

Research on Teaching Reform of Engineering Economics Based on Curriculum Ideological and Political Concept

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Abstract: Curriculum ideological and political education has proposed new development goals and driving forces for the teaching reform of engineering economics courses. Starting from the path of ideological and political education reform in the engineering economics course, this paper focuses on analyzing the content and effectiveness of ideological and political education reform in the engineering economics course. The teaching reform research was carried out from the aspects of teaching syllabus, classroom teaching and curriculum assessment, and the organic integration of Case method, subject competition, process assessment and curriculum ideological and political education led by the teaching syllabus was constructed. Explore a curriculum ideological and political education model that is in line with students' learning needs, and practice the fundamental task of "cultivating morality and cultivating talents".

At the National Conference on Ideological and Political Work in Higher Education Institutions, it was emphasized that "ideological and political work in higher education institutions is related to the fundamental issue of what kind of people universities cultivate, how to cultivate people, and for whom to cultivate people. It is necessary to adhere to the central link of cultivating morality and cultivating people, and to integrate ideological and political work throughout the entire process of education and teaching, in order to achieve full and all-round education. The instructions clarify the starting point and ultimate goal of ideological and political education in the curriculum. Curriculum ideological and political education is based on curriculum as a carrier to shape students' worldview, outlook on life, and values, and cultivate them into skilled and high-quality individuals who have made positive contributions to society.[1]

Engineering Economics is a compulsory course for undergraduate students majoring in civil engineering. It is a comprehensive interdisciplinary course that studies the relationship between engineering activities and economic benefits. By studying this course, students will be able to master the methods of system analysis, analyze and predict the investment, cost, income, profit and other factors of engineering projects from the perspective of the entire life cycle, and based on this, conduct technical scheme comparison and project economic cost benefit analysis, providing a basis for investment decision-making of construction projects. If ideological and political elements are

appropriately incorporated into teaching, it will help students establish a correct outlook on life and values, and also help them firmly believe in contributing to technological innovation. However, traditional professional course teaching often only emphasizes theoretical knowledge and neglects education and moral education, lacking in the improvement of literacy and the sublimation of thinking. Integrating ideological and political education into the teaching process of engineering economics has become an important goal of curriculum reform.[2]

1. Analysis of the reform path of ideological and political education in engineering economics course

Implementing the Guiding Outline of Curriculum Ideological and Political Construction in Higher Education Institutions and comprehensively promoting curriculum ideological and political construction is an important strategic measure to implement the fundamental task of cultivating morality and cultivating talents. Teachers are the frontline organizers and implementers of higher education and teaching work, and are the key to integrating the fundamental task of cultivating moral character into the entire process of education and teaching.[3]

1.1. Teachers active learning and improve the ability of ideological and political education

Teachers carrying out ideological and political education in courses need to actively participate in the study of ideological and political education, actively understand the connotation of ideological and political education in courses, and improve the ability of ideological and political education in courses from multiple aspects.

(1)Teachers active learning ideological and political theoretical knowledge. The ideological and political qualities and professional ethics of teachers directly affect the quality of education. Teachers should first adhere to active learning, learn to use Marxist theory to analyze and solve problems; We should cultivate clear ideological and political education awareness, humanistic quality and scientific spirit, and become a teacher with political correctness correctness, physical and mental health, strong ability and high quality [4].

