

# *Case Study on Exploring Ideological and Political Education in University Computer Fundamentals Courses*

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**Abstract:** The current political system in our country is increasingly perfected, with students' values and cultural levels improving. As information technology advances, computers have become indispensable tools in people's learning and daily lives. Cultivating students' information literacy has become an important task in higher education. While the course "Fundamentals of Computer Applications" aims to equip students with basic information skills, it should also emphasize students' awareness and ethics regarding information. This article elaborates on the relevant concepts and theoretical basis of integrating ideology and politics into the curriculum, analyzes the necessity of integrating ideology and politics into the course of "Fundamentals of Computer Applications" in the context of new educational trends, and explores integration points before, during, and after the course. An analysis of the current situation of ideological and political education in the teaching of "Fundamentals of Computer Applications" in schools is conducted, along with an examination of the challenges faced by teachers in implementing ideological and political education in their teaching. By using "Internet Applications" as an example for course design and implementation, the effectiveness of integrating ideology and politics into the course is evaluated, demonstrating the feasibility and effectiveness of implementing ideological and political education in the "Fundamentals of Computer Applications" course.

## **1. Introduction**

### **1.1 Research Background**

In the new era, Chinese ideological and political education has been given a new direction and new connotations by the central government, continually refreshing the key position of ideological and political education. Ideological and political education embodies the will of the state and is an important way to promote the cultivation of innovative talents in China. The theoretical courses on ideology and politics have always been the main channel for schools to carry out ideological and political teaching, serving as the main battlefield for comprehensive work in ideological and political education at universities. To enhance the effectiveness of ideological and political education in schools, it is necessary to leverage the function of classroom education, transform

academic resources into educational teaching resources, and realize its inclusiveness. <sup>[1]</sup> Currently, the central government has successively issued many relevant policy documents to improve the quality of ideological and political education in schools.

In 2016, Shanghai integrated ideological and political courses, comprehensive quality courses, and professional courses in teaching, and this preliminary research experiment was adopted in the Central Document No. 31; In 2017, Beijing included ideological and political education in the central government's "Opinions on Deepening the Reform of the Educational System," elevating it from local government pilot exploration to a national development strategic plan; In 2018, the Ministry of Education mentioned in the "Opinions on Strengthening the Construction of 'Situation and Policy' Courses in New Era Higher Education" that ideological and political education should be promoted nationwide. In 2020, the Ministry of Education and other nine departments issued the "Action Plan for Improving the Quality and Excellence of Vocational Education (2020-2023)," emphasizing the advancement of the fundamental tasks of cultivating morality and promoting the Thought on Socialism with Chinese Characteristics for a New Era into textbooks, classrooms, and minds, establishing a new pattern of "comprehensive education" in vocational education; guiding schools to comprehensively integrate teaching resources and educational forces in all fields, sections, and directions, guiding students to love the party and the country through values cultivation activities, instructing teachers to strengthen ideological and political education construction, and fully integrating ideological and political education into training programs and professional courses. <sup>[2]</sup> In 2021, General Secretary stated that we should make good use of the "big ideological and political course" and combine it with practical issues. Simply reading relevant documents in the ideological and political class is lifeless and dry. This further strengthens the necessity for innovation in ideological and political teaching in the "Fundamentals of Computer Applications" course in the new situation, emphasizing the high integration of theoretical foundations and professional knowledge to enhance the timeliness and appeal of ideological and political teaching work.

To effectively utilize classroom resources and expand the scope of ideological and political education beyond traditional classroom teaching, it is essential to integrate computer teaching with ideological and political theory courses. This synergistic approach aims to cultivate core competencies among computer science students. These competencies encompass not only technical skills but also the development of emotions, attitudes, and values, which are reflected in the three dimensions of educational objectives. <sup>[3]</sup> In the construction of ideological and political education in courses, universities adhere to the socialist direction of running schools, fulfill the fundamental task of fostering students' morality, and ensure the comprehensive integration of ideological work into the entire teaching process. As educators in the new era, it is our significant responsibility and mission to further explore ideological elements, integrate them into professional course teaching, and implement the construction of ideological and political education around the core objectives and key contents of course ideology in computer science courses. This involves focusing on the design of computer science courses to establish a curriculum ideology education system that meets the requirements of holistic education, emphasizing our commitment to the development of students in all aspects.

