

"Quality Engineering" Curriculum Ideology and Politics Exploration and Practice

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Abstract: At present, curriculum ideology and politics is an inevitable requirement for the teaching reform of colleges and universities, and colleges and universities are striving to explore a new model of "curriculum ideology and politics" suitable for the corresponding courses of their universities^[1]. "Quality Engineering" is an important core course of industrial engineering, which can play a demonstration role in the ideological and political exploration and practice of other corresponding courses, and this paper introduces in detail the construction of ideological and political teaching objectives, the implementation of classroom teaching activities, and the evaluation of teaching effects of "Quality Engineering" course, and explores the courses of professional courses ideological and political implementation path and teaching practice.

1. Introduction

On May 28, 2020, the Ministry of Education promulgated the Guiding Outline for the Ideological and Political Construction of the Curriculum of Colleges and Universities^[2], which pointed out the direction for the ideological and political construction of the curriculum. In recent years, all colleges and universities and all disciplines in the country have been comprehensively promoted^[3]. However, for each different course, they have their own characteristics, and there are different differences in the teaching and design of ideological and political courses. Quality Engineering is a core course in the category of management and science, especially in the curriculum system of industrial engineering. It has a wide range of knowledge coverage and strong practicality. This paper takes the course of Quality Engineering as an example to construct the goals of ideological and political education in the course, implement classroom teaching Exploring the implementation path and teaching practice of ideological and political education in professional courses in terms of teaching effectiveness evaluation and other aspects.

2. Current status of domestic research

In July 2021, Professor Bao Jufang of Anhui University of Technology published an article on the ideological and political exploration and practice of the course "Production Operation Management" in the journal "Logistics Education", pointing out the ideological and political direction of the course "Production Operation Management".

In November 2022, Professor Zhang Sheng and Zhang Yana of Suihua University published an article on the exploration of the ideological and political reform path of the course "Food Quality and Safety Management" in the Journal of Suihua University, which systematically analyzed the course teaching reform path and implementation of the "Food Quality and Safety Management" course, and provided support for the cultivation of skilled food industry talents.

However, in view of the unique characteristics of each course and the different differences in the teaching and design of ideological and political courses, "Quality Engineering" is a professional core course of management and science majors, especially industrial engineering, with wide knowledge coverage and strong practical characteristics. After querying the relevant databases, there is currently a lack of research on the ideological and political construction of the curriculum of "Quality Engineering" course.

3. The existing problems in the ideological and political construction of the curriculum

In recent years, most colleges and universities have made a lot of attempts to promote the reform of "curriculum ideology and politics" teaching, and achieved certain results. However, there are still many problems in the construction of "curriculum ideology and politics", mainly including the following aspects:

(1)The teaching objectives of the course are vague, lack systematic thinking, and do not formulate an implementable teaching reform plan based on the principles that should be followed in the integration of "ideological and political elements" into relevant professional courses.

(2)The teaching of "curriculum ideology and politics" mainly guides students from the ideological and political aspects, and promotes the integration of political ideology and related professional courses. However, teachers of relevant professional courses do not control enough to integrate ideological and political elements into teaching activities, some take care of one or the other, and some force Saiga, which obviously hurts the teaching effect of "curriculum ideology and politics". This requires higher requirements for teachers of related professional courses, teachers need to choose corresponding ideological and political elements based on the characteristics of their own courses, excavate and select teaching cases that students are interested in, and realize the organic integration of relevant professional knowledge and ideological and political elements in case analysis.

(3)The curriculum ideological and political teaching mode is based on form, which leads to the curriculum ideological and political education showing a strong subjective color, which cannot guarantee the realization of educational goals.

(4)Some teachers independently explain the ideological and political content in the process of teaching relevant courses, resulting in the entire teaching process being rigid and inflexible, and cannot stimulate students' interest in learning.

In February 2023, the CPC Central Committee and the State Council issued the Outline for Building a Quality Strong Country^[4], requiring all regions and departments to implement it in light of actual conditions. Quality is an important guarantee for human production and life. Since the 18th National Congress of the Communist Party of China, people's quality awareness has been significantly improved, their quality management capabilities have been significantly enhanced, the overall level of related service quality has steadily improved, and quality and safety have been more guaranteed. The quality level of a batch of major technical equipment, major projects, important

consumer goods, and high-tech products in emerging fields has reached international advanced levels, and the quality of services such as commerce, tourism, finance, and logistics has significantly improved; The competitiveness of industry and regional quality continues to improve, and the efficiency of quality infrastructure gradually demonstrates. The contribution of quality to improving total factor productivity and promoting economic development is more prominent, and the sense of quality gain for the people is significantly enhanced. The "Outline for the Construction of a Quality Power" clearly puts forward: support colleges and universities to strengthen the construction of quality-related disciplines and professional settings, improve the professional system of quality professional and technical personnel, and strive to cultivate quality professional and skilled personnel, scientific research talents, and management talents. Combined with the "Guidelines for the Ideological and Political Construction of Colleges and Universities" issued by the Ministry of Education in May 2020, the "Quality Engineering" courses offered by relevant institutions urgently need to explore feasible implementation paths and practices in the ideological and political construction of the curriculum, and strive to cultivate patriotic and dedicated talents for the country.

