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Practice of Ideological and Political Construction of Robot Control Technology Curriculum

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Abstract: *Focusing on the necessity, difficult problems, construction ideas and integration path of ideological and political construction of robot control technology course, it is emphasized that integrating ideological and political education into robot control technology course is of great importance to cultivate students' social responsibility, innovative spirit and professional ethics. In view of the difficult problems, the paper puts forward the solutions of clarifying the course objectives, optimizing the course content, innovating the teaching methods and perfecting the evaluation system. By exploring ideological and political elements in the curriculum and integrating experimental practice into ideological and political education, the organic integration of robot control technology courses and ideological and political education is realized, so as to contribute to the cultivation of high-quality talents with all-round development.*

Keywords: *Curriculum Thought And Politics, Robot Control Technology, Talent Training Mode*

1. Introduction

With the rapid change of science and technology, robot control technology has become a hot field in today's society, and its application in many fields, such as industry, medical care, and service, is becoming more and more widespread. In this context, the education and teaching of robot control technology courses in colleges and universities are particularly important. However, only relying on the traditional professional courses is not enough to meet the needs of society for cultivating comprehensive talents, and exploring how to combine ideological and political education with robotics control technology courses has become an important research direction in the current reform of higher education. Robot control technology course not only carries the task of teaching professional knowledge, but also should shoulder the mission of cultivating students' sense of social responsibility, innovative spirit and professional ethics. By exploring the necessity, difficult problems, construction ideas and integration paths of Civics construction in Robot Control Technology course, it will provide a method of thinking for the educational reform of colleges and universities, for this purpose, it will deeply excavate the Civics elements in the course, innovate the teaching methods and means, guide the students to correctly understand and apply the robot control technology, cultivate their teamwork, innovation consciousness and social responsibility, and contribute to the development of the country and the society. It will also provide new ideas and directions for cultivating high-quality talents with comprehensive development.

2. Necessity of the construction of the Civics and Politics of the curriculum

As an important force in the contemporary scientific and technological revolution and industrial change, the Civic and political construction of the curriculum of Robot Control Technology aims to guide students to correctly understand and apply the technology, and to recognize the impact of scientific and technological development on social values and ethics and morality. In this process, Civic and political education can help students establish the lofty ideals of serving the country with science and technology, and inspire their enthusiasm and belief in scientific and technological innovation. By tapping into the Civic and political elements in the curriculum, such as technological innovation, teamwork, social responsibility, etc., it can enable students to have a deeper understanding of the impact of the development of robotics technology on various aspects of the society, the economy, and the culture. In addition, the Civic-Political construction of the robot control technology course also helps to cultivate

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students' critical thinking and innovation ability. While mastering professional knowledge, students need to learn to think independently, analyze problems, and maintain a keen insight into the challenges and opportunities in the development of technology[1]. Civic and political construction of the robot control technology course is also an important way to improve students' professionalism, in the learning process, students not only need to master a solid professional foundation, but also need to have a good work ethic, teamwork and communication skills, etc. Through the integration of Civic and Political Education into the classroom, it guides students to establish correct career concepts and clarify the responsibilities and obligations of career development, so as to lay a solid foundation for the future career path. More importantly, it helps to enhance students' national pride and cultural self-confidence. While learning international cutting-edge technology, students can more deeply realize China's development achievements and international status in the field of robotics, which will further stimulate students' patriotic enthusiasm, enhance their national pride and cultural self-confidence, and inspire them to contribute their youthful strength to the country's scientific and technological progress and social development. Robot control technology course ideology construction is of great significance for cultivating high-quality talents with all-round development, and teachers of the course should actively explore and practice the effective ways and methods of course ideology construction, constantly improve the course system and teaching content, and contribute wisdom and strength to cultivate high-quality talents in the new era.

3. Difficulties in Teaching Civics in the Curriculum

The integration of robot control technology course and Civic and Political Education, although theoretically of significant significance and value, is faced with a number of difficult problems in the actual teaching process, which are mainly reflected in the selection and integration of teaching content, the innovation and application of teaching methodology, the transformation of teachers and students' thinking mode, and the establishment of the evaluation system.

First of all, the selection and integration of teaching content is a big challenge, the robot control technology course itself involves a complex knowledge system, how to maintain the integrity of the original knowledge system of the course at the same time, effectively integrating the content of the Civic and Political Education, in order to achieve the purpose of Civic and Political Education. This is a considerable test for teachers. Teachers must invest a lot of time and energy in researching and organizing the course content and finding the entry point for combining with Civic and Political Education, which undoubtedly increases the teaching burden of teachers.

