

Exploration of Integrating Ideological and Political Education into Computer Science Courses in Teaching

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Abstract: With the increasingly complex international situation, the ideological value of students may deviate from the track of their thinking under the impact of multiculturalism. Integrating ideological and political concepts into computer science courses has gradually become an educational trend. Implementing ideological and political education in the curriculum is not only an inherent requirement of professional course teaching but also a necessity for universities to implement the fundamental task of cultivating morality and talents. As the main way to cultivate computer professionals, the teaching of computer courses not only focuses on learning relevant professional knowledge and skills but also scientifically guides and educates students in their moral concepts and value pursuits so that they can truly become excellent talents with both morality and talent. In this regard, this article explores the integration of ideological and political education into the teaching of computer science courses to provide some reference and inspiration for relevant educational researchers.

Keywords: Course ideological and political education; Integration; Computer major courses; Teaching

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1. Teaching value of integrating ideological and political education into computer science courses

1.1. Beneficial for implementing the fundamental task of cultivating morality and talent

The fundamental task of education is to cultivate virtue and cultivate talents. From the perspective of talent cultivation, while imparting theoretical knowledge and operational skills in computer science to students, attention should also be paid to the cultivation of ideological and moral qualities, cultivating them into talents with both morality and talent^[1-2]. Integrating ideological and political education into computer major teaching mainly combines ideological and political education with computer major teaching, following the basic requirement of “integrating ideological and political work into the entire process of education and teaching.” It is also the fundamental task of cultivating morality and talent in computer major teaching and provides strong internal motivation for cultivating computer major talents with both morality and talent in the new era^[3].

1.2. Beneficial for improving students' computer professional quality

Computer science courses aim to cultivate advanced computer technology talents with strong comprehensive abilities to meet the needs of computer science professionals in China, society, and the industry. When recruiting and cultivating computer professionals, enterprises should focus on their professional knowledge and abilities and pay attention to their ideological and moral cultivation ^[4]. If computer science students have strong abilities but their ideological and moral literacy is not high enough, employers will reject them. This requires the concept and methods of ideological and political education in the curriculum should be organically combined in the teaching process of computer science. It is necessary to cultivate students' knowledge and skills in computer science, and actively carry out corresponding ideological and moral education to promote students to have professional qualities that are suitable for the employment needs of the computer industry ^[5].

2. Current situation of integrating ideological and political education into computer major courses

2.1. Insufficient participation of students in ideological and political courses

From the perspectives of schools and teachers, the main body of ideological and political education in computer science courses is to carry out professional ideological and political theory courses. From the students' perspective, the current problem is that their enthusiasm for ideological and political education in the curriculum is not high. Fundamentally, teachers generally consider it their basic job for students to learn computer professional knowledge and skills well and believe that ideological and political education is unimportant. Therefore, they do not give sufficient attention to ideological and political education, resulting in students not having much motivation to participate in course ideological and political education. In addition, compared with computer science courses, the practicality and operability of ideological and political education in the course are not ideal, mainly focusing on theoretical aspects. Moreover, the connection between it and computer science courses is not close enough, which to some extent leads to a lack of strong interest among vocational students who are mainly focused on technology applications, resulting in problems such as lack of concentration and attentiveness in class.

2.2. Single teaching mode of ideological and political education in the curriculum

In reality, most computer science teachers in technician colleges attach great importance to the teaching of professional courses and neglect the integration of ideological and political education into the curriculum. There is also a lack of ideological and political education and teaching ability in the curriculum to some extent ^[6]. Although the computer major has always been committed to integrating the content and concepts of ideological and political education into teaching, it has not achieved the expected results. This is mainly because exploring ideological and political education resources is not deep enough, and the degree of integration with other computer-specialized courses is not high. Some teachers are still using knowledge-imparting methods that are not conducive to stimulating students' interest in learning, which in turn affects the effectiveness of ideological and political education in the curriculum ^[7].

3. Teaching strategies for integrating ideological and political education into computer science courses

3.1. Guided by curriculum ideology and politics, optimizing top-level design in a reasonable manner

Integrating ideological and political education into computer science courses is a very important task ^[8]. The

top-level design is a plan and guidance, based on curriculum ideological and political education, with teachers as the main body. Therefore, it is necessary to further refine the objectives of curriculum reform, clarify teaching guidance plans, and fully implement them in teaching practice. Teachers need to change their traditional teaching concepts and recognize that the construction of ideological and political education in the curriculum is not just about opening a new discipline but should be about integrating and innovating existing disciplines. The main content should be based on the basic knowledge and hands-on exercises of computer science courses, supplemented by ideological and political theory courses, and appropriately interspersed in teaching content to strengthen the organic integration of knowledge, skills, and ideological and moral education^[9]. For example, in Word application teaching, teachers need to teach basic knowledge, with a focus on strengthening students' theoretical foundation. In practical teaching, the explicit role of professional teaching should be fully utilized to enhance its pertinence and affinity. For example, when teaching knowledge, it is important to have a clear understanding of the duality of knowledge, guide students in information management, make them aware of the dangers of harmful information, and firmly resist the production and dissemination of all unhealthy information^[10].

