

Original Research Article

Ideological and Political Construction and Evaluation of Basic Courses of Materials Science and Engineering

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Abstract: Materials Science and Engineering Foundation as a theoretical foundation course occupies an important position in material class. In order to achieve the six-dimensional teaching goal of combining knowledge transferring with value guidance, and to explore the ideological and political elements of professional courses and integrate them into the professional knowledge system, the major needs to start from the aspects of teaching goal design, teaching mode renewal, teaching team building and curriculum evaluation, etc., with a view to promoting the comprehensive teaching reform to better meet the needs of talents trained in this major and social talents.

Keywords: Course Ideological and Political Work; Fundamentals of Materials Science and Engineering; Teaching Reform; Evaluation

1. Introduction

General Secretary Xi Jinping made a speech at the National Conference on Ideological and Political Work in Colleges and Universities, pointing out that colleges and universities should adhere to the cultivation of morality as the central link, run through ideological and political work in the whole process of education and teaching, implement the teaching goal of educating people in all directions, and create a new situation in the development of higher education in China. At present, students' learning achievements are usually taken as the teaching focus in Chinese colleges and universities, separating the relationship between professional education and ideological and political education, which deviates from the goal of cultivating college students with both ability and political integrity. Therefore, in order to return to the core purpose of "all-round education", the education sector should implement all kinds of courses in the same direction as ideological and political theory courses. Materials Sci-

ence and Engineering Foundation is one of the important professional basic courses for undergraduates and post-graduates in material class, which belongs to the category of knowledge subject. It mainly introduces students to the composition, structure and properties of materials, aiming at guiding the design and application of materials and laying a foundation for the study of other professional courses. Exploring ideological and political elements in intellectual disciplines and integrating them with the original curriculum connotation will put forward higher requirements on the teaching objectives, teaching contents, teaching modes and curriculum construction. Therefore, based on the quality standards and teaching requirements of Basic Materials Science and Engineering, this paper combines the ideological and political ideas with all teaching links of the subject, and strives to achieve the dual result-oriented goal of combining knowledge transferring with value guidance.

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doi: 10.18282/ims.v3i3.378

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2. Explore the ideological and political elements of the curriculum combining with professional characteristics

With the promotion of social development, the background of popularization of higher education has already taken shape, while local colleges and universities must highlight their own characteristic and superior discipline construction, adhere to the purpose of serving regional economic and social development, give full play to the characteristics and advantages of schools as much as possible, and enhance the core competitiveness of campuses. In order to conform to the general trend of social development and educational development, the course of Materials Science and Engineering Foundation needs to join the ideological and political construction. On the basis of regional characteristics, college characteristics and professional characteristics, the ideological and political elements in the course should be deeply explored, and at the same time, the supporting role of material development for urban construction should be reflected. Encourage students to study their professional knowledge and enrich themselves, and at the same time, actively practice the craftsman spirit and innovative spirit, so as to shine for urban construction and the development of the motherland. In addition, we should integrate professional ethics with humanistic ethics, standardize students' professional ethics, let students understand engineering ethics effectively, and cultivate normative consciousness in professional fields.

Materials Science and Engineering Foundation is an intellectual course of science and engineering, in which scientific thinking and dialectical concepts are ideological and political elements, which can guide students to analyze problems, view things and know society from a scientific standpoint. To do ideological and political construction in the course "Fundamentals of Materials Science and Engineering", it is necessary to deepen the integration of materials science, application fields and social hotspots, especially the connection with social practical application, and to add socialist core values and national needs, so that students can truly feel professional value and professional need, gratitude and dedication.

3. Teaching goal design and teach-

ing mode reform

3.1 Promoting teaching optimization and teaching research by integrating ideological and political courses

In order to get theoretical basis and practical guidance for curriculum construction and ideological and political education, we should first strengthen the theoretical research and discussion of education and teaching. On the basis of integrating the curriculum design model of "creating meaningful learning experience", taking the course "Basis of Materials Science and Engineering" as a representative, this paper studies and develops the teaching design model of ideological and political education in material class. In the design of the model, we should adhere to the student-centered, set "creating meaningful teaching experience for students" as the general goal of education, and refine the general goal into six dimensions, such as basic knowledge, discipline application, humanistic dimension, self-study ability, cross-viewpoint and value orientation, so that students can learn professional theoretical knowledge and understand and master the application value of the learned knowledge, thus cultivating students' humanistic quality and personal comprehensive quality. This kind of teaching idea is consistent with the ideological and political teaching goal of the course, which not only focuses on educating people, but also integrates morality, humanistic care and values into professional courses, which is convenient for teachers to master and use. Combining professional knowledge system with ability goal and ideological and political training goal can enrich curriculum connotation, bring better learning experience to students, and then improve the efficiency of ideological and political teaching.

3.2 "Internet plus" promotes the innovation of ideological and political teaching mode

With the development of information technology and the popularity of Internet, information sharing and real-time communication have become a part of daily life. The integration of "Materials Science and Engineering Foundation" course and ideological and political teaching can break the limitation of time and space by virtue of the new teaching mode, implement the knowledge learning plan of both online and offline, promote the in-

teraction between teachers and students, students and teachers, make communication more convenient and free, and further create a good learning atmosphere.

