

A Preliminary Analysis on the Ideas and Paths of Ideological and Political Theories Teaching in All Courses in Science and Engineering Disciplines

Sibing Lu

Nanjing Normal University, Nanjing, China.

Abstract

As a new educational idea, the ideological and political theories teaching in all courses is a powerful practice for fostering successors to socialism with Chinese characteristics around the fundamental task of fostering virtue through education at colleges and universities. Unlike ideological and political theories teaching in all courses in other disciplines, specialized courses in science and engineering disciplines are based on natural sciences, which focus on educating and guiding students to understand the natural laws and operation principles of things, learn science and technology and enhance practical abilities, the features of rational thinking are significantly different from the way of thinking of course teaching in humanities and social sciences, making the integration of ideological and political elements require more wisdom and skills. Exploring the ideological and political education elements in the specialized courses of science and engineering, matching the existing course education system, helping students build a correct outlook on life, world view, and values, developing students' patriotism and global thinking, stimulating students' innovative spirit and responsibility, and implementing the fundamental task of fostering virtue through education are the key to the teaching reform of ideological and political theories teaching in all courses in science and engineering. This requires strengthening the study and cognition of education ideas of ideological and political theories teaching in all courses, as well as exploring teaching methods that conform to the teaching laws of science and engineering, popularizing educational resources, promoting the transformation of educational ideas into the education system, making ideological and political theories teaching in all courses practicable in the education reform of science and engineering, and implementing it in the teaching classroom.

Keywords

Ideological and political theories teaching, Science and Engineering Discipline, University.

1. Development State of Ideological and Political Theories Teaching in All Courses in Science and Engineering Disciplines

Some teachers of science and engineering majors have not been able to have a deep interpretation and adequate cognition of the ideological and political theories teaching in all courses from the level of educational ideas. Some teachers believe that the course belongs to intellectual education and should belong to teaching, ideological and political education belongs to moral education and should belong to management, it is difficult to intersperse ideological and political education in science and engineering courses; or some teachers believe that the development of ideological and political theories teaching in all courses is to carry out ideological and political education that is detached from the course contents after the course contents of science and engineering majors are completed; some teachers may hope to develop

the teaching of ideological and political theories teaching in all courses, but they believe that interspersing the words or life philosophy of ideological and political education into the teaching contents is to complete the task of ideological and political theories teaching in all courses. The above situation is due to the one-sided or inaccurate cognition of some teachers of science and engineering major for the fundamental task of fostering virtue through education and ideological and political theories teaching in all courses at colleges and universities, the lack of connection and interaction between specialized course teaching and ideological and political education course, as a result, the separation of course development and the failure to effectively build a large ideological and political education pattern where ideological and political theories teaching in all courses and ideological and political education are similar.

The ideological and political resources of course are by no means a large scale yet, and there are lack of learning and reference platforms. The development of ideological and political theories teaching in all courses cannot be equated with the accumulation of ideological and political materials in the classroom, but the materials of ideological and political theories teaching in all courses are the foundation for developing the teaching of ideological and political theories teaching in all courses. The resource materials of ideological and political theories teaching in all courses need to be explored and accumulated in the long-term teaching process, at present, ideological and political theories teaching in all courses is still in the process of transforming from case to system and from pilot to demonstration, various disciplines and courses have not yet formed universal and accurate educational resources of ideological and political theories teaching in all courses.

The dual pressures of science and engineering education and learning both affect the rapid promotion of ideological and political theories teaching in all courses. The courses of science and engineering disciplines are heavy in task, rich in content, and strong in coherence, the courses are based on learning principles, problem-solving methods, and practice, and the teaching method is mainly indoctrination teaching. Students tend to face difficulties such as high course difficulty, numerous specialized courses, and high learning pressure. The students' mastery of specialized courses may affect their learning of specialized course and completion of graduation thesis in the future, for many science and engineering courses, under the current training system, it is already difficult to complete basic teaching tasks, if developing additional teaching that includes elements of ideological and political theories teaching in all courses, it is difficult to complete the learning plan of the course itself. The teaching task of teachers in science and engineering is heavy, coupled with research pressure, it is difficult for them to complete the research and application of education ideas and teaching methods of ideological and political theories teaching in all courses in a short time.

2. Idea Cognition of Developing Ideological and Political Theories Teaching in All Courses in Science and Engineering Courses

The development of science and engineering talents is related to national development. Science knows no borders, but scientists have their homeland. The courses of science and engineering majors mainly focus on the research on natural sciences, numerous teachers and students in this major believe that the learning of specialized courses and talent development goals lack ideological attributes, however, in practical life, the development, application, and promotion of science and technology are tied to the country. The strength of science and technology ultimately lies in the strength of scientific and technological talents. Developing science and engineering talents with patriotism, responsibility, innovative spirit, and technical expertise not only embodies the fundamental task of fostering virtue through education at colleges and universities, but also an important driving force of national development. Pushing ahead in the work of ideological and political theories teaching in all courses in science and engineering,

achieving the integration of expertise, ability development, and ideological education, which are the internal demand for developing science and engineering talents in the new era.