3.2. Innovate the methods of integrating ideological and political education into the curriculum, and mobilize the enthusiasm of students

Firstly, combining online and offline. Make full use of network technology, analyze course content and cases through the built resource library platform before the classroom, guide students to actively collect relevant elements of cases and themes, stimulate their curiosity, cultivate their exploration ability, and cultivate good self-directed learning habits^[11]. For example, online teaching can be conducted to guide students to independently recite pre-class learning content, difficult-to-solve problems, and collected case elements, fully tap into their subjective initiative, highlight their learning subject role, and train their ability to summarize and express themselves in language. After class, exercises and ideological and political topics can also be posted together through the learning platform, allowing them to consolidate their knowledge. The integrated teaching method of online and offline allows students to have thoughts, ideas, and gains, thereby effectively improving the integration effect of ideological and political education in computer science education.^[12]

Secondly, teachers and students should interact and participate together. In the teaching process, it is necessary to fully utilize the subjective initiative of students, and integrate social focus events, stories of technological celebrities, and so on, with knowledge points as examples of ideological and political education, thereby creating a good educational atmosphere and stimulating their learning enthusiasm^[13]. For example, when teaching the “row bubble sorting algorithm”, students can be classified on the spot, and under the guidance of the teacher, students can sort according to the rules they have mastered, transforming abstract algorithms into intuitive and actionable behaviors, so that students can better understand and master this knowledge. The interactive experience segment designed by the teacher makes students realize that they are participants in the teaching process, not just recipients. With students' initiative in learning, the teaching effect will be greatly improved.

Thirdly, skillfully use mobile phones to assist in teaching. In multimedia classroom teaching, teachers can use multimedia materials such as animations and videos to vividly present complex and abstract knowledge points, helping them better understand. However, when explaining program analysis, students do not have a computer to debug and verify operations^[14]. In this case, it is possible to cleverly replace computers with mobile phones by installing the “C language compiler” app on the phone, which can participate in the entire teaching process in real-time in the classroom, allowing students to independently write and debug^[14]. As a technological innovation, the mobile debugging program stand can also inspire students to think more about

solutions when encountering problems, improve their creativity, and make them realize that mobile phones are not only a tool for communication and entertainment, but also a learning tool. In the future, it is necessary to make reasonable use of mobile phones ^[15].

3.3. Deeply explore the ideological and political elements of the curriculum to highlight the unity of knowledge transmission and value

In the teaching process of computer science courses, the learning content of students is mainly focused on professional courses due to the emphasis placed by technical colleges on cultivating students' basic knowledge and skills. Therefore, technician colleges should firmly grasp their characteristics, fully explore the ideological and political education elements contained in computer professional courses, and thus highlight the goal of integrating knowledge transmission with value guidance. Firstly, teachers should promote their research spirit, deeply explore the ideological and political elements contained in their professional courses through learning and understanding, and then design and plan ideological and political courses based on the discovered ideological and political elements, and establish a "people-oriented" teaching philosophy. Therefore, in the teaching process of computer science, it is important to focus on cultivating students' patriotism, creativity, and creativity to promote their growth into the new talents needed by the industry.

3.4. Emphasis on ideological and political practice courses to effectively enhance teaching effectiveness

The rapid development of today's society has led to an increasing demand for high-quality talent. While implementing ideological and political education for students, it is necessary to guide them to participate in various practical activities related to computer science in a step-by-step manner. For example, conducting prize-winning quizzes, debate competitions, speech competitions, and other practical activities related to ideological and political education. In this process, enabling students to effectively improve their awareness and understanding of ideological and political knowledge can not only enhance their practical computer skills but also further enhance their sense of national pride and identity, making them feel that their country is becoming stronger and developing faster, thereby enhancing their enthusiasm for computer learning and improving the effectiveness of computer education. After carrying out corresponding ideological and political education teaching courses, teachers can allow students to regularly provide feedback on their learning and report their insights on their studies. Teachers can also use computer network platforms to communicate and exchange messages with students online, provide timely explanations and approvals of relevant content, and provide timely guidance and answers to students who have questions.

3.5. Optimize the curriculum evaluation system and improve the effectiveness of evaluation results

In the teaching of computer science courses, building a comprehensive and practical education quality evaluation system is necessary to achieve a positive interaction between course content output and learning quality evaluation. The current course evaluation system focuses on students' understanding and grasp of professional knowledge while neglecting the importance of skills and qualities. Therefore, further improvement is needed. To simultaneously assess the learning status of students' professional knowledge and the improvement of their ideological and political literacy, a dual objective evaluation system is established to achieve synchronous assessment of their mastery of computer science knowledge and ideological and political literacy. The core idea is to transform the overall goals of ideological and political education in the curriculum into quantifiable and observable behavioral indicators, based on the diversified learning outcomes of students,

to comprehensively evaluate the achievement of ideological and political education goals. For example, in the teaching of computer science, the evaluation of the results of thematic research is used to examine the completion results and methods of the project. At present, the evaluation indicators in this area are further subdivided into project title (testing students' sense of social responsibility and innovation ability), project team collaboration and individual work status (testing students' team collaboration spirit), project completion degree (testing students' innovative spirit and ability to apply learned knowledge to solve practical problems), and project writing (testing students' academic attitude and sense of responsibility).

4. Conclusion

In summary, implementing the concept of ideological and political education in the teaching of computer science courses is not only a requirement for implementing the fundamental task of moral education but also a need to improve students' computer science professional quality. Considering the series of challenges faced in the implementation of ideological and political concepts in current computer major curriculum teaching, teachers should actively play their role to truly integrate ideological and political concepts into computer major curriculum teaching, to improve the ideological and political literacy of computer major students.

Disclosure statement

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