## 1.2 The significance of research

The ideological and political education in the course "Fundamentals of Computer Applications" in ordinary universities is still in the initial exploration stage. In the current stage of higher education, the issue of "knowledge-centered" not only exists in computer-related courses but also in other disciplines. In recent years, with increasing attention to the design of ideological and political

education in courses like "Fundamentals of Computer Applications," many university leaders and teachers have realized the drawbacks of "knowledge-centered" teaching and have actively transitioned from "knowledge-centered" to "skills-centered" teaching. They have also strengthened the design and integration of ideological and political elements in various professional courses.

Currently, research on teaching based on ideological and political education has penetrated various disciplines in universities, secondary vocational education, with a focus on core subjects like language, mathematics, foreign languages, and accounting. However, the application of ideological and political education in computer-related courses in universities is relatively scarce. Furthermore, scientific studies have shown that teaching methods based on ideological and political education can improve the classroom environment, enhance classroom effectiveness, shift learning interests, and cultivate students' values. It is noted that there is limited literature on computer teaching research based on ideological and political education, especially in the design and implementation of ideological and political education in the course "Fundamentals of Computer Applications" in universities, making it an innovative research topic in the university context.

Through investigating and researching the teaching and implementation of ideological and political education in university courses, the aim is to address the weaknesses in ideological and political education in computer courses at universities, enrich the content of the research on the course design of "Fundamentals of Computer Applications" in universities, and provide support for the sustainable development of ideological and political education in university courses. This includes verifying the feasibility and effectiveness of ideological and political education in courses. Ideological and political education in university courses is currently a hot topic of research. It does not require teachers to turn professional courses into courses on ideological and political education, but rather to integrate ideological and political education and values into the teaching of "Fundamentals of Computer Applications," enhancing the affinity and relevance of the course, allowing the course to fully fulfill its ideological and political functions.

## **2. Importance of Ideological and Political Education**

### **2.1 Ideological and Political Education in Courses**

Ideological and political education in courses serves as a beneficial supplement to school moral education. Literally, it consists of the combination of "courses" and "ideological and political education." However, we must not simply interpret ideological and political education in courses as the combination of "courses" and "ideological and political education." "Courses" belong to the field of higher education, while "ideological and political education" belongs to the field of ideological and political education. Li Guojuan believes that the key focus of ideological and political education in courses lies in "ideological and political education." If the educational function of "ideological and political education" is not well-implemented, it can lead to the loss of "soul" in course teaching. <sup>[4]</sup> Higher education should pay more attention to the integration of ideological and political education with school education, explore the implementation of ideological and political education in subject courses, and comprehensively enhance the level and quality of moral education. <sup>[5]</sup> The goal of ideological and political education in the curriculum is to combine ideological and political teaching with the specialized courses of the school, to impart theoretical knowledge and guide values at the same time.

In the broad sense of ideological and political education in the curriculum, there is a distinction between ideological and political education in ideological and political courses and in other courses. The emphasis of ideological and political education in the curriculum mentioned in this article is on enhancing the educational effectiveness of other disciplines. Constructing new courses is not the essence of ideological and political education in the curriculum, but rather forming a view of

courses. Ideological and political education in the curriculum is an overall view of courses that brings out the educational functions of various disciplines. It is important to deeply explore the implicit ideological and political education resources in various non-ideological courses, naturally integrating them into classroom activities, and conducting ideological and political education in an indirect, implicit, and subtle manner to enhance students' ideological and moral standards, and cultivate political awareness, scientific and cultural qualities.

