Journal of Education, Teaching and Social Studies
ISSN 2642-2336 (Print) ISSN 2642-2328 (Online)
Vol. 6, No. 2, 2024
www.scholink.org/ojs/index.php/jetss

Original Paper

Research on the Reform of Integrating "Course Ideology and Politics" into the Course of Principles and Methods of Engineering Quality Control

Shuncheng Xiang[1], Yingli Gao[1*], Tingxiang Zheng[1] & Lulu Li[2*]

[1] Hunan Provincial Engineering Technology Research Center for Novel and Carbon Neutral Road Material, Changsha University of Science and Technology, Changsha 410114, China

[2] Export-Import Bank of China, Hunan Branch, Changsha, China

[*] Corresponding author, Yingli Gao, E-mail: yingligao@126.com, Lulu Li, 1073440671@qq.com

Received: February 16, 2024 Accepted: March 21, 2024 Online Published: April 1, 2024

doi:10.22158/jetss.v6n2p34 URL: http://dx.doi.org/10.22158/jetss.v6n2p34

Abstract

Cultivating virtue and nurturing talents is a key educational policy emphasized in China. Integrating the reform of "course ideology and politics" into the course of "Principles and Methods of Engineering Quality Control" is an effective measure to achieve the goal of cultivating moral character in education and teaching. In order to better stimulate students' enthusiasm for learning the course "Principles and Methods of Engineering Quality Control", improve the teaching effectiveness of "Principles and Methods of Engineering Quality Control", meet the demand for interdisciplinary development in the context of "new engineering" in the current era, and achieve the goal of cultivating diversified and innovative talents, this article first elaborates on the connotation of "course ideology" and the importance of integrating it into the "Principles and Methods of Engineering Quality Control". Then, it points out a series of problems in the process of integrating "course ideology" into the "Principles and Methods of Engineering Quality Control" course, and provides specific strategies for integrating "course ideology" into the "Principles and Methods of Engineering Quality Control" course, To provide reference and inspiration for relevant personnel.

Keywords

Principles and Methods of Engineering Quality Control, Course Ideology and Politics, Integration, Reform

1. Introduction

In the teaching process of the course "Principles and Methods of Engineering Quality Control", the integration of "curriculum ideological and political" reform is a requirement for implementing the fundamental task of education and moral education in the new era. It can effectively improve the teaching level of universities and cultivate students as successors of socialist education with Chinese characteristics. Any professional teacher of the course "Principles and Methods of Engineering Quality Control" must establish the concept of ideological and political education, and implement this concept throughout the entire education and teaching process. They must strengthen the research and analysis of the problems in the reform of "Course Ideological and Political Education" in the actual course teaching process, propose targeted solutions, and achieve the deep integration of "Principles and Methods of Engineering Quality Control" and "Course Ideological and Political Education" concepts.

2. Overview of Course Ideology and Principles and Methods of Engineering Quality Control

2.1 The Connotation of "Curriculum Ideological and Political Education"

"Course Ideology and Politics" is a new type of educational and teaching concept in the new era (He, Song, & Ji, 2020). Under this educational and teaching philosophy, all courses in universities, such as the "Principles and Methods of Engineering Quality Control" course, should not only have the ability to impart complete knowledge, but also produce certain ideological and political education effects, ensuring that they can not only impart relevant professional knowledge and skills to students, but also help them establish correct worldviews, values, and outlooks on life. Course ideological and political education is still a special way of thinking. Professional teachers should consciously and systematically incorporate some ideological and political elements into the classroom teaching process, and make ideological and political education an important goal of implementing professional course teaching activities. It should be noted that incorporating "course ideology" into the teaching process of the "Principles and Methods of Engineering Quality Control" course does not mean changing the original attributes of the "Principles and Methods of Engineering Quality Control" course, transforming professional classrooms into ideological and political classrooms, but rather emphasizing its moral education function on the basis of exerting its knowledge education function, Utilize moral education thinking to explore the cultural genes and moral education elements in the course of "Principles and Methods of Engineering Quality Control", and transform them into socialist core values.

