

# Course Ideological and Political Demonstration Major Construction Practice: Taking Electronic information engineering Technology Major as an Example

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## Abstract

**This paper takes the ideological and political construction of courses in the major of electronic information engineering technology as an example, analyzes the necessity of ideological and political education in the curriculum, explores the ideological and political education elements contained in the professional courses of electronic information engineering technology, improves the ideological and political teaching design of the curriculum, creates a teaching model that integrates ideological and political elements, constructs a curriculum group of Internet of Things technology and electronic product design, and proposes value modeling The trinity curriculum ideological and political teaching system of knowledge transfer and ability cultivation realizes the unity of professional education and ideological and political education.**

## Keywords

**Electronic information engineering technology, Teaching reform, Value Shaping, Knowledge transfer, Ability development.**

## 1. Introduction

The curriculum of ideological and political education is not an additional activity or a new course, but rather a process of integrating ideological and political education in colleges and universities into all aspects of the teaching process of professional courses, so as to achieve moral integrity, cultivate people, moisten things, and be silent. Currently, the research on teaching reform with curriculum ideology and politics as the core has become one of the important contents of teaching reform in major universities[1].

Due to the initial stage of curriculum ideological and political teaching reform, there are still some problems that cannot be ignored in the specific practice of carrying out curriculum ideological and political work, as shown below[2]. One is that some teachers do not have strong ideological and political awareness of the curriculum, and their abilities are insufficient. Currently, there is no consensus on the teaching concept of curriculum ideological and political education in colleges and universities, and not all educators have wholeheartedly accepted its concept. Even some educators are not satisfied with this, let alone translate it into practical teaching activities. There is still a problem in colleges and universities where the moral awareness of teachers in some disciplines is not strong. Although some teachers are aware of the educational role of their professional courses and also strive to provide ideological and political education to college students in their own classrooms, due to the fact that teachers only have professional methods and skills to teach professional knowledge, general knowledge, and other content, and the lack of ideological and political education ability has affected the implementation effect of the curriculum ideological and political teaching philosophy. The

second is that some courses lack sufficient resources for ideological and political education, and the teaching design is not scientific. In teaching, due to teachers' lack of thorough understanding of ideological and political education, unskilled application of teaching methods in ideological and political education, and insufficient exploration of ideological and political education resources. In terms of teaching links, strengthening "points" while ignoring "aspects", strengthening "joining" while ignoring "integration", failing to carry out systematic and scientific curriculum ideological and political teaching design, the integration method is relatively single, or manifested as inspirational sporadic education, ultimately reflecting the unsatisfactory educational effect of curriculum ideological and political education. The third is that the teaching method of ideological and political education is not flexible and the educational effect is not ideal. The ideological and political reform concept of some universities' curriculum is relatively traditional and lacks innovation. The traditional classroom instillation method is still used. In the classroom, direct propaganda and "instillation" are used, some empty words and great principles are spoken, and rigid imitation is applied. The curriculum cannot be well combined with current social hot issues, and the practical problems in teaching cannot be systematically analyzed using Marxist perspectives.