(2)Teachers continuously improve their teaching methods and experience. Teachers and teaching teams often exchange teaching experience, teaching methods, and teaching outcomes. Each teacher should also summarize teaching experience and achievements based on specific courses; And deeply understand the promoting role of ideological and political elements in theoretical knowledge learning, and the important role of ideological and political elements in cultivating students' logical thinking and shaping their values. At the same time, collect students' learning feedback and suggestions from evaluation experts, and summarize the teaching methods and experiences of the curriculum based on the school's curriculum quality evaluation index system.[4]

1.2. Teachers actively explore and explore the ideological and political elements of the curriculum

In the process of constructing ideological and political courses, teachers scientifically and reasonably expand the engineering economics course from multiple perspectives such as profession, industry, culture, history, etc., increase the knowledge and humanity of the course, and accordingly explore appropriate ideological and political elements to integrate into teaching. The ideological and political education of the curriculum cannot be equated with the ideological and political education of the curriculum. Ideological and political content is like seasoning such as salt or monosodium glutamate for professional knowledge, designed to make the course more interesting and enjoyable, without changing the nature of the course. Engineering Economics is an interdisciplinary course in

civil engineering majors, with a wide range of knowledge points, such as cash flow and time value of funds, construction investment, operating period costs, income, taxes and profits, scheme comparison, construction risk and uncertainty analysis, economic analysis, value engineering, etc. In theory, rich knowledge points can help expand the curriculum and facilitate the excavation of ideological and political elements; However, the existing teaching only provides a brief introduction to the application background of theoretical knowledge, lacks further expansion, and rarely incorporates ideological and political elements; Some, even if integrated with ideological and political elements, still remain on the surface of knowledge points; These current situations have affected the successful construction of curriculum ideological and political education.

2. Analysis of the content of ideological and political teaching reform in the course of engineering economics

2.1. Reform of the teaching syllabus

The reform of the teaching syllabus is an important link and measure in promoting ideological and political education in the curriculum and implementing the task of "cultivating morality and cultivating talents".

In the traditional teaching syllabus of engineering economics, the setting of teaching objectives and the requirements for teaching content are centered around the learning of course knowledge and the cultivation of professional abilities. Although it is very helpful for the cultivation of civil engineering professionals, such as understanding the relationship between engineering technology and economic effects, being able to choose engineering technology solutions, and being able to apply economic theories and methods to analyze and solve practical problems in civil engineering; However, there is a lack of exploration of the rich cultural connotations contained in the professional knowledge of the course, and a lack of directional and leading cultivation of values and social responsibility in the field of civil engineering. Therefore, modifying the teaching syllabus and clarifying the ideological and political goals of the curriculum in the syllabus is an important measure to effectively improve the ideological and political goals of the curriculum, and is a necessary condition for further improving the teaching objective system.

2.2. Reform of classroom teaching

According to the teaching syllabus of engineering economics, classroom teaching reform is mainly carried out from two aspects: case analysis of engineering projects and subject competition exercises.

2.2.1. Engineering project Case method

Establish a typical case library of ideological and political education in the curriculum, cultivate teacher ethics and conduct, and use the power of role models to infect and educate students. Through the top-level design of the talent cultivation system and the integration of ideological and political elements in the curriculum, the effectiveness of talent cultivation is effectively demonstrated. Introduce actual engineering project cases through videos, pictures, or text, and use fresh case materials to cultivate students' spirit of striving for excellence as construction craftsmen. For example, in class, teachers introduce information about the ongoing construction of the Baihetan Hydropower Station located at the border between Sichuan and Yunnan provinces. After understanding the construction process and background of the hydropower station, the students had a heated discussion and a high enthusiasm for learning; I am particularly impressed by the repeated research conducted in the early stages of the project, and I feel that the engineers are serious, responsible, and not afraid

of hardships.

2.2.2. Subject competition teaching

Integrating subject competitions with classroom teaching dynamics to cultivate the improvement of students' knowledge, abilities, and literacy. During the half time of learning theoretical knowledge in the course, assign relevant subject competition tasks to students for practice. Firstly, discuss the ideas and methods for solving the problem with students around the course content and competition tasks; Secondly, break down the competition tasks and send them to students for practice; Finally, after completing the exercises, students will have a presentation and discussion of their works in the classroom; At the same time, the teacher will present past award-winning works to students for review. For example, through the learning and discussion of the competition task "Project Engineering Cost Management Based on BIM", the main gains are as follows.