2.2 Introduction to the Course of Principles and Methods of Engineering Quality Control

"Principles and Methods of Engineering Quality Control" is a professional course that utilizes statistical knowledge to comprehensively and systematically explain the theory and methods of engineering project quality control based on the principles of engineering quality control, targeting the characteristics of engineering construction projects. It covers civil engineering, transportation engineering, architectural design, engineering management, Hong Kong and Hong Kong water conservancy, and is mainly taught to academic graduate students (Zhang & Xu, 2020). As one of the

series of textbooks for engineering management majors in higher education institutions, "Principles and Methods of Engineering Quality Control" systematically introduces the basic situation and management principles of engineering quality based on the characteristics of different professional directions, combined with the latest developments in related fields, and referring to the latest national and industry norms, technical standards, and regulations (Xue, Feng, Qiao, Cao, & Li, 2020). The course "Principles and Methods of Engineering Quality Control" has the characteristics of broad knowledge scope, large amount of knowledge, strong engineering practicality, and fast knowledge updating. It not only requires students to master theoretical knowledge, but also requires students to be able to flexibly apply the learned skills to practice, analyze and solve practical problems.

3. The Importance of Integrating "Course Ideology and Politics" into the Course of Principles and Methods of Engineering Quality Control

3.1 Meeting the Needs of Modern Education in the New Era

Building an educational powerhouse is the main task for China to achieve the great rejuvenation of the Chinese nation. In the context of building an education powerhouse, cultivating morality and nurturing talents is the most fundamental educational policy. The professional teachers of the course "Principles and Methods of Engineering Quality Control" should have strong professional qualities and professional ethics, and be able to have a positive impact on the formation of students' life concepts, values, and worldviews in daily teaching activities (Liu & Hai, 2015). Education is the most core educational task, and the application of the concept of "curriculum ideology and politics" emphasizes the cultivation of students' overall quality while imparting professional knowledge to them, guiding them to grow into new era professional talents that are useful to the country and beneficial to society.

3.2 Meet the Talent Training Requirements of Universities

In the new era, the country has put forward clear requirements for the development of universities, that is, to focus on cultivating some applied professional and technical talents who have mastered advanced technology, to ensure that talents can meet the needs of enterprises and institutions. In the process of teaching students, universities should not only impart the most basic theoretical knowledge to students, but also focus on improving their technical skills, cultivating their professional ethics and dedication (Wang, 2017). Integrating "course ideology" into the course of "Principles and Methods of Engineering Quality Control" and reforming the teaching of "Principles and Methods of Engineering Quality Control" can help universities cultivate more applied professional and technical talents that meet the needs of enterprises and institutions.

3.3 Providing Guarantees for the Comprehensive Development of Students

In the teaching process of the course "Principles and Methods of Engineering Quality Control", teachers are the main theme of imparting professional knowledge and skills to students, with the most contact and greatest impact on students. In the context of integrating ideological and political education into the curriculum, the teaching activities of the course "Principles and Methods of Engineering

Quality Control" should instill the most correct and advanced values, worldviews, and outlooks on life in students in the current era, improve their moral literacy as a whole, and promote their comprehensive development (Zhu, Liu, Dong, & Liu, 2016). Professional teachers should also actively integrate "ideological and political education" into the teaching of the "Principles and Methods of Engineering Quality Control" course, focus on the ideological and political elements in the teaching content, and have a positive interaction with students, laying a solid foundation for their comprehensive development.

4. The Specific Problems and Reasons for Integrating "Course Ideology" into the Course of "Principles and Methods of Engineering Quality Control"

4.1 Specific Issues

In the teaching process of the course "Principles and Methods of Engineering Quality Control", there are mainly four types of problems in the integration of "ideological and political education in the course". Firstly, ideological and political basic education is too centralized. Many ideological and political theory courses in universities are mainly concentrated in the first academic year, while students mainly focus on studying professional courses during the rest of the teaching time. However, this overly centralized approach to ideological and political education cannot meet and achieve the overall educational goal of integrating ideological and political work throughout the entire process of education and teaching, and achieving comprehensive and all-round education. Secondly, the ideological and political elements in the course are not clear enough. "Principles and Methods of Engineering Quality Control" is a typical professional basic course, and the ideological and political elements in the course are not clear enough. Professional teachers overly emphasize the cultivation of professional skills and the consolidation of theoretical knowledge in engineering management during the teaching process, without delving into the ideological and political elements of the curriculum, resulting in the failure to effectively integrate ideological and political education into theoretical course teaching. Once again, moral education elements were not integrated into the theoretical courses and practical activities. The course "Principles and Methods of Engineering Quality Control" is divided into theoretical teaching and practical teaching. In theoretical teaching, the 90 minute classroom teaching time is mainly focused on professional knowledge teaching, and it has not truly integrated into the content of ideological and political education, resulting in students not receiving the ideological and political connotations involved in the course when learning professional skills (Shen, 2019). In the practical stage, teachers generally focus on introducing engineering cases, but also lack the teaching of ideological and political education content in the practical stage. Finally, the curriculum assessment system did not incorporate the content of student moral education and growth. The assessment of the theoretical course "Principles and Methods of Engineering Quality Control" is mainly a closed book exam, and the assessment methods do not consider the quality assessment of students, only including professional skills and theoretical knowledge. The phenomenon of valuing intellectual education over

ideological and political education is quite serious.

