving and innovation.
Chapter 7 TCP and UDP	Teaching objective: through the study of this chapter, students can analyze the differences between connectionless communication and connection-oriented	Through the comparative teaching method, the differences between the two different communication methods are emphasized, the importance of reliable network communication is emphasized, the importance of network security is emphasized,

	communication.	and the awareness of network security is enhanced, so as to avoid various network traps such as telecom network fraud and campus net loan.
Chapter 8 Basic Routing Protocols	Teaching objective: through the study of this chapter, students have the ability to analyze the simple routing protocols in a comprehensive and in-depth manner, and have the ability to configure RIP and OSPF routing protocols.	Design the corresponding problem chain, take the problem as the main line, implement heuristic teaching, and cultivate students' ability to find problems, analyze problems and solve problems.
Chapter 9 Three-layer Communication between VLANs	Teaching objective: through the study of this chapter, students can understand that although different VLANs cannot carry out two-layer communication, they can realize three-layer communication principle and several methods to realize communication.	Through different VLAN can not be carried out two layer communication, but can achieve the principle of three layer communication, extended education students from different perspectives, the same problem will have different treatment methods, to be good at observation, from different angles to solve the problem.
Chapter 10 Link Technology	Teaching objectives: through the study of this chapter, students through the link aggregation link technology, can flexibly increase the connection bandwidth between devices and enhance the reliability between devices.	Adopt the rain classroom discussion teaching method, to "ZTE and Huawei event under the background of the Sino-US trade war" to discuss and reflect from it, inspire students to care about, pay attention to national events, enhance the awareness of network power, pay attention to the development of China's information industry.
Chapter 11 DHCP and Network Address Conversion	Technology Teaching objectives: through the study of this chapter, students understand the basic concept of DHCP, can complete the configuration of DHCP.	Through the network address conversion technology, the communication between the internal network and the external network can be realized, which shows that the connection of things is universal, extended students to deal with the methods and skills of interpersonal relationship, form a good interpersonal relationship.
Chapter 12 PPP and PPPoE	Teaching objectives: through the study of this chapter, master the two technologies of the data link layer.	Through the explanation of the protocol of PPPoE technology, extended the importance of teamwork.
Chapter 13 Network Security and Network Management	Teaching Objectives: Through the study of this chapter, master network security technology, and establish a correct view of network security.	Through the content of this chapter, the students are given network security education. Maintain network security, be the main force, be vigilant against information leakage, network virus, network fraud and other network security accidents in the network, abide by the laws and regulations of cyberspace, and establish a correct view of network security.

4. Conclusion

In order to better integrate ideological and political elements into the course of Network Technology and realize the education of network power, the training program is formulated according to the educational purpose and school training objectives, the course design is carried out, and the online and offline mixed teaching is carried out by using the information teaching platforms such as "school-enterprise cloud", "rain classroom" and "MOOC". In the classroom, the case analysis method, analogy teaching method, project-driven method, discussion teaching method and other methods are fully used to make the ideological and political education of the course run through the whole process of teaching and improve the students' awareness of full participation. While improving the interest of theoretical knowledge, the ideological infiltration is effectively carried out, and the combination of knowledge impartation and value guidance is realized. It is helpful to cultivate students to develop good learning habits, improve students' learning ability, and more conducive to cultivating students' patriotic feelings and understanding the way to get along with people, and inject a new force into the construction of talent training in colleges and universities.

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