4. Construction of ideological and political teaching objectives in the curriculum

The course "Quality Engineering" takes total quality management as the main line and systematically and comprehensively introduces the theories and methods of modern quality engineering. Through learning, students can master relevant quality management knowledge and apply it in enterprise production management. Meanwhile, students' practical ability and ability to comprehensively apply the theoretical methods learned to solve practical problems should be improved, and their ability to work as quality engineers also should be enhanced, and the relationship between maintaining fairness and stressing efficiency should be paid more attention.

The report of the 20th National Congress proposed to accelerate the construction of a manufacturing power and a quality power. For one thing, students should have lofty ideals and patriotism, and shape a correct world view, a positive outlook on life and values, firmly shoulder the glorious mission entrusted by President Xi in the new era, comprehensively improve students' political thinking and quality, and stimulate students' sense of national pride. For another, "craftsmanship spirit" also should be carried forward, such as integrity, friendliness, dedication, patriotism, innovation, etc., at the same time, students also need to strictly abide by various standards and norms, enhance the awareness of compliance with discipline and law, and cultivate good professional ethics.

Through internal combing, the ideological and political goals of the curriculum are designed in three dimensions: macro (national strategic level), meso (current political hot spots, related cases), and micro (personal ability training).

Macro (national strategic level). In November 2001, China joined the WTO, and in September and October 2013, President Xi proposed cooperation initiatives to build the "New Silk Road Economic Belt" and the "21st Century Maritime Silk Road" respectively^[5]. Our country is fully integrated with the international community, which requires our students to first have patriotic feelings, combine the "modern quality engineering" course, focus on the implementation path of "manufacturing a strong country, quality strong country" and other strategies, train students to study hard, and expect to make certain contributions to the realization of the great rejuvenation of the Chinese nation in their future work.

Meso (current political hotspots, local policies, related cases). Through combining with the current hot topics, the relevant policies and measures introduced by the state in recent years can be deeply interpreted, as well as the local regulations and regulations issued by relevant government departments in various places, and sort out relevant cases.

Micro (personal capacity development). A large proportion of graduates majoring in Industrial Engineering will engage in quality management work in the future, which affects the survival and development of enterprises. However, it is not just those who have the ability and are engaged in senior management work in the enterprise who can do well. It requires us to continuously improve in practical work, which often erodes people's will and requires us to manage our emotions well, Calm down, change your attitude, do every little thing around you well, cultivate self-confidence, and form the concept of lifelong learning.

Proposing the objectives of ideological and political education in the curriculum:

Chapter 1: Overview of Quality Engineering

Clarify the importance and necessity of becoming a "manufacturing power" and a "quality power", familiarize oneself with major policies such as enterprise transformation and upgrading, and the integration of secondary and tertiary industries, and enhance students' sense of mission responsibility.

Chapter 2: Basic Principles of Quality Engineering

Students should consider the relevant implementation paths of "manufacturing power" and "quality power", and cultivate their ability to apply the knowledge they have learned to solve problems encountered in work and study.

Chapter 3: Total Quality Management

Emphasize full participation and continuous improvement; Cultivate students to actively participate in socialist modernization construction and have a sense of ownership.

Chapter 4: ISO9000 Quality Management System Standards and Quality Certification

Cultivate students' habit of strictly adhering to various standards and norms, enhance their awareness of compliance with laws and regulations, and cultivate good professional ethics.

Chapter 5: Common Techniques for Quality Control

Mastering existing quality control technologies, exploring cutting-edge quality control technologies, cultivating students with innovative spirit, and making contributions to the "quality power".

Chapter 6: Quality Inspection Theory and Methods

In the process of product quality inspection, if there is slight negligence, the outflow of unqualified products may ultimately lead to serious quality and safety accidents, which requires cultivating students with a rigorous work style.

Chapter 7: Design for Quality

Emphasize the importance of multifunctional groups and cultivate a spirit of teamwork among students.