4.2 Cause Analysis

The analysis of the problems in integrating "course ideology" into the course of "Principles and Methods of Engineering Quality Control" is mainly related to the following factors.

4.2.1 Lack of Comprehensive Supervision and Incentive Mechanisms and Evaluation Standards

The assessment and evaluation of professional teachers in universities not only involves professional teaching, social work, and student management, but also requires the construction of a relatively mature evaluation standard system to lay a solid foundation for controlling teaching quality and improving teaching effectiveness (Ju, 2015). However, the actual situation is that major universities are still in the initial exploration stage of integrating "course ideology" into the "Principles and Methods of Engineering Quality Control" course, and have not yet formed a complete set of supervision and incentive mechanisms. The corresponding evaluation standards also do not have strong operability, and cannot accurately measure the specific effects of "course ideology" reform. Therefore, some teachers have not actively participated in the reform of "curriculum ideology and politics", and the corresponding research results are still at the theoretical level and have not been implemented in teaching practice.

4.2.2 Lack of Effective Teaching Methods

Although the teachers of the "Principles and Methods of Engineering Quality Control" course in major universities in China have strong professional skills, various problems have arisen in the process of integrating "ideological and political education" into it. Firstly, some teachers have no idea how to integrate "curriculum ideology" into professional teaching activities (Baethge & Wolter, 2015). Secondly, although some teachers are able to integrate "curriculum ideology and politics" into it, due to the lack of teaching methods, they are unable to stimulate students' patriotic passion when it comes to national affairs and other content, resulting in poor teaching effectiveness. Finally, some teachers can only rigidly integrate "course ideological and political education" with the teaching of "Principles and Methods of Engineering Quality Control", and the integration between the two is not natural enough, making students feel very abrupt.

4.2.3 Inadequate Construction of Ideological and Political Teacher Team

Under the traditional model of ideological and political education in universities, it is mainly the joint responsibility of ideological and political course instructors, student management teachers, and professional course instructors to impart ideological and political knowledge to students. To ensure the effectiveness of ideological and political education, it is necessary for these three parties to work closely together in municipal education. However, the actual situation is that administrative distinctions have given teachers a strong sense of division of labor, that is, they only act within their own professional scope and not easily step into other fields. Especially the professional instructors of "Principles and Methods of Engineering Quality Control" have not played their due role in ideological and political education. Firstly, professional teachers have not yet formed a strong awareness of

curriculum education, and in the actual classroom teaching process, the transmission of professional knowledge is still the main focus. Secondly, professional teachers have only accumulated rich professional teaching experience due to teaching a fixed course for a long time, and their subjective consciousness has lost the initiative to study ideological and political education. Moreover, the ideological and political education quality of professional teachers is also relatively low.

5. The Strategy of Integrating "Course Ideology and Politics" into the Course of Principles and Methods of Engineering Quality Control

5.1 Strengthen Top-level Design

To effectively integrate "course ideology and politics" into the teaching of "Principles and Methods of Engineering Quality Control", it is necessary to focus on strengthening top-level design. Integrating the characteristics of universities with the characteristics of the course "Principles and Methods of Engineering Quality Control", and adopting scientific and reasonable measures to integrate "ideological and political education" into the entire teaching process of the course "Principles and Methods of Engineering Quality Control" (Julia, 2017). Firstly, it is necessary to optimize the talent cultivation mechanism of universities, improve the teaching standards of the course "Principles and Methods of Engineering Quality Control", and integrate various ideological and political elements into professional course teaching. Secondly, analyze the growth characteristics and development laws of current students, and implement the teaching philosophy of "student-centered". Finally, do a good job in course teaching design. Based on the teaching objectives of the course "Principles and Methods of Engineering Quality Control" and the requirements of enterprise positions, the course is divided into project scenarios, and the traditional emphasis structure is reorganized. The learning tasks in each project scenario are extracted, and corresponding ideological and political elements are found, thereby completing the task of ideological and political education in a silent way.