Secondly, the innovation and application of teaching methods is also a difficult point in the teaching of Civic and Political Education. The traditional teaching methods of robot control technology courses are often based on theoretical lectures and experimental operations, which are more effective in imparting professional knowledge, but appear to have few methods in carrying out Civic and Political Education. How to present the content of Civic and Political Education in a vivid and interesting way to stimulate students' interest in learning and desire for exploration is a problem that teachers need to think about and solve[2]. This requires teachers not only to have solid subject knowledge and practical experience, but also to have a certain degree of pedagogy, psychology and other aspects of literacy, and to be able to flexibly utilize a variety of teaching methods and tools.

In addition, the change of teachers' and students' thinking mode is also an important difficulty in the teaching of Civics, for a long time, both teachers and students are used to separating professional knowledge from Civics education, believing that they are two independent fields, and this mode of thinking has hindered the integration of Civics education and professional courses to a certain extent. To break this mode of thinking, it is necessary for both teachers and students to make efforts to re-conceptualize and understand the relationship between Civic and Political Education and professional knowledge, and to establish a comprehensive view of education and learning.

Finally, the establishment and improvement of the evaluation system is also a difficult issue in the teaching of Civic Education, how to evaluate the robot control technology course integrated with Civic Education, and how to assess the students' understanding of professional knowledge and the effectiveness of Civic Education at the same time. This requires the establishment of a set of scientific and reasonable evaluation system[3]. However, the current research and practice in this area is not sufficient, and there is a lack of mature experiences and models for reference.

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4. Thoughts on the Construction of Course Ideology and Politicse

4.1. Course orientation and objectives

The robot control technology course should be clearly positioned to cultivate high-quality talents with the ability of robot system design, development, debugging and application, while focusing on improving the students' civic and political literacy. The course objectives should make it clear that students master the basic principles and methods of robot control, and at the same time have a sense of innovation and practical ability, and at the same time pay attention to the cultivation of students' scientific and technological innovation, professional morality, engineering ethics and national consciousness, so that they can use the knowledge they have learned to serve the society and promote scientific and technological progress[4]. In order to achieve this goal, the teaching content needs to be carefully designed and the teaching methods need to be constantly innovated, while strengthening the construction of the course ideology and politics, combining the teaching of professional knowledge with the guidance of values.

4.2. Teaching content and methods

In terms of teaching content, it should cover the core knowledge of robot kinematics, dynamics, trajectory planning, control strategies, etc., and at the same time, it should explore the elements of science and technology ethics, scientific rigor, innovation and other ideological and political elements in the course. In terms of teaching methods, a variety of teaching methods should be used in combination, such as traditional classroom lectures, multimedia teaching, network teaching, etc., to fully mobilize students' learning enthusiasm and initiative, and at the same time, innovative teaching methods such as case-based teaching and project-driven teaching should be actively introduced to cultivate the students' practical ability and innovative thinking through actual cases and project operations. In addition, the design and implementation of practical teaching should be strengthened, and internship bases or laboratories should be set up in cooperation with enterprises, so as to provide students with real engineering scenarios and project practice, and cultivate students' sense of responsibility and mission.

4.3. Integration of Civic and Political Education

Integrating ideological and political education into the course of robot control technology is the core task of curriculum ideological and political construction. By combining the course content to explain the history of technological development and the spirit of scientists, students are guided to establish correct scientific and technological concepts and innovative consciousness; Emphasize professional ethics requirements such as safety regulations and environmental awareness in experimental practice, and cultivate students' sense of social responsibility and professional ethics; Cultivate students' sense of team honor and cooperation spirit through team collaboration in the project. At the same time, as an important role in the construction of course ideology and politics, teachers also need to continuously improve their political literacy and educational ability, and guide students to form good ideological qualities and behavioral habits through teaching by example and role modeling. Corporate engineers, industry experts and other experts can also be invited into the classroom to share the elements of ideology and politics in engineering practice, so as to enhance the students' sense of identity and access to course ideology and politics.

