Education Reform and Development, 2024, Volume 6, Issue 10
https://ojs.bbwpublisher.com/index.php/ERD
Online ISSN: 2652-5372
Print ISSN: 2652-5364

Research on the Path of Ideological and Political Education of "Computer Foundation" Course with ITAI

Xiaoliang Zhao*

People's Public Security University of China, Beijing 100038, China

***Corresponding author:** Xiaoliang Zhao, zbjpaper@126.com

Abstract: As a mandatory public course in higher education, integrating ideological and political education into the "Computer Foundation" course presents a significant challenge. This paper examines the path for incorporating ideological and political education into the "Computer Foundation" course within the context of IT Application Innovation (ITAI). It explores effective strategies for merging ideological and political education with the computer foundation curriculum to enhance students' information literacy and ideological quality. By analyzing the current status and issues in the ideological and political education of the "Computer Foundation" course, this paper proposes targeted strategies and implementation measures to provide insights for the ideological and political reform of related professional courses.

Keywords: ITAI; Computer foundation; Ideological and Political Education; Path study

Online publication: October 25, 2024

1. Introduction

The rapid advancement of information technology has made the "Computer Foundation" course a fundamental component in higher education institutions. This course not only equips students with practical skills but also fosters their innovative thinking and hands-on abilities. However, integrating ideological and political education into the "Computer Foundation" course has become a pressing challenge, especially given the growing decoupling between Europe, America, and China. Addressing how to effectively incorporate ideological and political education into this course amid these geopolitical changes is an urgent issue needing resolution.

2. Overview of "ITAI" and the "Computer Foundation"

2.1. Connotation of "ITAI"

ITAI, or information technology application innovation aims to reduce dependence on foreign technologies

in the IT sector by achieving domestic substitution and upgrading of key technologies [1]. This approach is designed to realize full autonomy and control over the information technology industry [2]. IT application innovation represents not only a crucial direction for technological innovation in China but also a core driving force for promoting high-quality economic and social development.

2.2. Orientation and current status of the "Computer Foundation" course

The "Computer Foundation" course, a mandatory general education course for freshmen, is designed to equip students with fundamental computer theories, knowledge, and skills. Its objectives include enhancing students' information literacy, fostering innovative thinking, and developing the ability to solve practical problems using computer technology, thus laying a solid foundation for future professional coursework and career development [3]. However, current challenges include outdated teaching content, a lack of diversity in teaching methods, insufficient practical components, and a lack of student engagement and motivation [4]. Additionally, there is often an overemphasis on skill training at the expense of ideological and political education.

2.3. The relationship between "ITAI" and the ideological and political construction of the "Computer Foundation" course

There is a significant connection between ITAI and the ideological and political construction of the "Computer Foundation" course. Integrating ITAI can enhance students' national consciousness, innovation awareness, and safety consciousness, while also promoting professional ethics and patriotism [5], aligning with the goals of ideological and political education. Moreover, incorporating ITAI can enrich teaching content and methods by introducing resources such as lectures, case studies, and experiments, making the curriculum more contemporary and practical. This approach also helps cultivate students' scientific thinking, engineering ethics, and social responsibility, thereby increasing their interest and enthusiasm for learning. Lastly, integrating ITAI presents challenges that can improve teachers' teaching and research capabilities, as educators must continually update their knowledge to effectively guide students in innovative practices.

3. Problems and challenges in the ideological and political construction of the "Computer Foundation" course under ITAI

3.1. Issues in curriculum design and teaching content

Regarding curriculum design, traditional "Computer Foundation" courses have focused heavily on skill development within the discipline, often overlooking the diverse needs of students' majors and lacking interdisciplinary integration [6]. As information technology continues to evolve, its integration with various fields becomes increasingly important [7]. Therefore, curriculum design should give more attention to interdisciplinary approaches to meet the demand for versatile talent in society. Concerning teaching content, traditional "Computer Foundation" courses often feature outdated material, emphasizing technical instruction while neglecting the incorporation of ideological and political education. Additionally, there are shortcomings in the practical components of the course, making it challenging for students to apply their knowledge in real-world scenarios [8]. In the context of ITAI, enhancing practical components can help students experience the appeal of new technologies through hands-on operations, thus fostering their innovation and practical skills.

3.2. Issues with the teaching staff

The teaching staff for "Computer Foundation" courses faces several key issues. First, the distribution of teachers' ages, educational backgrounds, and professional titles is imbalanced. Young teachers bring fresh educational ideas but often lack teaching and research experience, while experienced teachers have substantial teaching backgrounds but may be less adept at new technologies and knowledge. Second, the practical experience of the teachers is insufficient. Most of the teachers lack engineering experience in practical application fields, which makes it difficult for them to effectively integrate the latest technology and application cases into the classroom during teaching, thus affecting the cultivation of students' learning interest and practical application ability [9]. Third, there is a need to strengthen teachers' capabilities in ideological and political education [10]. In the ITAI context, teachers are expected not only to deliver computer knowledge but also to foster students' awareness of autonomy and innovation. However, many teachers' ability in ideological and political education is relatively weak, and their understanding and application of ideological and political ideas in the curriculum are insufficient, so it is difficult to effectively integrate ideological and political education into the teaching of basic computer courses.

