

Construction of Ideological and Political Cases for the Course "Compiling Technology"

Yan Yue

College of Control and Computer Engineering, North China Electric Power University, Baoding 071003, Hebei, China

Abstract: This article aims at the current situation of college students' value shaping and emotional psychology that have not yet taken shape. By constructing ideological and political case construction ideas, ideological and political elements such as philosophy, ethics and regulations, and a sense of social responsibility are integrated into the teaching process of compilation technology. In the teaching process, dogmatic preaching should be avoided, and the basic teaching method of ideological and political education should be from perceptual to rational, from concrete to abstract, and from special to general. Ideological and political education should be integrated into the teaching of professional skills and knowledge. Taking a class teaching design as an example, this article introduces how to organically combine ideological and political education with professional knowledge.

Keywords: Compiling Technology, Ideological and Political Education, Teaching Reform.

1. Course Information

1.1. Course Introduction

The course of Compiling technology is the core course of computer science and the basic supporting course for building a computer knowledge framework. It is a key position in the curriculum system that connects the preceding and the following, and combines vertically and horizontally. The main teaching content includes: basic features and execution methods of high-level programming language programs; Lexical, grammatical, semantic analysis, intermediate code generation, code optimization, and object code generation in program translation.

Ideological and political education is an important part of the teaching of "Compile Technology", with the fundamental goal of "cultivating morality and cultivating people". It permeates ideological and political education in the Compiling Technology course, cultivates students' sense of social responsibility and practical ability, and enables them to grow healthily, thereby playing an important role in the construction and development of the country. Its main contents and functions are reflected in: (1) effectively promoting patriotic sentiments and enhancing learning enthusiasm through the teaching carrier of professional courses.(2) Always incorporate spiritual guidance from the perspective of ideals and beliefs in the process of learning professional knowledge and improving skills, and cultivate a serious and meticulous scientific spirit of excellence.(3) Combine knowledge teaching and value guidance to build a philosophy and values that conform to the core socialist values, and improve comprehensive literacy.

1.2. Course Objectives

The main teaching objective of this course is to enable students to master the translation methods and execution principles of programming language codes. After learning this course, students should achieve the following goals: (1) Knowledge: mastering and deeply understanding the complete knowledge system and main principles of the course; (2) Application: Be able to skillfully compile compilers in specified languages, and master system level software

development skills; (3) Value: Combine other professional knowledge to solve practical application problems, improve professional ability and comprehensive literacy; (4) Emotion: Understand the basic national conditions of science and technology related to disciplines and majors, stimulate the motivation to engage in discipline research and work, and the determination to contribute to enhancing the national scientific and technological strength.

2. Thoughts on the Construction of Ideological and Political Cases

2.1. Establish clear goals for ideological and political education

Compiling technology occupies an important position in the entire computer system, involving the "bottleneck" problem in the information industry. Therefore, in the ideological and political teaching of this course, students should be guided to fully recognize the importance of Compiling technology, enable them to understand the basic scientific and technological conditions related to their disciplines and majors, stimulate the motivation to engage in discipline research and work, and enhance their determination to contribute to the national scientific and technological strength. Spread positive energy that is positive and upward. Cultivate students' professional ideals and sense of mission, humanistic spirit, scientific spirit, craftsmanship spirit, professional ethics, and legal concepts.

2.2. Select appropriate ideological and political teaching cases

Integrating ideological and political education into the classroom is an important way to cultivate the humanistic quality of college students. It permeates moral education throughout the entire teaching process, helping students establish the core values of the socialist new era. Through the sorting out and teaching summary of ideological and political cases in the course, the ideological and political cases should meet the following conditions: (1) The selection of cases should be based on the actual situation of the professional course. (2) Students' needs and interests need to be considered. (3) Cases should appropriately reflect positive ideological and

political elements. (4) The method of moistening things silently and dripping water through stones realizes the organic combination of explicit education and implicit education.

2.3. Realize the organic combination of case and teaching

Using teaching cases as the carrier, design and explore the ideological and political elements in the curriculum and cases, organically combine the ideological and political elements of the curriculum with the teaching content, and naturally bring students into the context through a "moistening and silent" approach. The formation of a teaching method in which students actively acquire knowledge under the guidance of teachers, discover problems, analyze problems, propose knowledge needs, acquire knowledge, and solve problems not only ensures teaching quality, guides students to gradually construct the knowledge system of the Compiling technology course, deepens students' understanding of the essence of the course content, but also enhances students' interest in solving practical engineering problems, achieving the goal of cultivating students' innovative thinking ability.

3. Case Design and Teaching Process

Taking the compiler function introduction section as an example, this case design focuses on two main lines: curriculum ideological and political education and classroom teaching. The curriculum carries ideological and political education, and ideological and political education is embedded in the curriculum. The case starts from the domestic Ark compiler. While introducing the functions of the compiler, it proposes the position of the compiler in the entire information industry. Through case explanation and discussion, students can not only understand the functions and importance of the compiler, but also enhance their national pride and sense of responsibility and mission. The spirit of serving the country sincerely and caring for society in the era is deeply rooted in the hearts of students.

3.1. Case Design

This case is based on practical examples. By introducing the popular Ark compiler in daily life, it leads to the core issue of not being constrained by others in the information industry chain, thus integrating ideological and political elements such as technological power.

(1) The connotation and important role of compilers.