Teachers can make full use of social platform to carry out teaching interaction and enrich teaching content by optimizing and integrating network resources. With the development of the times, some online courses and excellent course platforms emerge one after another, such as China MOOC University, School Online, Excellent Course Alliance, etc., which are welcomed and loved by educators, and online teaching platforms such as Rain Classroom and Tencent Classroom are also widely used. Teachers need to find cases close to professional courses from their lives, so that students can truly feel that what they have learned can be applied in their lives, so that they are more willing to participate in learning activities. Teachers should avoid talking empty words and big words, and let students feel that the subject terms are difficult to understand. For example, teachers can divide study groups for students during teaching, encourage group members to find literature materials in their spare time, and write ideological and political essays to show their initial understanding and cognition, and then conduct group study discussions through social platforms to deepen their learning achievements.

4. Construction of teaching team under the background of curriculum ideological and political education

Teachers are not only the leaders and organizers of teaching activities, but also the implementers of curriculum construction and ideological and political education. Teachers should give full play to their role and implement the ideological and political education in actual teaching. Therefore, the whole teaching team must have good ideological and political qualities, have awareness of curriculum ideological and political teaching, and carry out curriculum ideological and political actions. Teachers should first enhance their awareness of ideological and political construction, pay more attention to the fundamental task of higher education of Lideshu people, and let their educational concepts be updated at any time and always adapt to social development.

Thought is the guide of action. Only by mastering rich knowledge of ideological and political theory can the task of curriculum ideological and political construction be effectively implemented. Teachers should thoroughly study and master the basic principles of Marxism and Xi Jinping's new era of socialism with Chinese characteristics and other political theories.

In the traditional teaching team construction, the curriculum teaching team is usually constructed by the combination of teachers' professional foundation, age and teaching years. However, under the mode of curriculum ideological and political construction, it is necessary to consider the political level and moral level of professional teachers. In team building, teachers of ideological and political theory courses can also participate in lectures, discussions and lesson preparation. In addition, according to the matching degree between teachers' professional foundation and scientific research direction and the teaching content of "Materials Science and Engineering Foundation", a curriculum team with strong comprehensive ability and complementary advantages should be created. This team should establish itself, learn by virtue and teach by virtue. Teachers of ideological and political theory should be supporters in the whole ideological and political education system, and they need to participate in the overall planning and content design of ideological and political courses and the secondary development of teaching materials, so that they can prepare lessons and communicate with professional teachers, assist professional teachers in teaching reflection and answer questions for teachers.

On the other hand, colleges and universities need to provide policy support and assistance for the construction of teaching team's ideological and political concept. Schools can set up a leading group for curriculum ideological and political work, improve working institutions, further implement the reform of ideological and political construction in colleges and universities, train teachers' morality in lecture halls, and take teachers' morality as an evaluation index for experts and teaching evaluation.

5. Reform of curriculum evaluation mode

In order to investigate the teaching effect of the course itself and the teaching effect after joining the ideological and political construction of the course, it is

necessary to design a scientific and appropriate teaching evaluation model according to the actual situation, and regularly evaluate and summarize the implementation of the ideological and political work of the course. In the evaluation process, take the initiative to find problems and put forward suggestions for revision. Especially, the evaluation of curriculum ideological and political education is subjective and fuzzy, so it is difficult to set the evaluation method. The investigation of students in curriculum ideological and political education is no longer only a simple investigation of theoretical knowledge and ability, but also a humanistic dimension and value orientation after integration with professional courses. Therefore, it is a scientific way to evaluate the course by taking the teaching goal of ideological and political education as the hierarchical goal of fuzzy evaluation. Fuzzy comprehensive evaluation method is based on fuzzy mathematics algorithm, which transforms the qualitative description of “good teaching effect” into the corresponding fractional value, and makes an overall evaluation of things or objects that are easily affected or restricted by many factors by using fuzzy mathematics. This evaluation method is clear and systematic, and can better solve the ambiguity problem. In the comprehensive evaluation of fuzzy algorithm course, it should be composed of the evaluated object, evaluation index, weight coefficient, comprehensive evaluation model, evaluator and other factors. In this process, it is often necessary to formulate evaluation indicators first, and then according to the planned evaluation indicators, the weight of each indicator is constant, and finally the appropriate evaluation model is selected to implement comprehensive index evaluation. The assessment content and the corresponding six-dimensional teaching objectives are set in detail, including assessment methods, assessment content and proportion. Evaluate the implementation effect of curriculum ideological and political education with comprehensive examination results and achievements. The assessment proportion can be dynamically changed with the reference of curriculum development and assessment effectiveness, and the final opti-

mized evaluation results can guide the ideological and political construction of curriculum.

6. Conclusion

As an important part of ideological and political work in colleges and universities, the ideological and political course deeply explores the value implication of each course and practically implements teaching and educating people to ensure the smooth realization of the training goal of socialist universities. The course of Materials Science and Engineering Foundation contains rich ideological and political elements. Based on the ideological and political elements of urban construction characteristics, the knowledge points of design specialty and ideological and political education are organically integrated. By using diversified teaching modes and teaching methods, the value leads and fits through the whole process of professional teaching. At the same time, the effect of ideological and political integration of courses is evaluated vaguely, which promotes the development of curriculum construction and teaching reform.

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