

# Exploration and practice of Ideological and political teaching methods of mechanical and electrical basis course

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**Abstract:** During students' study in University, professional courses account for a large part of their courses, while mechanical and electrical basic course, as a professional basic course for mechanical students, is a required course for mechanical and its similar majors, there are many students in class. As the inevitable requirement of the teaching of professional courses in the new era, the ideological and political teaching of electrical basic courses is very necessary, This paper discusses the exploration, integration and utilization of Ideological and political content in the course of mechanical and electrical basis, as well as the organic integration of the two in terms of content and methods, with a view to better carry out ideological and political education for students, and cultivate professionals with higher political and intellectual literacy.

**Key words:** Ideological and political education, electrical basis, teaching reform

## Introduction

Teachers are the key to do a good job in the ideological and political construction of the curriculum, and their educational ability directly determines the effect of the ideological and political construction of the curriculum. Many people may think that the ideological and political construction of the curriculum is only needed by the ideological and political course, but it is precisely the professional courses that account for the vast majority of the courses that college students study in the University, so the ideological and political construction of the professional courses is very necessary. This paper takes the course of mechanical and electrical basis as an example to explore the ideological and political teaching methods in professional courses, aiming to discuss how to explore and integrate the ideological and political teaching elements in professional courses, as well as the strategic direction of professional courses' ideological and political teaching.

## 1. The problems of Ideological and political education in professional courses at present

Although, nowadays, curriculum ideological and political work has become the national will of all kinds of schools at all levels in China, especially the university education and teaching reform and the hot search word in the network, all colleges and universities are basically vigorously promoting curriculum ideological and political work. However, there are still many problems in the process of professional course teachers' Ideological and political construction and teaching, among which the prominent problems are as follows:

1.1 Colleges and teachers do not pay enough attention to ideology, emphasizing specialty rather than ideology and politics

Some teachers even mistakenly believe that ideological and political education is only the task of ideological and political curriculum, and has little to do with other courses. Professional courses do not need ideological and political education, which greatly hinders the implementation of "curriculum ideological and political" education. Therefore, curriculum ideological and political education should be carried out. Colleges and professional teachers should change their teaching concepts and attach importance to curriculum ideological and political education, and change the concept of only imparting professional knowledge in the past.

1.2 Professional teachers' Ideological and political quality is not enough

As a professional course teacher in Colleges, to carry out professional course teaching, first of all, we should be familiar with the relevant knowledge of the major, the development trend of the professional scientific and technological frontier, and the basic knowledge related to the major. For these, most professional course teachers are up to standard. However, if professional teachers are required to teach "ideological and political education in professional courses", professional teachers are required to have a deep understanding of ideological and political education in their own thoughts.

1.3 The guarantee of the implementation of Ideological and political courses in Collegesis not enough

At present, many colleges have paid special subsidies to teachers who implement the "curriculum ideological and political" every month to encourage professional teachers to carry out the "curriculum ideological and political" teaching. Teachers should carry out ideological and political education in the curriculum. First of all, schools should recognize the importance of Ideological and political education, provide policy and financial support for teachers, and encourage professional teachers to explore and study the teaching methods of Ideological and political education in the curriculum, so as to provide strong backing for teachers.

1.4 The integration is not thorough and the curriculum construction is insufficient

Professional teachers only explain the ideological and political knowledge before teaching professional knowledge, which does not have a synergistic effect of one plus one greater than two. Therefore, According to the course characteristics, knowledge characteristics and discipline characteristics of professional courses, we need to explore the entry point of the integration of Ideological and political education and professional education, so as to realize the organic integration of the two and achieve better effect of Ideological and political education.

## 2. Suggested strategy

In the process of professional course teaching and course construction, how to effectively explore, integrate and use the ideological

and political teaching elements of professional courses to realize the organic integration of professional knowledge and ideological and political teaching is the key content of high-quality ideological and political teaching and construction. Next, the author takes the course of “fundamentals of mechanical and electrical engineering” as an example to illustrate how professional courses base on professional characteristics, explore ideological and political elements, adhere to the national strategy of Ideological and political construction of professional courses, cultivate students' patriotism, innovation spirit, craftsmanship spirit, professional ethics, philosophical thinking and other aspects to improve students' Ideological and political quality.

### 2.1 Contents and characteristics of basic electrical courses

The basic electrical course focuses on circuit theory, motor and relay contact control, analog electronic technology and digital electronic technology. It is a professional basic course for all kinds of non electrical majors in engineering colleges and universities. Like other courses of science and engineering, the course pays attention to the teaching of professional knowledge and contains more theories. It is difficult to carry out the ideological and political work of the course. To carry out the ideological and political teaching of the course, we must grasp the characteristics of the course, grasp the entry point of the ideological and political teaching elements in the course of teaching, and organically integrate the ideological and political teaching and professional course teaching.

### 2.2 Analysis of curriculum ideological and political resources

The basic course of electrical engineering is mainly through extended educationorientation education and infection education to realize the organic integration of professional knowledge and ideological and political teaching, and carry out the key content of Ideological and political teaching and construction of the course with high quality. Based on professional characteristics, explore ideological and political elements; adhere to the national strategy of Ideological and political construction of professional courses; cultivate students' patriotism, innovation spirit and craftsmanship spirit; and improve students' Ideological and political quality.