## 2. Analysis of Current Situation

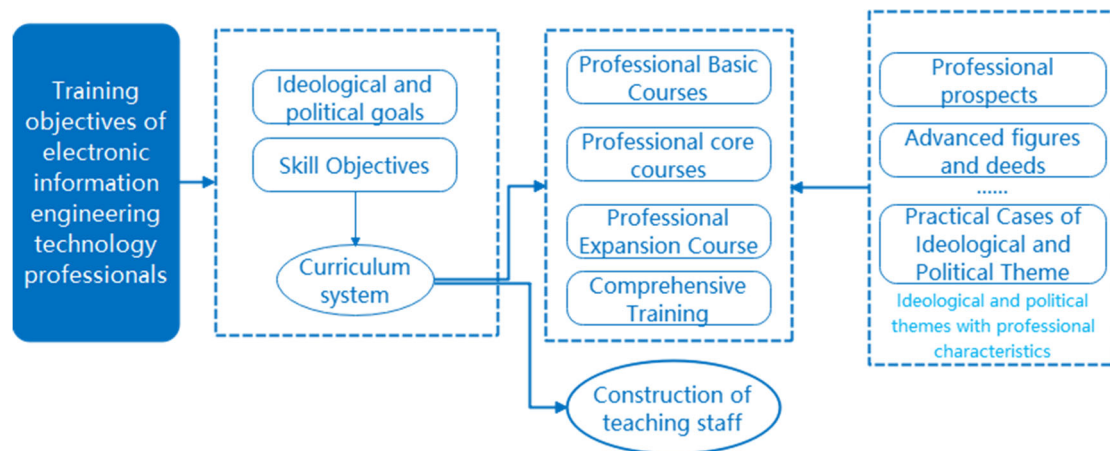
### 2.1. Research background

Through the "double high" construction of the major of Electronic Information Engineering Technology in recent years, we have realized that curriculum ideological and political education and the construction of "double high" professional group have some of the same connotations and requirements. Therefore, based on a deep understanding of the connotation of "curriculum ideological and political education" and an analysis of the current situation of "curriculum ideological and political education" in universities, we have conducted overall planning and design of curriculum ideological and political education. Integrating curriculum ideological and political education into talent training objectives, graduation requirements, curriculum systems, the entire process of classroom teaching, teachers team, evaluation mechanism and so on. Studies the framework and design methods of professional ideological and political goals, constructs a logical, hierarchical, and multi-view ideological and political theme, integrates the design and implementation of professional ideological and political education and curriculum ideological and political education, integrates value shaping, knowledge teaching and ability cultivation in all aspects of professional constructions. Thus, "curriculum ideological and political education" system with the characteristics of electronic information engineering technology has been established a trinity teaching system of value shaping, knowledge teaching and ability cultivation .

### 2.2. Research direction

Based on the above teaching system, develop logical and systematic professional ideological and political objectives, and design different themes of ideological and political according to the logic, knowledge distribution and hierarchy of the distribution of curriculum modules (professional basic courses, professional core courses, professional expansion courses, comprehensive practical courses, graduation projects, etc.) in the curriculum system. So as to clarify the ideological and political objectives of different curriculum groups and plan the key points of construction of "curriculum ideological and political". By analyzing the skill requirements of talent positions and aiming to cultivate positions engaged in intelligent upgrading and digital transformation of electronic products and equipment for electronic information equipment, Internet of Things application systems or automated production equipment, the curriculum system of electronic information engineering technology is divided

into Internet of Things technology curriculum group and electronic product design curriculum group, as shown in Figure 1.



**Figure 1.** Curriculum ideological and political teaching system

### 3. Curriculum Ideological and Political Construction Objectives

The goal of the ideological and political construction of the electronic information engineering technology major curriculum is to insist to the principle of putting people first and cultivating moral integrity. Through systematic professional knowledge and ideological and political education, it aims to cultivate talents with a sound and noble personality, a strong sense of social responsibility, and a sense of national mission, have full confidence in China's electronic information trade, provide strong support for the development of China's intelligent manufacturing, and master interdisciplinary theoretical knowledge such as electronics, communication, and control, have the capable of solving complex issues such as reliability design of digital analog circuits, joint debugging of embedded software and hardware development, Internet of things access and integration, with strong innovation and engineering application capabilities, and engaged in the design and development, technical transformation, system integration and other positions, with good scientific culture and humanistic literacy, professional ethics and craftsmanship spirit, high-level technical and skilled.

### 4. Construction of Curriculum Ideological and Political System

Curriculum ideological and political education is a long-term systematic project that includes schools, secondary colleges, professional teaching and research offices, full-time teachers, and students (seniors) at the implementation level. It requires full participation from the personnel dimension, runs through the entire learning stage of the university from the time dimension. Therefore, from the overall planning of the school, the outline of the secondary school, the organizational planning of the professional teaching and research department, and the implementation of full-time teachers, each performing its own duties, and cooperating with each other, we can better complete the relevant work.

As 70% of the students' courses during their school years are professional courses. The ideological and political system of the courses in the major of electronic information engineering technology is structured in a consistent manner, with the core job skills as the starting point and the professional curriculum reform as the main line. The ideological and political construction of the courses is carried out simultaneously with the construction of professional courses, which is conducive to the integration of ideological and political content

into the teaching of professional courses in a hierarchical and regular manner, to truly achieve “imperceptible influence, moisten things silently”.

The specific content of the ideological and political construction system for electronic information engineering technology professional courses includes professional curriculum ideological and political policies, professional curriculum ideological and political objectives, professional curriculum ideological and political teaching model reform, professional curriculum ideological and political teaching evaluation, and the direct correlation study of the above elements, as shown in Figure 2.