## **2.2 Analysis of Necessity**

With the rapid advancement of science and technology and the continuous development of new media technology, we are now in the era of 5G with strong computer application capabilities. This will have a profound impact on people's work efficiency and learning quality. The process of using computer technology also involves many aspects related to ethics and values. In the face of new circumstances, it is imperative to closely integrate the construction of the "Fundamentals of Computer Applications" course with the teaching of political ideology and theory, and urgently promote the integration of ideological and political education into the "Fundamentals of Computer Applications" course in ordinary universities.

### **2.2.1 Meets the requirements of basic computer application education**

The further development of the education sector has brought new demands to the course of "Fundamentals of Computer Applications." As ideological and political education is an important part of the education of "Fundamentals of Computer Applications," teachers need to more extensively explore the ideological and political education resources within the curriculum and effectively demonstrate them in the classroom. This allows students to absorb knowledge of "Fundamentals of Computer Applications" while achieving the penetration of ideological and political education, thereby fulfilling the basic teaching objectives.

### **2.2.2 Aligns with the needs of cultivating new computer talents**

With various sectors of the Chinese economy and society flourishing, universities have become important cradles for nurturing and producing outstanding talents. To cultivate new types of computer talents, the focus should be on professional skills and moral qualities, which will better meet the needs of the information society's development. Therefore, integrating ideological and political education into the course of "Fundamentals of Computer Applications" is evidently essential. This represents the new requirements of the new era for school education and is a new trend in economic and social development.

### **2.2.3 Establishing the Importance of Life Values as a Safeguard**

Students are at a crucial stage of physical and mental development, making their thoughts and actions highly susceptible to negative influences from the external environment. Therefore, strengthening ideological and political education is crucial and necessary. By effectively integrating ideological and political education with the "Fundamentals of Computer Applications" course in practice, targeted education can be conducted based on the current online environment. Guiding students ideologically helps to rectify their thoughts, regulate their words and actions, gradually instill correct life values, and thereby promote healthier growth and development among students<sup>[6]</sup>.

### 3. The case study of "Internet Applications"

Classroom teaching is the key link to achieving the goals of ideological and political education in the curriculum. This chapter focuses on the three key stages: pre-class, in-class, and post-class, using the example of "Internet Applications" in the course. The author and Teacher A collaborated to optimize the design of ideological and political education in the course. Teacher A conducted the teaching, while the author observed throughout and documented the entire process of Teacher A using various ideological and political knowledge in conjunction with the course content to implement ideological and political education.

#### 3.1 Teaching Design Based on Ideological and Political Education

The chapter on "Internet Applications" in the course "Fundamentals of Computer Applications" for computer majors is a key and challenging aspect of computer studies. The design of ideological and political education in the "Internet Applications" course aims to strengthen the role of nurturing students' virtues, ethics, and talents in the classroom through real course scenarios in "Fundamentals of Computer Applications". It aims to cultivate students' abilities for independent exploration and teamwork, enhance their sense of professional ethics and national identity, and develop their abilities for innovation and proactive attitude.

The course design is as follows:

**Textbook:** The textbook used in this course is the 4th edition of "Computer Applications Basics" published by Higher Education Press. The teaching content covers Chapter 3, Section 1 of the textbook, divided into three modules: common Internet applications, how to make good use of the Internet, and responsibilities and security in cyberspace. Through previous teaching in the course and extensive exposure to the Internet, students have initially mastered information and network knowledge. While they have developed a strong interest in the Internet, their understanding of other application skills is limited. This course combines "Internet applications" with ideological and political education, laying a foundation for students to use the Internet effectively in their future studies and daily lives.

**Students:** The target audience for this course is the 2021 Computer Science Class 1 students. The students in this class are generally similar to other classes in terms of class atmosphere and learning attitude. Due to differences in students' levels of understanding, varying computer operation skills, lack of internal motivation, and basic knowledge of "Fundamentals of Computer Applications," the overall level of computer literacy is not high. When selecting specific course content, consideration should be given to the actual situation of the majority of students, using examples familiar to students to pique their interest, teaching according to difficulty levels, while also encouraging students to think critically and improve their cognitive abilities.