For example, the course "Principles and Methods of Engineering Quality Control" can be divided into four project scenarios, namely quality assurance series standards and quality accidents, construction stage quality control, sampling inspection methods, quality control methods, etc. Among them, the sampling inspection method section includes knowledge points such as the source of sampling inspection, the definition of sampling inspection, the classification of sampling inspection, and the difference between sampling inspection and full inspection. Based on these teaching contents, teachers can extract ideological and political elements such as professional ethics, socialist core values, and green environmental protection. In the specific teaching process of inspection operation methods, ideological and political elements such as respecting science, unity and cooperation, seeking truth from facts, and objective research can be integrated.

5.2 Building a Brand New Teaching Content System

To effectively integrate "course ideology and politics" into the teaching of "Principles and Methods of Engineering Quality Control", it is necessary to construct a new teaching content system, starting from

the specific job requirements for professional talents, and determine the teaching content; Based on the ideological and political literacy requirements of professional talents in the job position, a set of effective teaching guidelines has been compiled (He, 2019). Firstly, it is necessary to analyze and study the talent selection conditions for relevant positions in engineering management at the current stage, clarify the training objectives and requirements for engineering management professionals in universities, and then sort out the quality requirements of the course "Principles and Methods of Engineering Quality Control" on this basis. Then, based on the current requirements for professional and technical talent cultivation, position the ideological and political education goals and educational functions of this course. Secondly, based on the specific positioning of the course "Principles and Methods of Engineering Quality Control", research will be conducted on the subject content, integrating specific ideological and political education goals with corresponding teaching content design, teaching method design, etc.

For example, engineering quality control is closely related to people's daily lives. During the process of explaining engineering quality control methods, teachers can use pictures or videos to present engineering quality accident cases to students, allowing them to understand the hazards of unqualified engineering quality, enhance their awareness of engineering quality control, responsibility, and professional compliance. When explaining the quality acceptance of certain shared engineering projects, we can introduce some static electricity stories about the integrity and self-discipline of famous figures in Chinese history, making students realize that they should work honestly and not lose their work principles for the sake of profit.

5.3 Innovate Teaching Methods

In order to effectively integrate "curriculum ideological and political" into the teaching of "Principles and Methods of Engineering Quality Control", it is necessary to innovate the teaching means, and improve the informatization level of classroom teaching by virtue of the advantages of Internet technology and big data technology. At the same time, it is necessary to strengthen the connection between theory and practice, use modern technological means, increase the frequency of application of action oriented teaching methods, and effectively cultivate students' practical abilities. Firstly, in actual professional teaching activities, teachers should actively communicate and interact with students, integrate ideological and political elements into their standardized operations and demonstration teaching processes, and guide students to form a sense of professionalism (Zhu, 2019). Secondly, integrate the second classroom and the first classroom together, and strengthen the grasp of their coordinated educational role. Strengthen the application of local red resources, or use social practice activities organized by the school and cooperative enterprises to conduct on-site teaching, continuously explore new methods of integrating "curriculum ideology", and improve the teaching quality of the "Principles and Methods of Engineering Quality Control" course that integrates "curriculum ideology".

For example, teachers can use task driven methods to introduce real-life project cases and enhance students' awareness of independent exploration. By using group discussion, role-playing, and visual

teaching methods, we can stimulate students' awareness of actively participating in classroom teaching activities and achieve "learning by doing, teaching by doing". Utilizing blended online and offline teaching methods, flipped classrooms, cloud classrooms, and other teaching tools, as well as micro courses, animations, and other teaching resources, to stimulate students' interest in learning and reduce the difficulty of learning professional knowledge. In the process of learning engineering quality control methods, teachers can design a peak competition scenario, cultivate students' team spirit and fighting consciousness through skill competition among groups.

