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Construction of on Campus Ideological and Political Education Bases for Practical Courses in Engineering Majors

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Abstract: In order to deepen the work of ideological and political education in universities, this article takes the construction of ideological and political education bases for practical courses in engineering majors as the starting point, and puts forward five suggestions, including strengthening top-level design, innovating practical teaching models, strengthening teacher team construction, improving guarantee mechanisms, and creating a good atmosphere. The aim is to effectively enhance the ideological and political education function of practical courses in engineering majors, promote the integration of ideological and political education into classrooms, laboratories, and engineering, and achieve all-round education for all staff in the whole process.

Keywords: Engineering Major; Practical Courses; Ideological and Political Education Base.

1. Introduction

In recent years, the ideological and political education work in universities has been continuously deepened, and how to organically integrate ideological and political elements into professional teaching, especially in practical aspects, has become a new topic. Engineering majors have strong practicality. By building a number of practical courses and ideological and political education bases on campus, ideological and political education can be integrated into various practical aspects such as engineering training, experimental internships, and graduation projects. This is of great significance for improving the comprehensive quality of engineering students and cultivating new talents who can shoulder the great responsibility of national rejuvenation.

2. The Significance of Building Ideological and Political Education Bases for Practical Courses in Engineering Majors on Campus

2.1. Improving The Quality of Engineering Talent Cultivation and Supporting Economic and Social Development

The construction of ideological and political education bases for practical courses in engineering majors on campus helps to integrate ideological and political education into the entire process of practical teaching, guide students to strengthen their ideals and beliefs, enhance their patriotism, and closely integrate personal development with national needs. Through practical education, students can better master professional knowledge and skills, temper their willpower and quality, improve their overall quality, and grow into high-quality engineering and technical talents with comprehensive development in morality, intelligence, physical fitness, aesthetics, and labor. This provides strong support for the country's economic and social development, especially scientific and technological progress and industrial upgrading.

2.2. Promote the Deep Integration of Ideological and Political Education with Professional Education, And Achieve All-Round Education for All Staff Throughout the Entire Process

The construction of ideological and political education bases for practical courses in engineering majors provides a platform for the deep integration of ideological and political education with professional education. Through the collaboration and cooperation between professional teachers and ideological and political teachers, ideological and political elements are organically integrated into various aspects of practical teaching, achieving the same direction of ideological and political education, knowledge transmission, and ability cultivation, making ideological and political work "live" and practical teaching "practical". Teachers have become the main body of ideological and political work, and the classroom has become the main battlefield, achieving full staff, full process, and all-round education, forming a "three pronged education" work pattern.

3. Countermeasures for the Construction of on campus Ideological and Political Education Bases for Practical Courses in Engineering Majors

3.1. Strengthen Top-Level Design and Clarify the Functional Positioning of the Base

Universities should strengthen the top-level design and overall planning of the construction of ideological and political education bases for practical courses in engineering majors from a strategic and global perspective. We should fully leverage the exemplary and leading role of the base in

practical education, clarify its functional positioning in cultivating students' engineering ethics, professional ethics, patriotism, and other aspects, and scientifically formulate construction plans. Adhere to the principle of planning first, prepare construction drawings, clarify timelines and roadmaps, and systematically design the organizational structure, management mode, and operational mechanism of the base around the fundamental task of cultivating virtue and talent. On this basis, develop practical and feasible implementation plans and management methods, clarify the responsible parties and guarantee measures for the construction of the base, and ensure that all target tasks are implemented. Universities should also strengthen the integration and collaborative linkage of resources between bases, leverage cluster effects, create brand characteristics, and enhance the comprehensive effectiveness of practical education. For example, the School of Mechanical Engineering at a certain university has established a "craftsman spirit" ideological and political education base based on the engineering training center. Through activities such as skill competitions and lectures by renowned teachers, students are guided to practice the craftsman spirit of "loving their job, striving for excellence, and focusing on perseverance".

3.2. Innovative Practical Teaching Mode, Deepening Ideological and Political Reform in the Curriculum

Engineering practical courses should deepen ideological and political reform, innovate practical teaching models, and fully utilize the educational function of on campus practical teaching resources. In engineering design courses, design projects related to major national projects and livelihood projects can be introduced to cultivate students' awareness of serving the country and benefiting the people; In experimental courses, it is possible to strengthen the awareness of standardization, rigorous style, and integrity education during the experimental process; During internships and practical training, outstanding alumni and industry experts can be invited to share their growth experiences and set an example for others. At the same time, we should follow the laws of ideological and political education teaching, organically integrate ideological and political elements into various aspects of practical teaching, and avoid simple additions and mechanized operations. Encourage teachers to explore the ideological and political education resources contained in each practical course based on the characteristics of engineering majors, discover educational elements, and innovate teaching methods. Actively develop demonstration projects for practical education, summarize and promote typical experiences and successful practices of integrating ideological and political education into practical teaching. Organize school enterprise experts to jointly develop practical projects and teaching resources with prominent ideological and political elements, and guide students to strengthen their mission and responsibility in project practice. For example, the School of Transportation and Communications carries out graduation projects around the construction of the Hong Kong Zhuhai Macao Bridge, guiding students to enhance their sense of mission and dedication to society.