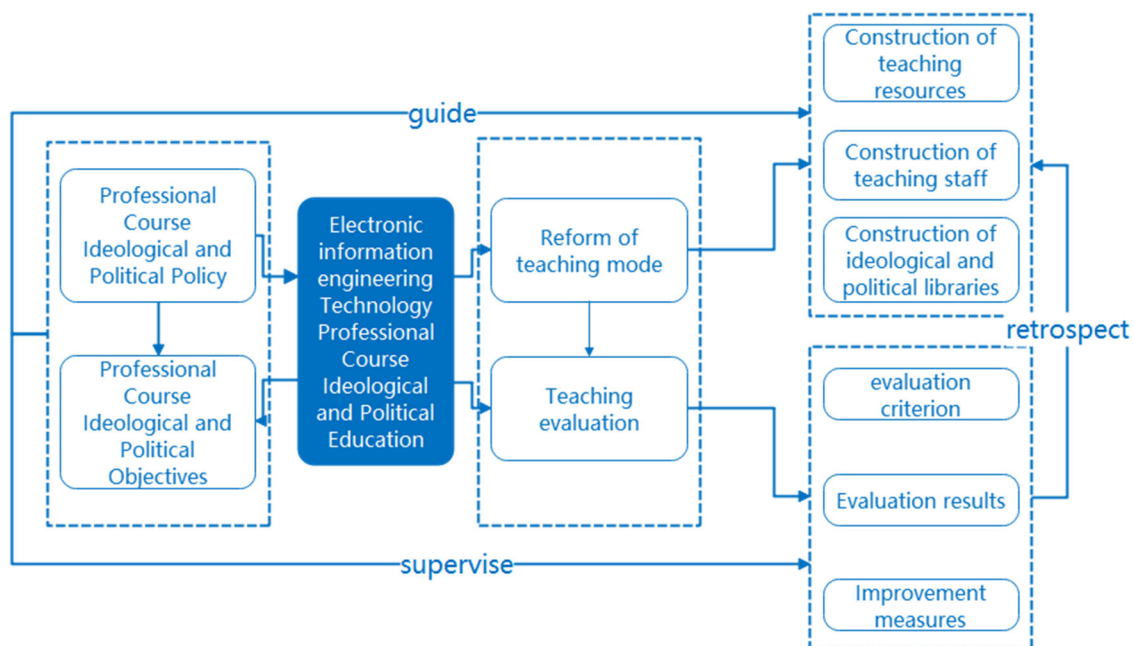


Figure 2. Construction system

#### 4.1. Construction of teaching resources

In the process of ideological and political construction of electronic information engineering technology professional courses, the construction of ideological and political resources contained in the professional content is the foundation for the ideological and political construction of professional courses[3]. This major intends to deeply explore the ideological and political elements of the ideological and political construction of electronic information engineering technology courses from the following three aspects to ensure that the content of the ideological and political teaching resources of the courses can be vivid and vivid. Through the construction of ideological and political elements, it has synchronously penetrated into the teaching team, the “Internet plus” teaching platform, professional textbooks, the second classroom and the third classroom, and comprehensively implemented the “three integrity” education under the guidance of the theory of synergy.

##### 4.1.1. Explore the history of industry development

The introduction or foreword section of each course will describe the history of the course's development and change from nonexistence to pass into existence, which contains the hardships of human beings' continuous exploration and practice, understanding and transformation of nature. In the process of narrating the history of curriculum development, political leaders have compared ancient and modern times, reflected both at home and abroad, and combined with modern and contemporary Chinese history to enable students to feel the hardships of the development process and stimulate their strong feelings of home and country.

For example, in the course “Analog Electronic Technology and Applications”, when describing the development of semiconductor device technology, we can conduct ideological education for students by analyzing the technological gap between China and developed countries, as well as introducing the history of electronic technology development, cultivating students' firm belief in striving for modern industry, and stimulating students' enthusiasm for learning.

#### **4.1.2. Collect the deeds of scientists**

Vivid science stories have always been excellent materials for attracting students in the classroom. Full-time teachers are required to collect model labor materials, be adept at excavating and utilizing landmark materials in the development history of electronic information science, as well as typical scientists with achievements, and incorporate their deeds and achievements into the teaching process of professional courses.

For example, when explaining the triggers in “Digital Electronic Technology and Applications”, it is possible to introduce the scientist Von Neumann, who has made great contributions to computer storage programs. Through these stories of scientists, students' craftsmanship and exploration spirit are cultivated, their internal motivation for learning is continuously enhanced, and their courage to overcome difficulties and challenge the forefront of the course is stimulated.

#### **4.1.3. Designing "Red and Professional" Teaching Cases**

When introducing a certain knowledge point of the course, we design teaching cases to combine ideological and political elements with teaching content, truly achieving “moistening things with silence”.

For example, when teaching new technology applications and discipline prefaces in “Internet of Things Communications and Cloud Computing”, it is possible to introduce “ZTE Event” and “Made in China 2025” to enable students to understand the current development situation of integrated circuit chips in China, understand the urgency of China's need to develop its own chip industry, and recognize the importance of mastering core technologies. The innovative consciousness and spirit of students can also be stimulated through practical operation training, innovative practical activities, and other teaching forms, thereby cultivating innovative talents.

