

Research on the Teaching Reform Mode of Ideological and Political in Forest Engineering Robot Technology Course

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Abstract

At present, ideological and political education is a new way and mode to conduct moral education infiltration for college professional course teachers. This paper discusses the necessity of carrying out ideological and political education in forestry robot technology curriculum. At the same time, it analyzes the methods and approaches of develop ideological and political education in the aspects of ideals and beliefs, professional quality, innovation consciousness and ecological civilization consciousness.

Keywords

Ideological and political, Forestry Engineering, Robot.

1. Introduction

The country would be strong when education is prosperous [1]. Economic and social development depends on talents and education [2]. To carry out the concept of ‘comprehensive ideological and political education, three-dimensional ideological and political education, innovative ideological and political education’[3], and promote organic integration among general education course, subject platform course, professional course, open course and ideological education[4], Northeast Forestry University starts the project of ideological and political model course. The course of Forest Engineering Robot is one of the research programs of ideological and political model course. It is worthwhile to do research on how to pursue the combination of knowledge — transference and value guidance, and find the combination mode of professional courses and ideological and political courses. This paper discusses the methods and approaches of carrying out ideological and political education in forest engineering robot technology course.

2. Necessity of Carrying out the Ideological and Political Education in Forest Engineering Robot Course

Forest engineering robot plays an important role in forestry ecology construction, some model robots including tree cone picker robot, lawn laying robot and stump cutter robot are applied in forestry [5-7]. Forest engineering robot technology course is a core course of students in Forest Engineering major, College of Engineering and Technology, Northeast Forestry University. And it is the organic integration of machinery, electronics, control, detection, communication and computer.

The students of Forest Engineering major have solid basic knowledge of mathematics and physics, and strong cognitive and practical ability, while they have few courses of society and humane, therefore, it is necessary to carry out exploration and practice in the course of teaching forest engineering robot technology.

3. Exploration and practice of Ideological and political in forest engineering robot course

According to the teaching objectives, the knowledge points of course are reconstructed, and the situation were created. Teachers try to guide students to study, for example, establish study activity and asking questions → inspiration guidance → inspire the interest → joining in discussions → encouraging and evaluating. The course design is as shown in table 1.

Table 1. The course design in forest engineering robot technology course

Teaching aims	Design of teaching activities	Teaching subject
Master the course learning methods; Establish the concept of life-learning, cultivate the habits and abilities of stu dents' self-study and good self- management ability	Students can learn some contents of course online	Teacher
Master the basic theory and design method of robot	Learning by class and online	Participation of teacher and students
Cultivate the ability of group cooperation	Group discussion; Group reporter	Interaction between teachers and students
Training of critical thinking	Flipped classroom; group discussion; Question and answer	Interaction between teachers and students
Combined training; Teaching on innov ation ability	Comprehensive experiment ; Course design; Work show	Students
Student's sustainable development; Im provement of comprehensive capacity	Apply for innovative experiment pro jects; Apply for patent; Publish academic papers; Take part in Robot Contest	Students

3.1. Set up ideals and beliefs

At the beginning of the course, development and future trend of robot come into class from the point of robot contracture and function, lead the students to understand the world situation and Chinese robot, and help students form the sense of national identity and ideal personality. When discussing the new drive mode, the combination of new drive mode and Chinese newest development is introduced in the class, such as "two bombs, one satellite", manned spaceship and moon detection vehicle, the final purpose is enhance their proud in our country and culture their patriotism.

3.2. Train occupational ability

During teaching kinematics, statics and kinetics of robot, Jacobi (German mathematician) and Lagrange (French mathematician and dynamists) are introduced, which help students cultivate the students' firm ideal, encourage them to study hard and forge the students' fine characters. Students could understand, master and put to use the knowledge, the propose is cultivating the students' the spirits of craftsman and scientific spirit.

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3.4. Cultivate ideas on promoting ecological progress

The realization of forestry modernization is connected with the technical support of informatization and the application of advanced forest machinery equipment. In the forest robot application status and development field, the ideas of ecological civilization and a harmonious development between human beings and nature should be emphasized. In the energy and drives of robot field, new energy resources and new drive technology should be introduced to the students, including energy conservatio, environmental protection new materials and artificial intelligence technology. The design idea of robot should be organic combination though the development concept 'Clear waters and green mountains are as good as mountains of gold and silver' with modern scientific and technological development.

4. Conclusions

Forest engineering robot technology course is a core of Forest Engineering major, and it is important to carry out ideological and political education. By introducing the design and development of robot, which inspires students to set up lofty ideals and firm beliefs, which are the spiritual drive of their creativity. By the scientists who never are afraid of difficulties, and always be brave to explore and innovate science, the students should be cultivated their professional spirit. By showing the good examples of ancient China and expanding Chinese traditional culture, train students minds for making innovations and enhancing their practical skills. By teaching new drive mode and artificial intelligence technology, ideas on promoting ecological progress should be emphasized. Therefore, the teachers should explore and practice the way of ideological and political education in forest engineering robot technology course, and find out the ideological and political education resources, which offer theoretical instruction and value standard for ideal and belief education. Ideological and political education is beneficial to the improvement of thinking and fostering of new talents, and it is vital for improving the quality of talents training to establish better morale in a university.

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