A compiler is a bridge between the human world and the machine world. Any program needs to undergo the process of software development. The high-level language used in software development requires that the program be converted into machine code that can be efficiently executed when running on intelligent devices. This conversion process is completed by the compiler. It can be said that compilers are software used to generate software and serve as a bridge between software and chips, indicating the importance of compilers.

(2) Compilers occupy an important position in the information industry chain.

The course will start from the domestic compiler "Ark Compiler", introduce what a compiler is, and introduce its functions; By introducing the operating principles of computers or mobile phones from a global perspective, students can grasp the position of compilers in the system operation process and truly feel the importance of compilers.

(3) Stimulation of education to strengthen science and technology.

We see that our foundation is weak, so we need to build our own roots instead of integrating foreign technologies. Such technologies have no roots [1]and can be" pushed down ".This requires students to seriously study the course of Compiling technology, lay a good foundation for the scientific and technological work of the motherland, work hard, study hard for the take-off of the motherland, and for the Chinese Dream.

3.2. Teaching process

This case uses a combination of teaching method, visual demonstration method, analogy teaching method, and heuristic teaching method to guide students to master textbook knowledge from both theoretical and perceptual aspects, and obtain ideological and political education while learning professional knowledge.

Before class, a questionnaire is prepared for students in advance through classroom assignments or QQ groups to help teachers design specific cases from students' needs and interests during subsequent courses. The before class teaching design is shown in Figure 1.

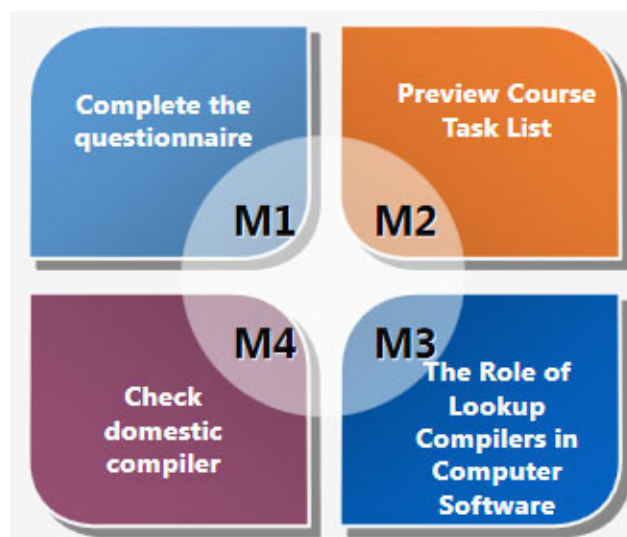


Figure 1. Before class instructional design

In the class, first of all, please introduce the use of software, consider how the functions are completed, and then elicit the instructions given by the program. How does the intelligent device know what to do? Export: Compiler. Taking the Ark compiler as an example, this article introduces how the compiler works. Lead students to think through heuristic teaching (1) What would happen without their own compiler? Through thinking about this issue, students can deeply feel that the competition in the world today is the competition of technology and talent, and guide students to firmly establish their faith in a powerful country in technology. (2) What should college students do today? Through the discussion of this issue, students will realize that no matter whether it is a country, a company, or an individual, only by taking precautions, being prepared for dangers in times of peace, improving the pattern, and looking forward to the future, can they remain invincible forever. (3) What should we do

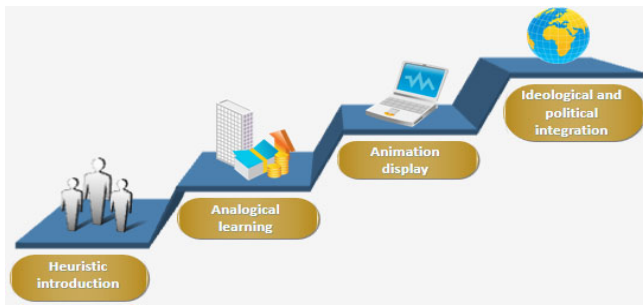


Figure 2. Teaching Design in Class

as computer majors? Combining personal reality, we need to educate students to examine themselves, position themselves, establish goals, and formulate thorough and feasible plans for them. We need to educate students to learn this course well, which is the "root" of science and technology, and cultivate students' patriotism. Teaching Design in Class is shown in Figure 2.

After class, please refer to the architecture of the Ark compiler and understand its composition, laying a foundation for the subsequent content of this course, so that students can understand the compiler structure from a holistic perspective.

3.3. Teaching methods

Through continuous improvement of teaching methods by the course team, an interactive and inspiring ideological and political teaching suitable for this course has been explored. The combination of "classroom+extracurricular" has formed a variety of teaching methods, enhancing the attractiveness and persuasiveness of curriculum ideological and political education, and fully mobilizing the subjective initiative of students, allowing them to become active participants and even designers of ideological and political education.

Specifically, in the classroom, teachers adopt various teaching methods such as case teaching, teacher-student interaction, and group discussion. Outside the classroom, teachers will continuously extend the position of ideological

and political education, using extracurricular reading, QQ group interaction, and other methods to communicate with young people in a way that they love, making ideological and political education more affinity.

4. Conclusion

The teaching of specialized courses not only cultivates students' ability to apply the ideas, principles, methods, etc. in specialized courses to solve practical problems, but also cultivates students' correct values, as well as their scientific spirit and literacy of striving for excellence. The ideological and political curriculum has a long way to go. Each teacher needs to actively improve their political and ideological awareness, and continuously improve their teaching and educating abilities.

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