## **4.2. Building a curriculum group**

The construction of the Internet of Things technology curriculum group serves the regional electrical industry, promotes comprehensive digital reform, and cultivates high-level technical and skilled talents with high professional literacy for digital upgrading of electronic products and equipment through enterprise job research. The curriculum group also has a distinctive feature, mainly focusing on programming and design, mainly involving ideological and political themes such as rational thinking, seeking truth from facts, and procedural justice, as well as ideological and political themes such as engineering philosophy, craftsmanship, seeking truth, and innovation.

The construction of an electronic product design curriculum group serves the regional electrical industry, promotes intelligent technological transformation and upgrading of enterprises, and cultivates high-level technical and skilled talents with high professional quality engaged in intelligent transformation of electronic product equipment based on talent cultivation objectives and job analysis. This course group is highly theoretical and practical, with a large knowledge capacity, and courses are related to each other. It has a sense of service, innovative spirit, and team spirit in ideological and political theme design.

## **4.3. Construction demonstration courses**

Sensor and detection technology cultivates students' ability to apply sensors to solve engineering measurement and control system problems, including the selection, design, application, debugging and maintenance of various sensors, and the formation, analysis and

commissioning of various detection systems[4]. The course has many knowledge points and covers a wide range.

Accurate detection is the thread of knowledge throughout the course. Based on this knowledge thread, the ideological and political red line of the curriculum is constructed with the craftsman spirit of excellence as the connotation. Make full use of the characteristics of the wide range of courses, combined with the implementation process of project-based teaching, relying on electronic scale production, flame alarm production and other projects, and use ideological and political red lines to connect ideological and political elements of the curriculum such as national pride, compliance with standards, fairness and integrity, safety awareness, innovation and entrepreneurship, etc., to form an organic system and ideological and political value chain of curriculum ideology and politics, and achieve the effect of ideological and political education "into the heart and brain".

MCU application technology is a comprehensive technology that combines "chip application, computer software, detection and control", and is an important starting point for the digital and intelligent transformation of the electrical industry. "MCU Application Technology" generally has the trilemma of "difficult to learn, difficult to teach, and difficult to use" in traditional course teaching.

Under the background of national political thinking, combined with the characteristics of "love practice and love operation" of vocational students, adopt the "online + offline" hybrid teaching mode, combine the real needs and the background of the times, put forward a new model of curriculum teaching reform of "ideological and political guidance + practice throughout", rely on project practice, introduce ideological and political education carriers, design 6 "red and specialized" practice projects to integrate ideological and political education elements, build a practical education model of "multi-evaluation orientation, multi-teacher collaboration, and multi-classroom integration", and "impart knowledge silently" Unify with "value guidance", gradually break the "three difficulties", and achieve the teaching goal of "learning technology, cultivating literacy, and shaping value". Adopt the method of ideological and political orientation of practical goals and ideological and political penetration of the practice process to plan the ideological and political system of the curriculum, improve students' moral feelings, behavioral quality and spiritual culture, and practice the core socialist values.

#### **4.4. Reform of Ideological and Political Teaching Mode of Curriculum**

##### **4.4.1. Improve teacher awareness**

To raise awareness of curriculum ideology and politics among full-time teachers, it is necessary to start from both the school management and the teachers themselves. First of all, the department level emphasizes the importance of ideological and political work in the curriculum from the aspects of professional talent training programs, course syllabuses, and teaching quality evaluation systems[5]. In addition, professional teachers should return to the original work of "teaching and educating people"[6]. While teaching professional knowledge, students are guided to establish the correct three views.

##### **4.4.2. Establish an evaluation system**

The implementation effect of ideological and political teaching in the curriculum mainly includes indicators such as self-summary, student evaluation, and teaching achievements, and the effect of ideological and political education at each stage is evaluated and fed back from different angles. Among them, students' evaluation of ideological and political teaching of professional courses should be considered as a key indicator. Each module and indicator in the evaluation system is given corresponding weights, and then the overall score is calculated. The content of the evaluation index follows the development of professional courses and ideological and political connotations, and is constantly dynamically revised, so as to continuously improve

the effect of ideological and political education of professional courses, and the overall trend is spiraling.

## 5. Conclusion

Through a two-year construction project, we aim to build a curriculum system that focuses on cultivating practical and innovative abilities, and implement a talent cultivation system that integrates professional literacy and technical skills through the integration of "cultivating talents in one body", "two wing drive", and "three element integration". This will provide useful references for the construction of vocational education undergraduate majors and the reform of talent cultivation models.

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