**Teachers:** The teacher for this course on ideological and political education selected Teacher A, a graduate of a computer science program, as the instructor. The university has always followed the principle of selecting teachers from relevant fields. Due to limited numbers of teaching staff, a few teachers from non-related fields also teach the course "Fundamentals of Computer Applications." Teacher A began teaching this course in 2011 and has been teaching it for 11 years. He has won provincial honors multiple times in teacher professional skills competitions, and his students have achieved national honors in skills competitions. Based on his years of teaching experience and personal abilities, it is evident that Teacher A is relatively experienced in teaching and has successfully implemented ideological and political education in his teaching, making him competent in instructional design and implementation.

**Teaching:** (1) Fundamental Knowledge: a. Students should understand the basic functions of browsers and the most common ones, and introduce the basic interface operations and features of browsers. b. Students should be familiar with search engines and their functions, understand the concept of keywords, and methods for searching resources. c. Students should understand the

concepts of uploading and downloading content, be able to download documents, store page content information. (2) Operational Skills: a. Ability to open and close browsers. b. Ability to access websites from browsers, retain and collect information from websites of interest. c. Ability to use search engines and retrieve the required information using keywords. (3) Emotional Attitudes and Values: a. By learning to master internet information, guide students correctly in identifying internet information; b. By advocating healthy internet learning habits and moral awareness, cultivate students' core computer literacy; c. This course should help students understand the relevant content of the curriculum ideology, and cultivate students' aspirations and sentiments.

Teaching Focus: Understanding the interface of a browser; mastering methods of collecting information from the internet using a browser; using search engines.

Challenges: How to select keywords to improve information search efficiency. Teaching Media and Hardware Equipment: Computer classroom. Software Equipment: PPT slides, IE browser, video player.

Teaching Methods: a. Case Study Method: This method tightly integrates the ideological and political elements of teaching with subject knowledge points, presenting teaching content to students in the most straightforward manner. It immerses students in specific scenarios, thereby enhancing their understanding and grasp of various professional knowledge points. b. Heuristic Teaching: Under the guidance of the teacher, students gradually master theoretical knowledge and basic skills, enhancing their interest and enthusiasm for learning, improving students' ideological and political qualities, and indirectly fostering correct values. c. Cooperative Inquiry Method: Combining teaching and practice, this method emphasizes autonomous learning. It involves using computers as learning tools for inquiry-based teaching to solve real-world problems, enabling students to actively participate.

In the process of course learning, students are required to master new knowledge and skills combined with ideological and political education, and engage in learning activities such as group cooperation to complete work presentations and evaluations. I observed and recorded Teacher A implementing teaching from an ideological and political perspective. Teacher A, based on the characteristics of different ideological and political knowledge and course content, supplemented the teaching process with rich images and short videos before, during, and after class to stimulate students' interest in learning and enhance their computer literacy.

The teacher mainly raises questions and goals, and the students respond and complete the teacher's instructions. For example, during the teaching process, the teacher may provide guidance such as: "The applications of the Internet are overwhelming, and browsing websites is one of the main services provided by the Internet. Website browsing not only supports text but also multimedia transmission services such as images, animations, and sound." Students engage in group learning by carefully considering and using the IE browser installed on the computer. The teacher explains the operational steps separately to train students' computational thinking. The focus is on helping students understand the methods, learn to apply them in various contexts, and instill ideas of self-improvement and proactive attitude in teaching, thereby enhancing students' core computer literacy.

