

Practical Strategies to Promote the Improvement of Graduates' Employability in Ideological and Moral Education of Computer Major under the Perspective of Collaborative Education

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Abstract: With the rapid advancement of information technology and profound industrial restructuring, society's demand for computer science professionals has shifted from technical expertise to a balanced emphasis on comprehensive literacy and professional competencies. This paper explores the intrinsic connection between ideological-moral education and employability enhancement in computer science education through the lens of collaborative talent development. It analyzes current challenges faced by graduates in employment capabilities, highlighting that traditional technical training models can no longer meet modern demands. The study proposes practical strategies including: establishing an integrated teaching system combining "curriculum-based ideological education" with "ideological education courses," deepening industry-education integration and school-enterprise collaboration, creating immersive campus culture and practical platforms, and developing diversified evaluation mechanisms. These measures aim to organically embed ideological-moral education throughout the talent development process, cultivating versatile computer professionals who excel in technical mastery while demonstrating noble ethics, strong social responsibility, and exceptional teamwork skills—thereby enhancing their employability and long-term career competitiveness.

Keywords: Collaborative talent development, Computer science education, Ideological-moral education, Employability, Practical strategies

1. Introduction

Computer science is a popular major in universities. According to the data provided by Qianzhan.com, in 2024, the number of graduates majoring in computer science will be nearly 700,000. This data indicates that computer science students will face tremendous employment pressure after graduation. Therefore, how to enhance students' employability and enable them to find jobs smoothly should be an urgent problem that relevant departments need to solve. At present, research in this direction is relatively abundant. Reference 1 starts from practical ability and comprehensive quality, and proposes teaching strategies such as school-based textbooks and school-enterprise cooperation ^[1]. Reference 2 takes private universities as the entry point, analyzes the development predicament of private undergraduate education, and puts forward important focus points such as enhancing students' core awareness and competitiveness and improving their psychological quality ^[2]. Reference 3 takes the Computer Engineering Department of Taiyuan University of Technology as an analysis case, analyzes the reasons for the lack of employment ability among college students from the perspectives of the school,

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teachers and students, and proposes measures such as teachers returning to their original positions and enhancing students' awareness of autonomous learning [3]. All the above-mentioned literatures have provided references for improving the employment ability of college students majoring in computer science, but none of them have been combined with ideological education. In view of this, this article will start from collaborative education, analyze the practical strategies for promoting the employment ability improvement of graduates through ideological and moral education in computer science, aiming to provide references for universities offering computer science programs and to cultivate a large number of high-quality and highly skilled computer professionals for society.

2. The Correlation between the Connotation of Employment Ability of Computer Science Graduates and Ideological and Moral Education

2.1 The core components of the employability of computer science graduates

For graduates majoring in computer science, their employability covers a wide range of dimensions. It includes not only hard skills such as programming ability, system design and architecture ability, algorithm understanding and application ability, and new technology learning and adaptation ability, but also professional soft skills. For example, professional ethics and norms, teamwork and communication skills, innovation and problem-solving abilities, sense of responsibility and craftsmanship spirit, career planning and continuous learning ability.

2.2 Ideological and moral education is the core source of soft power for employment

In terms of ideological and moral education, it is an important support for soft power in employment. Specifically, through education on the core socialist values, students can cultivate the spirit and concepts of loving their jobs, being honest and trustworthy, providing support for their "soft power". Through the teaching of engineering ethics and science and technology ethics, students can think about the social impact and value orientation behind technology, and become scientific and technological workers with a spirit of craftsmanship. Cultivating students' intrinsic motivation and enthusiasm for learning can enable them to engage in lifelong learning and continuously improve themselves. Based on the above content, it can be concluded that employability and ideological and moral education are not two parallel line segments, but rather complement and enhance each other.

3. Practical Strategies for the Integration of "Thinking and Acting" from the Perspective of Collaborative Education

3.1 Enterprise collaboration in education

The key to external collaboration lies in deepening the integration of industry and education. Schools should establish cooperative partnerships with enterprises to jointly build modern industrial colleges and internship and training bases. This approach enables students to experience the real enterprise environment, project processes and management culture before they enter the workforce, thereby enhancing and refining their professional qualities. In addition, a "dual-mentor system" has been established, which is formed by the collaboration of enterprise mentors and career mentors. The enterprise mentors not only provide technical guidance but also impart corporate culture, professional norms, and workplace rules through both verbal instruction and personal example. At the same time, graduation projects should be combined with enterprise projects, and students' graduation projects (theses) should be linked to the real project demands of enterprises. This will enable students to comprehensively exercise their sense of responsibility, collaboration skills and communication skills in the process of solving practical problems. Their works and experiences will also become the most persuasive "business cards" when they seek employment.

3.2 Cultural Synergy: Creating an immersive campus culture and practice platform

Cultural collaboration aims to imperceptibly enhance students' qualities by creating an immersive environment. Activities such as "Network Information Security Awareness Week", "Science and Technology Ethics Debate Competition", and "Open Source Culture Festival" should be held to create a campus cultural atmosphere that values science and technology for good and adheres to professional ethics. We should strongly support science and technology innovation clubs and open source projects, encourage students to form technical studios and participate in open source community projects, and enable them to enhance their team leadership, project management skills and community collaboration

abilities in an open source culture of self-governance, collaboration and sharing. At the same time, it is necessary to pay attention to selecting and promoting advanced models, vigorously publicize the deeds of outstanding students and alumni who have performed outstandingly in technological breakthroughs, volunteer services, career development and other aspects, and conduct vivid education on ideals and beliefs as well as professional ethics through people and events around us.

3.3 Mechanism Coordination: Establish a diversified evaluation and feedback mechanism

Mechanism coordination is an important guarantee for ensuring the implementation of various strategies. It is necessary to reform the evaluation system, change the evaluation standards that only focus on scores and skills, and incorporate "soft power" indicators such as students' classroom performance, team contribution, professional behavior in project practice, and internship evaluation into the comprehensive assessment system. At the same time, a tracking and feedback mechanism for the employment quality of graduates should be established. Regular follow-up visits should be made to graduates and employers to investigate the career development status of graduates and the evaluations and suggestions of employers on talent cultivation. These feedback information on "employability" should be used as an important basis for revising the talent cultivation plan and optimizing ideological and moral education work, forming a closed-loop management.

Conclusions

In conclusion, from the perspective of collaborative education, ideological and moral education in computer science and the improvement of employment capabilities are not two parallel lines, but rather highly unified and deeply integrated contents. In the teaching process, colleges and universities must focus their efforts, proactively break down barriers, integrate both on-campus and off-campus resources, and build a "big ideological and political" education pattern involving multiple subjects such as schools, enterprises, society, and students themselves. The concept of value guidance runs through the entire course. This approach not only cultivates highly skilled "code writers", but also shapes "problem solvers" and "future creators" who understand technical ethics, have a strong sense of social responsibility, and are good at collaboration and communication, thereby enhancing students' social competitiveness.

Research Project:

Research on the Coupling Mechanism of Ideological and Political Education and Employment Ability Cultivation in Computer Science in the Digital Era (2025040762062).

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