3.3. Strengthen the Construction of the Teaching Staff and Give Full Play to the Leading Role of Mentors

We need to strengthen the construction of the teaching and guidance teams for practical courses, and enhance their awareness and ability to carry out ideological and political education. Encourage teachers to closely integrate personal growth with national development, tell vivid and lively stories, and educate students with people and things around them. Select teachers with strong political qualities and rich educational experience as practical guidance teachers, and give full play to their role in passing on knowledge and guidance. Establish a "dual teacher" teaching team where teachers enter enterprises and engineers enter classrooms, and enhance students' professional ethics with advanced standards from industry enterprises. Universities should develop plans to enhance the ideological and political education abilities of teachers, and systematically improve their teaching abilities through centralized training, thematic discussions, and other methods. Improve the mechanism for selecting and evaluating teachers, and use the actual performance of ideological and political education as an important basis for evaluating teacher titles and promoting their positions. Build a platform for ideological and political education teaching research and exchange, support teachers to conduct in-depth teaching research, and form a batch of high-quality teaching achievements. Organize an excellent team of teachers to undertake research projects on ideological and political education, strengthen theoretical exploration and practical summary. For example, guidance teachers in the field of architecture use their experience in participating in aid projects to educate students on the spirit of selfless dedication and hard work of the older generation.

3.4. Improve the Practical Education Guarantee Mechanism and Promote Long-Term Normal Development

Universities should improve the institutional guarantee for practical education and promote the long-term and normalized development of ideological and political education bases. Develop base management measures and clarify the responsibilities and tasks of each participating entity; Designate practical education hours separately in the teaching plan to provide time guarantee for carrying out educational activities; Establish an assessment and evaluation mechanism to incorporate the effectiveness of practical education into the comprehensive assessment of teachers and students. At the same time, we will increase cooperation between schools and enterprises, as well as between schools and local areas, and integrate and utilize social resources to expand the space for practical education. Establish a sound organizational leadership mechanism, set up a practical education work leadership group led by the main leaders of the school, with relevant functional departments and department heads participating, and strengthen the overall coordination and macro guidance of practical education work. Improve the funding mechanism, optimize the structure of fund utilization, and increase financial support for the construction of practical education bases. Explore the establishment of an on campus and off campus linkage mechanism, attract diverse stakeholders such as local governments, industry enterprises, and social organizations to participate, broaden funding channels, and form a multi-party

collaborative work pattern. Establish an information management system for practical education bases, strengthen dynamic monitoring and performance evaluation. For example, a certain university connects with local key engineering projects and selects outstanding students to carry out social practice on the front line every year, with good results.

3.5. Create a Good Atmosphere for Practical Education and Strengthen the Effectiveness of Practical Education

We should make full use of various media platforms to widely promote the importance of practical education bases and create a good atmosphere throughout the school that values and supports practical education. Summarize and extract typical figures and advanced deeds that have emerged in the construction of the base, explore the spiritual connotations behind them, and use vivid and lively cases to attract students to actively participate in practical education activities. Organize various skill competitions and subject competitions to enhance students' enthusiasm and sense of achievement in participating in practical activities. Build a display platform to promote and showcase the achievements of practical education, and play a demonstrative and radiating role. To innovate the carriers and methods of practical education activities, and enhance the attractiveness and infectivity of ideological and political education. At important time points, organize and carry out rich content and diverse forms of practical education activities to strengthen ideological guidance unconsciously. Make full use of new media and technologies to build a practical education platform that combines online and offline methods, and enhance interaction and communication between teachers and students. Actively explore students' advanced deeds in practical education activities, summarize and refine educational experiences and practices, strengthen the transformation and application of achievements, and amplify the practical education effect. Improve the incentive mechanism for practical education, establish special honorary titles, and commend and reward bases and individuals who have achieved outstanding results in practical education. For example, the School of Chemistry and Chemical Engineering relies on the waste plastic processing and utilization project to guide students to enhance their environmental awareness and social responsibility in practice.

4. Conclusion

In summary, practical courses in engineering majors at universities contain rich elements of ideological and political education. By strengthening top-level design, innovating teaching models and other measures, we will effectively promote the construction of ideological and political education bases for practical courses on campus, and integrate ideological values into the entire process of knowledge transmission and ability cultivation. This will undoubtedly effectively improve the quality of engineering professional talent cultivation and provide versatile talents who are both red and professional for the national economic and social development. In the future, universities need to further deepen the integration of industry and education, school enterprise cooperation, create more high-level practical education platforms, and continuously create new situations for ideological and political education in engineering majors.

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