Each teaching session carries different educational and ideological significance. For instance, by exploring Chinese-developed browsers and their characteristics, students are encouraged to develop a sense of responsibility and patriotism. Addressing the authenticity of information encountered during research cultivates students' critical thinking skills. Inspiring patriotism helps students establish their aspirations and life goals, fostering enthusiasm for learning and core computer literacy while enhancing their sense of national identity. Understanding significant events in the country cultivates honesty, integrity, and social responsibility in students, making them realize the importance of self-improvement and proactive attitude for personal development.

## **4. Reflection on Design and Implementation**

Teaching content is like a lottery bag, containing various courses. Although students complete the tasks and earn credits, they may not develop a general knowledge view and a real-life perspective. The reflection session is an indispensable part after the end of classroom teaching. Reflecting on the design and implementation of ideological and political education in the "Fundamentals of Computer Applications" course helps teachers summarize the strengths and weaknesses of the previous teaching, reflect on students' understanding of the knowledge points, and enhance their educational abilities. It also allows for contemplating the future direction of ideological and political education in the practical teaching of the "Fundamentals of Computer Applications" course.

### **4.1 Teachers' Teaching: Strengthening Intrinsic Motivation**

From the perspective of teaching content and characteristics, in the past, teachers tended to focus more on introducing knowledge points in teaching, treating knowledge as the key point of the curriculum, to some extent neglecting the process of students mastering knowledge and theories. Students are given conclusions without going through the exploration of knowledge, making the teaching content somewhat one-sided. In the practical teaching of integrating ideological and political education into the course of "Fundamentals of Computer Applications," the main position of learning the knowledge of "Fundamentals of Computer Applications" was not overlooked during the teaching process, and the theoretical aspects of the professional course were given priority. Before class, teachers delve into the ideological and political elements hidden in the knowledge points by studying the textbooks, and flexibly and appropriately integrate these elements while ensuring the completion of teaching.

When it comes to teaching methods and approaches, traditional teaching often involved teachers imparting professional knowledge to students mainly through lectures, resulting in limited time for students to think independently and engage in hands-on activities. This approach also falls short in nurturing students' innovation capabilities. By utilizing heuristic teaching methods such as case studies and group cooperative inquiry, teachers in actual teaching activities aim to cultivate students' ability to think independently and solve real-life problems autonomously. The selected teaching content is closely integrated with daily life, using computer application knowledge to address practical issues, enabling students to realize the value of computer technology during the teaching process. Through practical assignments and the integration of videos and images, students can learn about the curriculum more intuitively and effectively, significantly reinforcing their learning motivation and enhancing their proactive engagement in learning.

### **4.2 Students' Learning: Emphasizing Deep Engagement**

#### **4.2.1 Comparative Analysis of Students' Classroom States**

Students' classroom performance is an important indicator for assessing the effectiveness of teachers' curriculum implementation. Teachers can analyze students' classroom performance and overall effects after class, comparing whether integrating ideological and political education into teaching has effectively stimulated students' interest in learning, thereby enhancing classroom effectiveness.

When using traditional teaching methods in Computer Science Class 1, students showed minimal changes in their classroom states - teachers lectured, students practiced. With a purely didactic teaching approach, students, after mechanically consolidating computer knowledge, lost interest in teaching, became distracted in class, even dozed off, felt low in spirits, resulting in overall poor teaching effectiveness. After adopting a teaching method combining group cooperation exploration

and heuristic teaching integrated with ideological and political education, students' attention became more focused due to the design of ideological and political education, incorporating various scenarios, leading to an expectation in mastering new knowledge points. Throughout the course, various ideological and political knowledge points were intertwined, allowing students to use real-life examples, to a certain extent, nurturing students' sense of national identity and social responsibility. In subsequent courses, as students learn different knowledge points, they naturally integrate them closely with ideological and political education, thereby enhancing classroom teaching effectiveness.