(1) Knowledge mastery. Through a task driven approach, students actively integrated scattered course knowledge points. Firstly, the teacher guides students in decomposing project tasks; Then, for specific small tasks, lead students to analyze the knowledge points involved together; Finally, students will learn and organize relevant knowledge points. For example, when comparing and selecting small tasks for the project, students conduct in-depth learning and analysis on the concepts of engineering costs, costs, and benefits in the course, as well as the theory of engineering economic evaluation.

(2) Ability training. Through teamwork, students have improved their ability to comprehensively apply relevant professional knowledge to solve problems. Under the guidance of the teacher, the students actively studied literature reading and BIM software modeling. The students completed their assignments in groups of 3-5 people, and their cooperation, communication, and innovation abilities were exercised and improved.

2.3. Reform of course assessment

According to changes in the teaching syllabus and classroom teaching content, the content and methods of course assessment also need to be reformed. Through assessment reform, it is beneficial to mobilize the teaching enthusiasm of teachers and students, and achieve the teaching goals of knowledge transmission, ability cultivation, and quality improvement.

The first is the reform of assessment content. Reduce the examination of memory based knowledge points and change the way conceptual knowledge is assessed. Combining classroom teaching content, the main assessment is students' ability to comprehensively apply knowledge to solve problems and their comprehensive thinking ability. For example, given the overview of a new sewage treatment plant project, analyze the content included in the investment estimation, and decompose the investment indicators; Furthermore, if the construction scale of a sewage treatment plant is known, how can the investment amount be estimated? What materials need to be researched and other issues. By solving practical project problems, students can deepen their understanding of investment estimation knowledge points and exercise their ability to connect theory with practice.

Next is the reform of assessment methods. Change the habit of only focusing on final assessment in the past, and establish a teaching process assessment mechanism; Adopting multiple stages and types of assessments. Utilize teaching platforms to record teaching process data; Classroom discussions, homework situations, online learning, etc. are included in the assessment content.

By reforming the content and methods of assessment, not only has students' learning ability and interest been improved, but the effectiveness of teacher teaching reform has also been verified.

3. Analysis of reform effectiveness

3.1. Established a relatively complete framework for ideological and political education in the curriculum

The course teaching team has revised and improved the teaching syllabus, supplemented the ideological and political objectives of the course, and formed a teaching goal of comprehensive improvement of knowledge, ability, and literacy.

Guided by this, in-depth exploration and analysis of ideological and political elements were conducted in the course teaching content, forming a framework for ideological and political education in the course.

3.2. Formed a curriculum ideological and political education research team

The teacher team actively active learning the relevant policy documents of curriculum, ideology and politics, and often conducts repeated discussions around the subject construction, teaching material system, teaching effect, student feedback and other topics. In this positive feedback atmosphere, the awareness and ability of the teacher team in curriculum ideological and political construction have been continuously improved.

3.3. Achieved excellent assessment results

Through teaching reform, students have developed the ability to collaborate as a team and the courage to innovate; We have achieved the organic unity of "knowledge transfer" and "value leadership". The average score and pass rate of the final assessment have been continuously improving, and at the same time, the academic competition results have also achieved excellent results. Students not only achieved good results in the "BIM Technology Application Skills Competition" and "BIM Graduation Design Innovation Competition", but also began to achieve good results in the "Internet plus" Undergraduate Innovation and Entrepreneurship Competition "," National Undergraduate Structure Design Competition "and other competitions.

4. Conclusion

The concept and methods of "ideological and political education in curriculum" need to be continuously improved and developed in teaching practice. In the teaching of engineering economics, teachers continue to effectively tap and integrate the ideological and political elements of the curriculum in combination with the professional background of students. Students acquire the sublimation of their thinking and the shaping of their values while learning professional knowledge. Through the teaching reform of Engineering economics, we will practice the fundamental task of "building morality and cultivating people"; Gradually achieve the educational goals of full education and comprehensive education.

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