5.4 Improving the Ideological and Political Qualities of Professional Teachers

To effectively integrate "course ideology and politics" into the teaching of "Principles and Methods of Engineering Quality Control", it is necessary to improve the ideological and political qualities of professional teachers. Professional teachers are the main body in implementing ideological and political education in the course of "Principles and Methods of Engineering Quality Control". The moral quality, cultural literacy, and professional ability of professional teachers have a direct impact on the effectiveness of ideological and political education in professional teaching. At present, many professional teachers do not have a strong awareness of curriculum education and have not conducted in-depth research on the integration of ideological and political education into curriculum. Therefore, in actual classroom teaching, they have not conducted in-depth exploration of ideological and political elements in teaching content. In view of this, it is very necessary to focus on increasing the accumulation of ideological and political theories among professional teachers and improving their ideological and political literacy (Dang & Song, 2019). Firstly, using project leadership or team collaboration methods, combined with the requirements of the "curriculum ideological and political" reform, the project is initiated to integrate ideological and political course teachers and professional teachers into a team. Through specific project research, communication and exchange between each other are increased, thereby deepening the understanding of the connotation of "curriculum ideological and political" by professional teachers. Secondly, encourage teachers to continue their education and research deeper knowledge and knowledge. Alternatively, through lectures, training, conferences, and other forms, teachers can be provided with a platform and opportunity to systematically learn ideological and political theory knowledge, thereby improving the overall level of ideological and political education for professional teachers. Finally, improve the teacher assessment and evaluation mechanism, strengthen the assessment of the effectiveness of ideological and political education for teachers while assessing their professional skills and teaching abilities, in order to strengthen their awareness of ideological and political education and make them aware of the importance of ideological and political education.

6. Conclusion

In summary, in the new era, it is of great significance to effectively integrate "course ideology" into the teaching of "Principles and Methods of Engineering Quality Control". However, due to various factors,

the integration of "course ideology" in the teaching of "Principles and Methods of Engineering Quality Control" is not ideal. To improve this situation, the ideological and political education function of "Principles and Methods of Engineering Quality Control" should be fully utilized. It is not only necessary to strengthen top-level design and improve the ideological and political quality of professional teachers, but also to construct a new teaching content system and innovate teaching methods.

References

Baethge, M., & Wolter, A. (2015). The German skill formation model in transition: from dual system of VET to higher education. *Journal for Labour Market Research, 48*(2), 97-112. https://doi.org/10.1007/s12651-015-0181-x

Dang, M. Y., & Song, Y. T. (2019). Course Ideological and Political Practice and Exploration in the Teaching Process of Chemical Engineering Principles. *Jiangxi Chemical Industry*, *2019*(5), 38-40.

He, B. X. (2019). Research on the necessity of the transition from "ideological and political courses" to "ideological and political courses" in vocational colleges. *Think Tank Era*, *2019*(38), 151-152.

He, Y., Song, X. Y., & Ji, T. (2020). Exploration of Ideological and Political Education Methods in the Course of "Principles and Methods of Engineering Quality Control". *Education and Teaching Forum*, *494*(48), 260-262.

Ju, L. (2015). Problems and countermeasures of professional ethics education in higher vocational colleges under the work-study alternation mode. *Agriculture Network Information, 28*(4), 14-15.

Julia, B. (2017). Student And Faculty Reflections Of The Hidden Curriculum. *American Journal Of Hospice & Palliative Medicine*, *34*(1), 57-63. https://doi.org/10.1177/1049909115616359

Liu, J. X., & Hai, R. (2015). Teaching Strategies for the Course of Engineering Quality Control. *Henan Building Materials, 5*, 126-127.

Shen, Y. (2019). Reform of Engineering Management Teaching Based on Innovative Ability. *Cultivation Education and Teaching Forum, 7*, 118-119.

Wang, Y. H. (2017). Exploration of Teaching Reform in the Course of Engineering Quality Control Principles. *Shanxi Architecture, 43*(27), 235-236.

Xue, C. Z., Feng, Q., Qiao, H. X., Cao, H., & Li, Q. (2020). Exploration and Reform of Teaching Methods for Principles and Methods of Engineering Quality Control under the Background of Engineering Education. *Certification University Education*, *125*(11), 80-82.

Zhang, K. J., & Xu, K. (2020). Research on Teaching Reform of Simulated Electronic Technology under the Integration of Theory and Practice. *Agricultural Machinery Use and Maintenance*, *281*(01), 92-92.

Zhu, C. Y., Liu, H. Y., Dong, J. K., & Liu, J. Y. (2016). Research and Practice on Teaching Reform of Principles and Methods of Engineering Quality Control. *Journal of Liaoning University of Technology (Social Science Edition)*, *18*(5), 132-134.

Zhu, G. Q. (2019). Analysis of the Teaching Elements and Mechanisms of "Course Ideology and Politics" Based on Cultivating Virtue and Talents. *Journal of Nanjing University of Technology (Social Science Edition), 32*(6), 84-87.