4.4. Evaluation System and Continuous Improvement

In order to more comprehensively and objectively evaluate the learning effectiveness of students and the teaching effect of Civics in the course, a diversified evaluation system should be constructed. The system should include theoretical exams, practical assessment, regular grades and Civic and Political performance, etc. At the same time, it introduces students' self-assessment, mutual assessment, teachers, enterprises and other evaluation bodies, so as to more comprehensively understand the students' learning and enhancement of Civic and Political literacy. In the process of course construction, a continuous improvement mechanism should be established to regularly update and optimize the teaching content of the course to keep pace with the cutting-edge technology; adjust and improve the teaching methods and means according to the feedback of students' learning in order to improve the quality of teaching; strengthen the cooperation and communication with industrial enterprises in order to obtain more practical resources and project cases to provide strong support for practical teaching; pay attention to the development and dynamics of the similar courses at home and abroad, and learn from and study the

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development of the courses in time. We will pay attention to the development of similar courses at home and abroad and draw on and learn from the advanced experience in time to promote the sustainable development of the program.

5. Paths of integrating Civic-Political thinking in the curriculum

5.1. Integration of Civic Politics in Course Content

The robot control technology course has a wide range of contents, involving mechanical engineering, control engineering, computer science and other subject areas. In the teaching process, teachers can explore the Civic-Political elements in the course content, such as the innovative spirit of scientists, the importance of teamwork, scientific and technological ethics and social responsibility, etc., and naturally incorporate these elements into the course explanation[5]. For example, when introducing the history of robot development, the outstanding contributions made by domestic and foreign scientists to the development of robotics can be told to cultivate students' national pride and innovative spirit. When explaining the application fields of robotics, it can focus on the application of robotics in medical and agricultural fields, emphasize the concept of science and technology to serve the local economy, and cultivate students' sense of social responsibility and sense of mission. At the same time, teachers can also integrate the Civic and Political Education into the course content by means of case analysis, selecting representative and inspiring cases, and guiding students to analyze the Civic and Political elements embedded in the cases, such as the sense of innovation, the spirit of teamwork, and professional ethics. It can not only enhance students' understanding of professional knowledge, but also improve their Civic and political literacy.

5.2. Civic and political penetration of teaching methods

In the robot control technology course, diversified teaching methods, such as group discussion, project-driven, flipped classroom and so on, can be used to provide a rich carrier for Civic and Political education[6]. These methods can arouse students' enthusiasm for learning and increase their participation in the classroom, and at the same time create favorable conditions for the integration of Civic and Political Education. For example, in the group discussion, teachers can set topics related to the content of the course, such as “the relationship between scientific and technological development and ethics and morality”, “the application and challenges of robotics in intelligent agriculture”, etc., and guide students to conduct in-depth thinking and discussion. In the process of discussion, students are guided to establish correct values and concepts of science and technology, and cultivate their critical and dialectical thinking skills. In project-driven teaching, project tasks with practical application value can be designed so that students can experience the challenges and fun of science and technology innovation in the process of project implementation. Through teamwork and communication in the project, students' teamwork spirit and communication skills are enhanced. In the project evaluation, in addition to focusing on the quality of the project results, we should also pay attention to the students' performance and ideological dynamics in the project process, and give timely guidance and assistance.

5.3. Civic and political examination of practical sessions

The practice link is an important part of the robot control technology course, and it is also an important position for the integration of civic education. Through experimental operation, course design, innovation and practice, students can experience the process and fun of scientific and technological innovation, and feel the power of science and technology to change the world. In the practice session, the Civic and Political Practice Tasks are set up in combination with the course content, such as “designing a robot product with social value”, “carrying out popularization activities of robotics”, etc. These tasks can not only consolidate students' professional knowledge, but also enhance their practical ability and sense of innovation. These tasks can not only consolidate students' professional knowledge, but also enhance their practical ability and sense of innovation. Through hands-on experience and realization in practice, students can understand more deeply the connotation and value of the ideological elements such as science and technology ethics and social responsibility.

6. Conclusion

As an important part of the new engineering education, the robot control technology course not only

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carries the mission of imparting professional knowledge, but also needs to be integrated into the Civic and Political education, so as to jointly cultivate excellent applied undergraduate talents with professionalism and good Civic and Political quality. By exploring the elements of ideology and politics in the curriculum, innovating teaching methods and strengthening the ideology and politics in practice, robot control technology and ideology and politics education are closely integrated to realize the double enhancement of knowledge and value. The exploration and practice of this integration path not only effectively improves the comprehensive quality of students, but also lays a solid foundation for the cultivation of both moral and applied talents in the new era.

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