#### Introduction to ideological and political elements of some courses:

Through the analysis of the ideological and political elements of mechanical and electrical foundation, the knowledge and ideological and political education objectives of "value building, ability training, knowledge transfer" are realized from six aspects

(1) Craftsman spirit: through the high precision, reliability and stability of precision measuring instruments of electrical and electronic technology, and the rigor of circuit calculation, expand and share the relevant events of craftsmen in large countries, so that students can experience the connotation of craftsman spirit;

(2) Practical training: to cultivate the consciousness of using theory to guide practice and the character of daring to participate in practical training by applying the experimental ability and quality of electrical and electronic experiment practice;

(3) Professional ethics: cultivate the awareness of electricity safety and good professional ethics by explaining the relevant knowledge of electricity safety and the introduction of electricity accident cases;

(4) Powerful country in science and technology: explain China's major projects in the foreword of science and technology in combination with students' professional development, such as powerful country in high-speed rail transportation, Three Gorges Dam power generation project, and "heavenly eye" project, cultivate students' patriotism and consciousness of powerful country in science and technology, and enhance students' sense of national pride;

(5) Artistic style: the aesthetic art of displaying electrical phenomena improves students' sentiment, beauty and artistic style.

(6) Environmental protection: expand the explanation of the principles of high-voltage transmission and power generation through power consumption loss, and extend the explanation of thermal power generation, "carbon neutralization", "carbon peaking" and greenhouse effect, so as to stimulate students' awareness of environmental protection and resource conservation.

### 2.3 Teaching strategies of Ideological and Political Education

#### 1. With professional characteristics as the starting point, Organic integration into Ideological and Political Teaching

The reason why professional courses are called professional courses is determined by the professionalism of the knowledge they teach. Therefore, when conducting ideological and political teaching in professional courses, we must grasp the breakthrough of professional characteristics. Taking the course of “fundamentals of mechanical and electrical engineering” as an example, the course mainly teaches circuit, analog and digital related knowledge. Therefore, the introduction of the course not only deepens students' interest in the course through the explanation of the development of electrical and electronic technology, but also makes great changes to the world through new technologies and discoveries, such as the development of China's electricity related science in the 17th-19th century and the development of various kinds of Science and technology in China today, aerospace technology5g technology can stimulate students' innovative spirit and consciousness; When explaining the relevant knowledge points of motors, expand and explain the cutting-edge knowledge of aviation engines, the world's smallest motors and other science and technology, combine the current politics, stimulate students' patriotism and national pride, and guide students to study hard.

#### 2. Taking professional celebrities as the core and giving full play to the power of example

No matter which professional course, many famous professional figures who play an important role in professional development will be involved in the course teaching. Their successful experience, major contributions and influence will have a certain impact on students. Professional course teachers can establish a database of professional celebrities of the course, and use the power of example to teach students the ideological and political infection of the course. For example, when explaining Kirchhoff's law, we will expand and introduce Kirchhoff's life and carry out the ideological and political education of "innovation driven development, science and technology is the first productive force" for students.

### 3. Carry forward the characteristics of universities and specialties

In order to "moisten things silently" carry out the ideological and political teaching of the course, it is more important to combine the characteristics of the region and the school. For example, our school is a Transportation University, so we should establish a case base of the ideological and political teaching of the transportation power, explore the organic integration of ideological and political teaching elements in professional courses with the development history of Chinese transportation and the development strategy of a powerful transportation country, conduct ideological and political education in the course for students, and cultivate students' spirit of struggle and patriotism.

### 4. Ideological and political work throughout the whole process of education and teaching

The integration of Ideological and political elements into the classroom not only needs to be integrated into the teaching process, instead, it is necessary to take moral education as the central link and integrate curriculum ideology and politics into the whole course teaching process. Only in this way can curriculum ideology and politics be put into practice, instead of thinking and politics for the sake of thinking and politics. For example, micro-courses of professional curriculum ideology and politics can be established to help students learn after class.

### 5. Persisting in practical education

There are many teaching elements in the course of Ideological and political education. Some elements can influence students imperceptibly only in the practice teaching. Therefore, the integration of ideological and political elements should be emphatically considered when designing the course experiment and practice link. For example, in the experiment of mechanical and electrical basic course, we can strengthen the understanding of students' professional ethics through the preciseness of circuit design and the severity of power accidents; The craftsman spirit of students can also be cultivated through the tightness of electrical measuring instruments.

## Epilogue

To sum up, the ideological and political teaching of basic electrical courses should focus on professional characteristics, explore the combination of professional knowledge and ideological and political elements, and organically integrate into the ideological and political teaching. We should establish a database of professional celebrities of the course, take professional celebrities as the core, give full play to the power of example, carry out infection education for students, carry forward the characteristics of colleges and universities and majors, extend the frontier knowledge of science and technology related to the course, and carry out extension education for students. We should take moral education as the central part, carry out ideological and political work throughout the whole process of education and teaching, and adhere to the practice of educating people. In this way, we can better carry out ideological and political education for students and cultivate professional talents with higher political and intellectual literacy.

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