3.3. Issues with teaching methods and means

In the current teaching process of basic computer courses, there are some problems in teaching methods and means, which are mainly reflected in the following aspects. First, traditional teaching methods remain dominant. Many teachers rely primarily on lecture-based instruction, often neglecting students' initiative and creativity [11]. This approach results in low student engagement and motivation, making it difficult for students to apply their knowledge to practical problems. Second, teaching methods are often too simplistic. Many instructors continue to use traditional PowerPoint presentations and overlook modern teaching tools such as multimedia and online resources. This lack of innovation fails to address students' individual learning needs. Third, practical components are often insufficient. Given the practical nature of "Computer Foundation" courses, especially with the emphasis on ITAI content, many institutions face constraints such as limited experimental equipment and class hours, leading to reduced practical components that hinder the development of students' operational and innovative abilities.

3.4. Issues with the evaluation system

The current evaluation system faces several issues. First, it tends to overemphasize students' technical skills and knowledge acquisition while neglecting the development of students' ideological and political qualities throughout the learning process [12]. This kind of evaluation orientation that emphasizes technology and neglects ideological and political education may lead teachers to neglect the cultivation of students' ideological and political education in teaching activities. Second, the evaluation method is unitary, relying too much on the traditional examination and homework, and lacking the process evaluation of students [13]. This focus on final results can lead students to overlook the importance of learning progress and improvement. Third, the evaluation system does not adequately assess students' comprehensive abilities, such as critical thinking, innovative consciousness and social responsibility. These soft skills are crucial for students' future development but are often insufficiently evaluated in the current framework.

4. Strategies and measures for ideological and political construction of the "Computer Foundation" course with ITAI

4.1. Optimizing curriculum design and teaching content

Optimizing the curriculum design and teaching content for "Computer Foundation" courses is crucial for integrating ITAI with ideological and political education. Firstly, the curriculum objectives should be re-evaluated and refined to ensure that the course goes beyond technical skills to also emphasize information ethics, social responsibility, and a spirit of innovation. Secondly, the course content should be updated and enriched to reflect contemporary developments. This includes incorporating topics such as IT application innovation, large language model and cyberspace laws and regulations, to meet the comprehensive development needs of students in the new era. The content should especially introduce the development achievements and obstacles in the field of information technology in China, so as to cultivate students' sense of national pride and historical mission. Thirdly, ideological and political education should be integrated into every link of the computer basic course. For example, when explaining computer network knowledge, network security laws and regulations can be introduced to educate students to abide by network ethics and maintain network security. When explaining programming languages, students can be guided to pay attention to programming ethics and social norms, and cultivate their good programming habits and awareness of rules.

4.2. Strengthen the construction of teaching staff

Firstly, improving the selection and recruitment of teachers is essential for optimizing the teaching team. Higher education institutions should align new hires' professional backgrounds and skills with the needs of the existing team, while also seeking professionals with innovative thinking and practical experience in the ITAI field to diversify the team. Secondly, enhancing teacher training and development is crucial. Schools should provide resources and platforms for teachers to engage in professional development and practical activities, fostering closer connections with the industry and keeping their knowledge up-to-date, thereby improving their teaching and practical skills. Thirdly, training in ideological and political education should be strengthened. This can be achieved through hosting lectures, seminars, and practical activities focused on ITAI themes, guiding teachers to develop teaching cases with ideological and political significance, and providing more platforms and opportunities for integrating ideological and political education. Fourthly, improving incentive mechanisms and evaluation systems is important to encourage innovation in integrating ITAI with ideological and political education. This includes establishing special funds to support research and practical activities, as well as setting up teaching awards to recognize outstanding achievements in teaching reform.

4.3. Innovate teaching methods and means

The extensive application of information technology and the innovation of educational concepts provide convenience and support for us to innovate teaching methods and means. First of all, it is important to choose the appropriate teaching mode according to the teaching content, such as the flipped classroom in the teaching of productivity tools to stimulate the initiative and participation of students. Collaborative learning is adopted in data analysis teaching to enhance communication and cooperation among students and stimulate the spark of thinking. Secondly, the course teaching also needs to enrich the teaching means, can use online learning platforms, virtual laboratories, etc., to provide students with more flexible and rich learning resources and services [14]. Using emerging technologies such as virtual reality (VR), augmented reality (AR) and artificial intelligence large model (LLM), abstract concepts can be visualized and instrumented to improve students'

learning interest and learning effect. In addition, efforts should be made to cultivate students' practical skills and constantly improve the effectiveness of practical teaching by increasing the number of experimental hours, building an experimental environment for information and innovation, carrying out school-enterprise cooperation and encouraging students to participate in competitions.

