

# The exploration and practice research of curriculum ideology and politics in computer network courses

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**Abstract:** Curriculum ideological and political education is a new concept that combines ideological and political education elements with professional course teaching. It aims to integrate ideological and moral education into the entire process of classroom teaching, creating a new teaching model for all-round, whole-process, and whole-student education. By exploring its unique design culture and contemporary values and applying appropriate teaching methods, the computer network course can organize courses effectively, enhancing the educational impact of the course and fulfilling the fundamental task of nurturing students' character. This paper addresses the challenges and difficulties of ideological and political education in computer network courses by identifying the embedded ideological and political education elements in professional courses and their functions. It assigns professional courses the responsibility of leading values. Practice has proven that the teaching reform ideas proposed in this article have strong practicality and replicability.

**Key words:** computer network course; curriculum ideology and politics; teaching reform

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## 1 Introduction

In the process of socialist modernization construction, the influence of ideological and political education has been continuously strengthened. With the progress of the times, curriculum ideology and politics, as a new educational concept and curriculum perspective, has gradually emerged. Its goal is to fully utilize the explicit educational function of ideological and political courses and the implicit moral education value of other courses, so as to realize the all-round and all-encompassing implementation of curriculum ideological and political education, and jointly construct a brand-new system for nurturing ideological and political values. In 2018, it has been emphasized at the National Conference on Ideological and Political Work in Universities: "taking moral education and talent cultivation as the fundamental starting point and foothold of school construction, comprehensively incorporating curriculum ideological and political education into classroom teaching, and achieving a new pattern of all-encompassing education". At this point, the reform of curriculum ideology has been officially launched, and scholars and experts at home and abroad have conducted extensive research on it. The president stressed at the National Conference on Ideological and Political Work in Universities that colleges and universities should strengthen the ideological and political work, and other courses should go hand in hand with ideological and political courses to form a synergistic effect [1].

In the context of the integration of industry and education, curriculum ideological and political reform should

reconstruct curriculum content, explore ideological and political elements, innovate curriculum ideological and political teaching models and methods [2]. However, in terms of the ideological and political education development within the computer network course, it is still in its initial stages, with many areas in need of improvement and refinement. Addressing ideological and political education in the computer network course requires a systematic review of existing research outcomes and the identification of exemplary cases. Additionally, exploring teaching content and implementation methods, as well as analyzing the shortcomings of foundational courses in ideological education, is essential. This will help clarify research directions and further deepen and expand current studies. By fully integrating socialist ideological education with Chinese characteristics from various perspectives, we can comprehensively enhance students' ideological levels and overall competency.

## **2 The orientation of curriculum ideological and political construction**

This section primarily introduces the reforms and innovations of ideological and political education in the teaching of computer network courses. The aim is to integrate elements of Marxism, patriotism, craftsmanship, network security, and a passion for work into the goals of professional talent cultivation, course training objectives, course standards, course lesson plans, and the entire implementation process of course teaching. Throughout the implementation of this course, the teaching team actively integrates professional education with ideological and political education. In terms of specialization, teachers should cultivate self-cognition, form good habits, improve cultural accomplishment and comprehensive quality, and develop a sound personality [3]. By reasonably incorporating ideological and political education into theoretical and practical teaching through pre-class, in-class, and post-class stages, the teaching team vigorously implement the goal of "instilling virtue in every course, and every teacher educating students". They adhere to the principle of "moistening things silently" and delve into the ideological and political education elements within the course, integrating the cultivation and practice of socialist core values, professional ethics, behavior standards, and craftsmanship spirit with the explicit content of the professional course, and exploring the path and method of the ideological and political construction of the course [4].

## **3 Curriculum ideological and political resources mining**

Incorporating curriculum ideological and political education into computer network courses allows instructors to incorporate current challenges faced by the development of computer science in China. Addressing technical challenges that are presently insurmountable can guide students to engage in critical thinking and exploration, inspiring them to contribute to the country's technological advancement through diligent study. Additionally, introducing the achievements of Chinese scientists from various historical periods can evoke the sense of patriotism of young university students.