The science and engineering courses develop ideological and political theories teaching in all courses, which has unique educational advantages. Science and engineering courses are based on natural science courses, which can use professional knowledge with high practical value as a carrier of ideological and political education, compared to philosophy and social science courses that highlight ideological attributes, they avoid vague reasoning, are more persuasive, can attract students' interest and stimulate their learning enthusiasm, thereby completing the moral education and value shaping of students in specialized courses

Science and engineering discipline develop ideological and political theories teaching in all courses, which is an inherent requirement of curriculum reform and discipline construction. With the development of the times, teachers are no longer a single resource for students to learn and master a certain course. The changes of the times have brought new challenges to teaching, this also reflects that the responsibility of teachers is not simply to impart knowledge, but more importantly, to do a good job in educating people. The teaching style can drive the learning style, the change further tests teachers' sense of responsibility towards teaching and classroom, it also highlights the wisdom and emotions of educators, as well as the beliefs and responsibilities of teachers, are important fulcrums for developing ideological and political theories teaching in all courses. The ideological and political theories teaching in all courses in science and engineering courses is an innovation of traditional educational ideas, which is also reflected in the integration of elements of which is also reflected in teaching methods and contents, achieving the effect of educating people.

3. Path Exploration of Developing Ideological and Political Theories Teaching in All Courses in Science and Engineering Courses

The teacher team is used as the main force to improve the training and evaluation system. As the organizer of the classroom, teachers are the first responsible person for developing the ideological and political theories teaching in all courses. Teachers' attitude towards the classroom and teaching can affect students' attitudes towards major learning, and teachers' quality and professional competence also directly affect the development quality and education effect of ideological and political theories teaching in all courses. Colleges and universities and colleges should regard the teacher team of science and engineering as the key medium for developing ideological and political theories teaching in all courses, enhance their sense of responsibility in imparting knowledge and educating people, and further implement the relevant requirements of ideological and political theories teaching in all courses, strengthen the transformation of educational ideas and the development of teaching abilities of science and engineering major teachers in developing ideological and political theories teaching in all courses through various channels such as collective lesson preparation, textbook adaptation, promoting construction with evaluation, replacing practice with competition, and setting models. Moreover, to give full play to the enthusiasm, initiative, and creativity of the teacher team, science and engineering departments do a good job in supervision, evaluation and guarantee work of ideological and political theories teaching in all courses through multiple mechanisms, adjust the evaluation system of "emphasizing scientific research and neglecting teaching", promote the close integration of ideological and political education and major teaching, and improve the education effect.

Teaching methods are used as carriers to build multidimensional education system. According to the learning laws of specialized course of science and engineering students, the development objectives of the course can be basically divided into knowledge learning, ability development,

and spiritual shaping. Science and engineering courses should follow the learning laws of specialized courses, grasp the change laws of students' ideas, use change of teaching methods as an important carrier for developing ideological and political theories teaching in all courses, various teaching methods should be attached equal importance to, explicit education and implicit education should be parallel to achieve three development goals. In knowledge learning, answer students' questions about "why to learn" and "how to learn" through situational teaching, case analysis, and other methods, help students understand the features of industry development, learn about the development process of disciplines, build students' curiosity about their majors, and enhance their interest in major learning and research. In ability development, science and engineering courses lead students to walk out of the classroom and campus, focus on developing students' practical abilities in active learning, cooperative communication, and making study serve the practical purpose through research competitions, practical teaching, and major practice, strengthen industry recognition and articulation with society. At the level of spiritual shaping, develop students' sense of patriotism and responsibility, engineering standards and rigorous attitude, innovative spirit and scientific research awareness, ideal beliefs and dedication spirit through the development and application of this major in national strategies and a pillar of the great power, as well as historical and international comparisons of technological development.

Dominated by educational resources, popularize the material library of ideological and political theories teaching in all courses. Industry state, historical figures, domestic development, international comparison, current events, and cutting-edge prospects, these are education elements of ideological and political theories teaching in all courses that science and engineering teachers can collect in the process of lesson preparation, integrate materials of ideological and political theories teaching in all courses into logical and theoretical specialized courses is beneficial for stimulating students' interest in learning specialized courses, improve theoretical learning efficiency while achieving educational effects. The materials of ideological and political theories teaching in all courses can be used as auxiliary textbooks, combined with existing teaching syllabi, and correspond to the teaching contents. Adequate material preparation can promote the ideological and political theories teaching in all courses to achieve better educational results. Tell others' stories well, and you can also tell your own stories well. Science and engineering teachers can also bring into full play their research features of major, combine their personal research direction, share with students in the classroom how to use basic concepts or analytical methods as foundation to solve academic problems, achieve breakthroughs in scientific research, and as vivid ideological and political textbooks around students.

Changing the way of thinking as the opportunity, developing student-centered ideological and political theories teaching in all courses. Giving full play to students' subjective initiative, guide them to actively engage in learning, thinking, and sharing of ideological and political theories teaching in all courses through the teaching foundation of ideological and political theories teaching in all courses in the early stage and corresponding reference cases. In the past few decades, China has made significant progress in the fields of industry and science and technology, in this process, science and technology based on science and engineering have played an important role in research and application, etc. Students are encouraged to explore inspiring example in relevant majors, conduct international comparisons, understand the development of domestic industries, organize sharing and discussions, guide students to strengthen their understanding of social development, deepen their understanding of the discipline state and the overall industry development, develop a sense of patriotism, enhance cooperation, develop a sense of social responsibility, and improve their ability to apply what they have learned.

4. Conclusion

The teaching reform of ideological and political theories teaching in all courses in science and engineering major is a process of systematic promotion. On the basis of determining the goals of talent development, continuously building high-level teacher teams, planning more efficient teaching methods, providing teaching resources that continuously stimulate students' learning motivation, transforming into student-centered teaching method will be required, and laying a solid foundation for talent development and national strategy.

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