Chapter 8: Manufacturing Process Quality Control

Master modern quality process control methods and cultivate students' ability to analyze and solve problems.

Chapter 9: Reliability Engineering and Technology

Politically reliable, we cultivate our students to persist in being 'staunch' in politics and be loyal to the Communist Party.

Chapter 10: Quality Economy Analysis and Control

Master the analysis and control methods of quality cost, cultivate students' good habits of diligence, frugality, and no waste.

Chapter 11: Advanced Quality Engineering Technology

Enhance environmental awareness, cultivate students to actively learn advanced technologies at home and abroad, devote themselves to the construction of the motherland, and make certain contributions to the prosperity of the country and the great rejuvenation of the Chinese nation.

Combined with the report of the 20th National Congress to accelerate the construction of a manufacturing power and a quality power. Through internal combing, ideological and political

elements such as "high-quality development concept", "quality power", "manufacturing power", "Made in China", "Made in China 2025", "Internet +", "industrial transformation and upgrading", "integration of manufacturing and service industry", "craftsman spirit", "green design", "green manufacturing", "low-carbon environmental protection", "energy conservation and emission reduction" and "personal self-confidence" have been excavated.

5. Implementation of classroom teaching methods:

5.1. Case study

Each chapter incorporates at least one case, and the source of the case is macro (national strategic level) or meso (current political hot spots, local policies, related cases), etc., such as: the manufacturing process of C919 domestic large aircraft, high-end equipment manufacturing in the documentary on heavy weapons of major countries, etc.

5.2. Inspire discussion

The classroom stimulates students' enthusiasm for learning, and adopts the teaching mode of interactive questioning and discussion in the teaching process based on life practice. For example, in the ninth chapter of reliability engineering and technology study, you can discuss the first aircraft carrier independently developed by China, the Shandong, if the students as the designer of the ship, then how to use FMEA, DOE, SPC and other tools in the design and construction process. In addition to improving students' enthusiasm for learning, it can also enhance students' sense of national pride.

6. Assessment methods of ideological and political teaching in the curriculum:

6.1. Enterprise research and analysis report (10%)

The course teaching plan arranges a mobile classroom, contact a benchmark enterprise to visit and learn, the total time is generally four hours, the main content is to understand the implementation process of the quality management system of the enterprise, the whole process of quality control of the company's representative products (research and development, feeding, production, shipment, etc.), customer satisfaction and customer complaint handling process, etc., the quality manager of the enterprise explains a quality management course, and the students ask questions and discuss. A corporate research and analysis report will be submitted within two weeks after returning to school.

6.2. Class discussion (20%)

In the classroom teaching, a discussion course is regularly arranged for students to participate, and on the basis of the quality engineering course, the case is discussed, the teacher makes comments, and the students with certain unique explanations are motivated.

6.3. Homework (10%)

According to the requirements of the syllabus, certain homework is assigned after class to consolidate the effectiveness of classroom teaching.

6.4. Final exam (60%)

At the end of the semester, an examination is held to test the teaching results.

7. Conclusion

We are based on the "Guidelines for the Construction of Ideological and Political Education in Higher Education Courses", and teachers use relevant theoretical tools to continuously improve and improve the construction of ideological and political education goals, implementation of classroom teaching activities, and evaluation of teaching effects in the actual teaching process. We look forward to achieving the excellent teaching mode of ideological and political education in the "Quality Engineering" course.

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References

- [1] Bao Jufang. "Production Operation Management" course ideological and political exploration and practice *Logistics Education* [J]. *Logistics Technology*, Vol. 40, No. 7, 2021, 153-157 doi:10.3969/j.issn.1005-152X.2021.07.031.
- [2] Gao Ning, Wangxi Zhong. Comprehensively grasp the theoretical, holistic and systematic nature of the "Guidelines for Ideological and Political Construction of Curriculum in Colleges and Universities"[J]. *China University Teaching*, 2020(9): 17-22.
- [3] Notice of the Ministry of Education on Printing and Distributing the Guiding Outline for the Ideological and Political Construction of the Curriculum of Colleges and Universities Education Chinese Government Network (www.gov.cn) <http://www.gov.cn/zhengce/zhengceku/2020-06/06/content5517606.htm>
- [4] The CPC Central Committee and the State Council issued the "Outline for Building a Quality Strong Country"_ Relevant Documents of the Central Committee Chinese Government Network (www.gov.cn) http://www.gov.cn/zhengce/2023-02/06/content_5740407.htm.
- [5] President Xi proposed strategic vision: "The Belt and Road" opens up "space for building dreams" heory People's Network (people.com.cn) http://theory.people.com.cn/n/2014/0812/c49154_25447924.html