In today's society, with the widespread use of the Internet, contemporary university students have grown accustomed to accessing a wide range of information and electronic resources online. During the teaching process, it is imperative to strengthen the cultivation of awareness regarding information security and network safety. Through case studies, students can grasp preventative measures, avoiding issues such as personal privacy breaches, campus loans, and becoming victims of online scams. This equips them with strong professional ethics and legal consciousness, helps them develop healthy internet usage habits and provides good services for their future career and personal life.

## **4 Practical case studies of curriculum ideology and politics**

### **4.1 Teaching content: the historical development of computer technology**

Integration of ideological and political education: In classroom teaching, instructors can introduce self-developed high-performance computers such as the "Galaxy", "Sunway", and "Dawning" series, which have achieved world-class standards. Alternatively, they can leverage the remarkable achievements and experiences of outstanding figures in the industry and academia as entry points to share current events and cutting-edge accomplishments in the IT industry with

students. This approach helps students gain an understanding of the global level of development and cutting-edge technology in the information industry and grasp the pivotal role of informatization in the country's future strategic planning. Additionally, it guides students to contemplate the impact of the development and application of computers on the economic, military, aerospace, and even political dynamics between nations.

#### 4.2 Teaching content: representation and encoding of computer information

The Chinese nation boasts a long history and profound traditional culture. As inheritors, promoters, and builders of Chinese culture, university students play a crucial role in its development. Their attitude towards traditional culture significantly influences their own growth. Binary representation is similar to the Chinese concept of Yin and Yang, and octal representation has a connection to the Eight Trigrams. Therefore, students can be encouraged to represent trigrams in the format of computer encoding. This not only aids in training their understanding of numerical systems but also deepens their understanding and appreciation of traditional culture.

### **5 Analysis of the implementation path of curriculum ideology and politics**

#### 5.1 Teaching method reform

By employing methods such as case-based teaching, seminar-style teaching, flipped classroom, and exemplary teaching, the ideological and political education themes outlined in the curriculum revision are integrated into the course instruction. Emphasis is placed on student participation and interaction during the teaching process. The course is designed with at least six specific thematic tasks, providing students with the opportunity to acquire knowledge and skills while completing these tasks. Through the guidance of instructors, students will form their own values and judgment criteria in the process.

#### 5.2 Expansion of teaching time and space

The application of various teaching methods in ideological and political education, especially seminar-style teaching with extensive discussions and presentations, may consume a significant amount of time and effort. In order to save classroom teaching time, both physical and virtual spaces within and outside the school will be utilized. This will be achieved through the integration of online teaching platforms and various mobile devices. By doing so, we aim to promote the reform and practice of teaching *Computer Networks* under the ideological and political education framework, ensuring the expansion of teaching time and space.

#### 5.3 Reforming teachers' ideological understanding

The key figure in ideological and political education is the instructor of the specialized course. This approach sets higher requirements for the instructors. They should not only be proficient in the knowledge of the specialized course, but also understand and convey the social values that underlie the knowledge. Ideological and political education aims to address the relationship between knowledge and morality, preventing the occurrence of a superficial separation between ideological and political education and specialized instruction during the process of knowledge transmission.

### **6 Conclusion**

University teachers should actively explore how to fully utilize computer-related courses to provide students with a broader understanding of foundational computer knowledge. By integrating knowledge in the field of computer science with other disciplines, and infusing elements of ideological and political education into computer-related courses, we aim to enhance students' overall qualities, including their perspectives on life, values, and worldviews. This paper constructs a research framework for the ideological and political education reform in computer network courses, focusing on three aspects: course introduction, exploration of ideological and political education elements, and analysis of the implementation path of ideological and political education in the curriculum. This ensures that ideological and political

education is comprehensively integrated into students' learning process, thereby elevating their ideological awareness and moral character.

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### **Conflicts of interest**

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

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