#### **4.2.2 Analysis of Students' Performance Outside of Class**

Students' performance outside of class is a reflection of the entire classroom. The atmosphere outside of class can also reflect students' ideological and political levels. When students find the classroom relatively easy to learn in, with a solid grasp of the knowledge points, the atmosphere outside of class tends to be very lively. However, if students feel relatively downcast and unfocused in class, with low spirits, the atmosphere outside of class may be more negative. In the past, when Class 1 of the Computer Department used traditional teaching methods, a small number of students would discuss topics they didn't understand in class. However, due to the lack of liveliness in the classroom, the learning effect was not good, many knowledge points were not mastered, and the class atmosphere was quite low. After integrating ideological and political education into the teaching of "Fundamentals of Computer Applications," the atmosphere in Class 1 of the Computer Department became more active. Many students actively engaged in communication between teachers and students, and outside of class, students reminisced about the scenarios created by the teacher in class, reinforcing knowledge points. The environment outside of class also became lively, with students actively preparing for the next class.

#### **4.2.3 Political and ideological elements: targeted selection**

Emphasize relevance. For ordinary universities' computer science majors, the teaching takes place in computer classrooms, emphasizing both theoretical and practical knowledge. In the implementation of ideological and political education in the "Fundamentals of Computer Applications" course, knowledge points are provided to students after cooperative exploration; a large amount of knowledge should be integrated into relevant contexts to help students grasp it and cultivate their interest in learning. When teachers organically combine ideological and political education with the teaching of "Fundamentals of Computer Applications," they should select appropriate ideological and political elements based on the teaching content to cultivate students' ideological and political qualities while engaging their interest. Show differentiation. Students have different learning contents, and the content of each major varies. Individual differences exist among students, leading to significant differences in the knowledge points covered. When schools carry out ideological and political education in courses, they should try to combine ideological and political education elements with the characteristics of the disciplines; or based on professional differences, analyze the integration points of ideological and political education before class as mentioned in Chapter Three, select ideological and political elements corresponding to computer science students, integrate and fuse computer-related knowledge, and cultivate students' interest in learning. Once students have a clear understanding of the knowledge points in "Fundamentals of Computer Applications," it also aids in learning other professional courses.

#### **4.2.4 Content Progress: Dynamic Adjustment**

Interaction between teachers and students is also an essential part of the curriculum. When integrating "Fundamentals of Computer Applications" with ideological and political elements, teachers need to communicate effectively with students while understanding their thought processes.



At the same time, teachers should pay attention to individual differences among students and provide targeted teaching accordingly. It is important to adjust the teaching progress and content promptly to integrate ideological and political elements with the teaching curriculum effectively, aiming to cultivate students' ideological and political qualities.

## 5. Conclusion

Students are able to actively think and complete tasks assigned by teachers, adhere to classroom discipline, engage in hands-on learning and independent cooperative inquiry during class, all of which reflect changes in students. The discussion in this paper on the design and implementation of ideological and political education in the course "Fundamentals of Computer Applications" effectively helps teachers integrate ideological and political education into the teaching of "Fundamentals of Computer Applications". It makes the educational content of ideological and political education more systematic, improving the effectiveness of classroom teaching in educating students and cultivating students' awareness of ideology and politics, and enhancing students' core computer literacy. Therefore, it can be considered that the design and implementation of ideological and political education in the course "Fundamentals of Computer Applications" are feasible and effective.

Implementing the integration of ideological and political education into the teaching of "Fundamentals of Computer Applications" is a challenging yet essential task. This study investigates the status of ideological and political education in the course "Fundamentals of Computer Applications" at a certain university, analyzes the implementation of course teaching by Teacher A, and concludes that students' computer literacy has improved after the teaching implementation. They have experienced the integration of ideological and political elements in the course, confirming the feasibility and effectiveness of the ideological and political education design and implementation in the course. The study also outlines the design and implementation path of ideological and political education in the course. While ideological and political education in courses is still in its early stages, its impact on students' ideological and political education will determine the value orientation of future social education. Educators must uphold the original mission of teaching and educating people, gradually implementing ideological and political education from higher education institutions to the next level of schools.

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