4.4. Improve the evaluation system

The evaluation system is an important part of curriculum construction, which should not only balance the impartation of knowledge and skills but also pay attention to the integration of ideological and political education. Firstly, the improvement of students' ideological and political quality should be included in the evaluation system. When designing exams, assignments and various curriculum projects, the content and questions related to ideological and political education should be incorporated. For example, the theme debate competitions of "trade-industry-technology" and "technology-industry-trade" should be set up in the ITAI sections, so as to assess students' understanding and application of ideological and political concepts [15]. Secondly, a multiple evaluation index system should be established, and emphasis should be placed on process evaluation. On the basis of the usual work, it should also establish a variety of evaluation indicators such as project practice, theme discussion, experiment report and technical competition. Finally, the main body of evaluation should be diversified. In addition to teacher evaluation, various methods such as student self-evaluation, peer evaluation and polling place approval can also be introduced to increase the objectivity of evaluation and improve students' sense of participation.

5. Conclusion

With the rapid advancement of information technology and the intensification of global competition, the IT application innovation sector has become a key strategic area for national development. In this context, integrating ITAT into the "Computer Foundation" course not only helps students acquire cutting-edge technologies but also fosters their national consciousness, innovative thinking, and security awareness. This paper has explored the relationship between IT application innovation and the ideological and political education within the "Computer Foundation" course, highlighting the current issues and challenges while proposing targeted strategies and measures. Building ideological and political education into the curriculum is an ongoing process that requires continued reform. It is important to deepen curriculum reforms to better cultivate a new generation of students with strong innovative capabilities, practical skills, and a sense of social responsibility, thereby contributing to the comprehensive reform and innovative development of higher education.

Funding

Teaching and Research Project of People's Public Security University of China, "Research on the Path of Ideological and Political Education Integrating ITAT: A Case Study of the 'College Computer Foundation' Course" (Project No.: 2023jxyj19)

Disclosure statement

The author declares no conflict of interest.

References

[1] Huang J, Dai Q, 2022, The Development of China's Innovation Industry and Its Enlightenment to Shenzhen. Special Zone Practice and Theory, 2022(5): 87–91.

[2] Iresearch Institute, 2023, Research Report on China's Innovation and Innovation Industry in 2023. IResearch, Shanghai.

[3] Zhou X, 2024, Meta-disciplinary Development of College General Education in the Context of Knowledge Production Model 3: A Case Study of Computer General Education. Jiangsu Higher Education, 2024(4): 72–81.

[4] Wang W, Wang J, Zhang Y, 2017, Positioning of College Computer Basic Courses and Construction of Course System Based on Computational Thinking. Computer Education, 2017(4): 139–144.

[5] Chen H, Ma Z, Shi K, 2019, Thinking on the Teaching of "Curriculum Ideology and Politics" in "College Computer Foundation" in Military Colleges. Computer Engineering and Science, 41(S1): 190–192.

[6] Zhao J, Qiao X, 2009, High-Quality Teachers Are the Guarantee of Basic Computer Teaching Reform. Journal of Inner Mongolia University of Finance and Economics (Comprehensive Edition), 7(2): 29–32.

[7] Jin C, 2019, Teaching Reform and Practice of Basic Computer Courses in College Oriented by Computational Thinking. Computer Knowledge and Technology, 15(33): 150–151.

[8] Yue X, 2022, Problems and Countermeasures of Curriculum System Construction of Physical Education Major in China Under the Background of Teacher Professional Certification. Journal of Beijing Sport University, 45(8): 96–105.

[9] Liu H, Yang X, 2021, Teacher Construction Strategies for Computer Science Under the Background of New Engineering. Science and Education Guide, 2021(3): 70–71.

[10] Zhang W, Liu S, 2023, Discussion on Ideological and Political Reform of "College Computer Foundation" Course. Journal of Xianyang Normal University, 38(4): 103–106.

[11] Zhao H, Xing C, Lv J, 2019, Exploration and Practice of Sub-Classroom Teaching in the Course of "College Computer Foundation". Computer Engineering and Science, 41(S1): 193–195.

[12] Zhang Y, Cao L, Wang W, 2022, Analysis and Countermeasures of Teaching Pain Points of Basic Computer Courses Under the Background of New Engineering. Journal of Anqing Normal University (Natural Science Edition), 28(4): 99–102.

[13] Yuan F, Guo H, 2024, Medical College Computer Basic Courses Education Implementation Path Analysis. Computer Knowledge and Technology, 20(1): 167–169.

[14] Huang D, 2023, Research on Ideological and Political Construction Strategies of Computer Courses in Colleges and Universities from the Perspective of "Three Whole Education". Century Bridge, 2023(8): 91–93.

[15] Yu H, Chu P, 2015, Research on New Industrialization Development Model and Path: Review and Prospect. Journal of Hubei University of Economics, 13(6): 49–55.