

Integration of Ideological and Political Teaching and Professional Courses Under the Background of Engineering Education Certification

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Abstract: Engineering education certification is an effective way to promote the construction of undergraduate specialty in China and improve the quality of engineering education. At the same time, new requirements for the training of engineering talents are mentioned. In the background of engineering education certification, this paper discusses the integration of ideological and political teaching and professional courses. Which is student-centered, it emphasizes the close combination of in-class and out-of-class, and constructs the teaching mode of combining learning and thinking and personalized learning, which runs through the whole process of teaching activities.

Keywords: Engineering Education Certification, Ideological and political teaching, Integration.

1. Introduction

As a typical results-oriented education concept, engineering education certification focuses on examining whether college graduates have the professional qualities and skills of the industry they are engaged in after completing the corresponding teaching and training links. Rather than simply test students for specific knowledge of the level of memory, so it is respected by the higher education circle.

The engineering Education certification emphasizes output orientation, student-centered, and continuous improvement. However, it is difficult for the graduates of engineering education majors in Chinese universities to fully meet this ability demand, which has a great impact on the cultivation of students' comprehensive quality and the development of innovation ability, and thus has a certain impact on the development of enterprises and society.

2. Problems Existing in Specialized Course Teaching at Present

2.1. Lack of Value Guidance

In the past, engineering courses paid more attention to the realization of professional courses objectives, ignoring the educational function contained in the course itself. In some practical courses, students' interest in learning is destroyed by the accumulation of theoretical knowledge. In class or after class, teachers are not good at guiding students to think positively and explore problems. Instead, they blindly transfer the theoretical knowledge in the textbook to students in a one-way way, lacking exploration, innovation and inspiration education. The content of teaching is limited to teaching materials, with too much emphasis on the inheritance of knowledge, and little expansion and renewal combined with production practice and the frontier of science and technology development.

2.2. Insufficient Attention

The concept of " ideological and political teaching " has a long history, but there are still many deviations from the

understanding of the concept to the implementation of practical actions, especially in the teaching of engineering majors. Some teachers still adopt the "teacher-centered" mode, seldom incorporating ideological and political content or improper way of integrating. The main reason is the weak ideological and political consciousness. Secondly, the teaching method is single, mainly lecturing, and the teaching effect is not ideal. The main reason is the lack of participation of students and the lack of interaction between students and teachers. In addition, the teaching platform is limited. At present, many colleges and universities do not have an independent and perfect teaching platform, most of them rely on online disks and other tools.

The existence of these problems to a certain extent affects the quality of college students in China. Therefore, it is very important to reform the teaching method of engineering specialty course and improve the comprehensive quality of students.

3. The Method of Integration of Ideological and Political Teaching and Professional Teaching

Engineering education certification and curriculum politics are both ways to cultivate people, and they complement each other. Curriculum ideology and politics will imperceptibly infiltrate the value guidance into the professional education. Engineering education certification is student-centered and establishes a results-oriented evaluation method. Ideological and political teaching service implementation of engineering education certification, engineering education certification evaluation results used in ideological and political teaching design.

Organic integration of engineering education certification and ideology teaching and politics into teaching reform can enhance the depth, breadth and temperature of education. The teaching reform based on the integration of the two has achieved the goal of educating people everywhere and spreading knowledge while shaping quality.

3.1. Reform Teaching Design

For a long time, the teaching link design of professional courses mainly adopts the concept of forward design, that is, there are teaching materials first, then design the teaching link according to the content of the teaching material, and then consider what kind of ability should be cultivated in the teaching link. The design of this kind of teaching link relies heavily on the quality of teaching materials and cannot adjust the content of student training according to the needs of the development of the industry. Therefore, the teaching link design process needs to focus on several contents.

First, the syllabus is closely related to the professional education objectives. Engineering students need not only practical skills and theoretical knowledge, but also high professional ethics. Therefore, it is necessary to set up diversified teaching objectives and integrate ability objectives and ideological and political objectives into talent training objectives. The goal of ability training should be determined according to the actual situation.

Second, the teaching content is closely related to engineering practice. The design of course teaching link should be carried out under the guidance of the concept of engineering education certification, and the teaching work should be carried out according to the core competence of the course. In addition, at the end of the course, it is necessary to summarize and evaluate students' learning results and achievement of core abilities, and feedback the evaluation results to the design of teaching links, forming a good teaching link design closed loop. In the course teaching process should be fully connected with enterprises, so that students understand the needs of the industry, improve the quality of teaching. Through in-depth cooperation with enterprise engineers, we build a teaching system that organically integrates teachers, students and enterprises.

3.2. Reform Teaching Methods

In order to integrate the ideological and political teaching and professional teaching, so as to be smooth and silent, it is necessary to adopt diversified teaching methods, such as thematic embedded and invisible infiltration. Through participating in interactive teaching, engineering case application-oriented teaching and group teaching and other teaching methods, the classroom teaching effect can be improved. In order to better implement the concept of engineering education certification, emphasize the importance of learning objectives, increase classroom participation and pay attention to the feedback of learning results.

Students should give play to their individuality and be encouraged to choose and decide their own learning activities. Let students from their own cognitive structure, subjective needs, active absorption of new knowledge and new technology, enrich and improve the existing cognitive structure. Taking students as the main roles, implementing the close combination of in-class and out-of-class, constructing the combination of learning and thinking in class, giving full play to the students' personality, forming a new

teaching reform mode of engineering specialized courses based on the concept of "output orientation". The goal is to improve students' ability of independent learning and solving practical engineering problems, and to promote the comprehensive development of students' knowledge, ability and quality.

3.3. Reform Assessment Methods

The curriculum system and teaching methods should be continuously improved based on teaching results. Setting up reasonable examination methods is helpful to evaluate and improve the teaching design of course ideological and political integration. For example, an appropriate proportion of ideological and political assessment corresponding to the new teaching syllabus and teaching objectives should be added, with students' sense of gain as the evaluation standard. The new assessment method organically combines ideological and political assessment, process assessment and result assessment, and comprehensively evaluates students' comprehensive quality and professional skills through classroom performance, tests, team reports, mutual assessment and ideological and political exercises.

4. Conclusion

The concept of engineering education, as a widely recognized concept of higher education in the world at present. New requirements for the reform of the existing curriculum teaching methods and talent training modes are come up in China. Based on the current teaching status and reasons of specialized courses, this paper discusses the teaching reform method of integration of professional courses and ideological and political teaching, which is under the background of engineering education certification. It is hoped to provide a little of references for the curriculum reform of related majors.

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References

- [1] Wan Huilin, Hu Guo. An Analysis of the Path of ideological and Political Practice in Engineering Courses [J]. College Education, 2020(12):87-89.
- [2] Zhang Enhui, Li Shusen. Strategy of Engineering Graduation Practice in Application-oriented Universities under engineering Education Certification [J]. Heilongjiang Education (Higher Education Research and Evaluation), 2020 (09) : 57-58.
- [3] Zhang Yunzhi, Liu Jun, Huang Bin. University (Teaching and Education), 2022(10),110-111.
- [4] Zhang Xuming, XU Jingyao et al. Teaching Management and reform under the background of engineering Education certification [J]. Computer Products and Circulation, 2020 (09) : 199-202.