

Research on the Professional Reform of Electrical Engineering and Automation Based on Practical Teaching

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Abstract: In recent years, with the continuous deepening of the research on vocational education, the vocational education mode has appeared obvious reform and development. At the same time, a large number of new teaching measures have been put forward, among which practical teaching is the most typical one. In this regard, in order to further improve the comprehensive level of professional education, this paper briefly analyzes the reform of electrical engineering and automation based on practical teaching, hoping to provide help for other educators.

Keywords: Electrical engineering and its automation; Practical teaching; Professional reform

Introduction

For electrical engineering and its automation teaching professional, the introduction of practical teaching has more advantages, such as can help students build independent learning responsibility, prompting students can combine practical operation to develop professional learning ability, at the same time can be relatively complex learning activities into more specific and intuitive problems, so as to achieve the problem of simplified and group cooperation to solve practical goals, promote the complement between the group. On the whole, the practical teaching has a high application value in the professional electronic automation teaching, which is conducive to the cultivation of students' practical ability. In this regard, it is of great practical value to discuss the reform of electrical engineering and automation major based on practical teaching.

1. Industry status of electrical engineering and its automation

For electrical engineering and automation industry status, for the professional students after graduation employment direction quite a lot, because of electrical engineering and automation technology in railway engineering, optical fiber communication, intelligent building their smart grid, and other fields have application, so for students can also for employment in this industry^[1]. On the basis of a bright market prospect, the teaching consciousness of actual combat should be improved during the teaching period, and the improvement of teaching content and methods should lay a foundation for the cultivation of students' future post working ability.

2. Reform of electrical engineering and automation major based on practical teaching

2.1 Clarify students' learning needs

Practical teaching under the guidance of professional education itself should have common, mutual integration and mutual penetration characteristics, in professional colleges during teaching should pay attention to curriculum reform, at the same time need the basis of practical characteristics in them, so as to build a combination of education system, to cultivate students' comprehensive quality and professional skills, guide students to learn relevant knowledge and skills in the classroom to cultivate their own job ability^[2]. It is necessary to meet the learning requirements of students, focus on the teaching of theoretical knowledge, and properly permeate the professional practice content during the teaching period, so as to lay a foundation for the follow-up theory and practice combined with teaching, promote students to continuously accumulate professional experience in the learning process, and finally realize the educational goal of integrating theory and practice teaching. Secondly, it is necessary to combine the practice in the course with the virtual content in the school. Teachers should pay attention to the

cultivation of students' working attitude and standardized operation skills during the teaching period, so as to promote students to master the basic skills.

2.2 Optimize the course teaching content

In the aspect of electrical engineering teaching, the knowledge content and the theoretical content are relatively abstract, and the students are also highly difficult in understanding the learning process during the professional education period. To this, during the practical mode design, teachers should make comprehensive analysis of the teaching content, from the perspective of curriculum content adjustment, so that the content and practical target can keep coordinated with each other, prompting students from the practical target and training process to master more knowledge and skills. In previous teaching experience, the actual combat target and teaching knowledge of teaching methods often need based on the teaching effect, students 'experience as a guide, and transform the traditional teaching mode, during the teaching by the teachers board play the role, help students to complete the actual combat target setting, encourage students' skills to develop. In terms of content analysis, teachers can analyze the practical content of theoretical knowledge, such as the starting point of teaching and training, and actively guide students to successfully complete the corresponding practical learning objectives. In industrial production, the application of single controller is more common, for the content of the teaching can let students personally operation on the basis, for the design of the single controller and installation, interface debugging as teaching, lesson rong during design can also use actual combat target setting, the theory and knowledge characteristics of single controller design into training projects, students can be based on the actual operation of single controller single basic principle, and gradually form the single controller operation ability.

2.3 Teaching practical goal setting

During the teaching period, teachers need to combine the specific teaching content and teaching practice to do a good job of designing the teaching practical goals, so as to guide students to actively complete the corresponding practical goals, so as to achieve the purpose of self-ability improvement^[3]. Taking the practical goal of PLC design teaching as an example, in the practical teaching, the understanding and practical operation of PLC control system can be taken as the main practical target mode, and students can be organized to observe the operation of the system, so as to improve students' application ability of PLC control system. The actual combat target setting lasts for a week, which mainly involves the activity form setting, activity organization, activity development and other steps. Activity form is mainly combined with previous teaching experience will divide students into multiple groups, and let the students perform actual combat goals, group can combine their own interest and ability for project division of labor, and adopt the corresponding PLC control program practice as a guide, encourage students can based on their own interests and expertise to better complete the practical goal. During the preparation period of the activity, the teacher can elect the group leader for the group within the group. The group leader can select specific directions and industry materials under the guidance of the teacher, and complete the selection and design of the PLC control system under the real application environment. For qualified teachers, they can apply for communication with the school, so as to encourage students to truly participate in the control activities of the PLC system. During the whole activity, different groups can watch and try to control and operate the PLC system with the help of personally participating in the demonstration enterprises, so as to master the basic characteristics and operation rules of the PLC system, so as to improve their theoretical and practical ability, and help students to complete the transformation from theoretical knowledge to practical skills. The group of students will participate in the practical operation of food processing enterprises. During the operation, students can complete the control of the whole process of food processing with the help of understanding the PLC control system, contact interaction equipment, programmable control equipment and the use of inverters, so as to achieve the corresponding actual teaching objectives.

2.4 Improve the course teaching evaluation method

In order to better guarantee the rationality of evaluation content and methods, it is necessary to adhere to three different evaluation methods of self-evaluation, group evaluation and teacher evaluation. The comprehensive evaluation methods based on three different levels can show students' learning results more objectively. Self-evaluation is mainly based on the evaluation of students' performance during the completion of the actual combat goals after the completion of the actual combat goals. The evaluation content is mainly based on the harvest in the activity and the completion of the actual combat goals in the activity. The self-evaluation itself has a certain subjectivity, and the reference value is mainly used in the sum of evaluation. Group evaluation involves two aspects of mutual evaluation between the group and other groups. The in-group evaluation is mainly based on the completion of the group leader. The evaluation content mainly focuses on the cooperation quality of the students in the group and the degree of tacit understanding in the group, and evaluates the completion of the actual combat objectives and ability in the group for various aspects. The mutual evaluation

of other groups is mainly based on the delegation of speakers, and the completion of the practical goals of other groups based on an objective perspective. This evaluation method can effectively strengthen students' collective sense of honor. Teacher evaluation is given priority to with teachers, teachers can combine the performance of students in the actual combat target, knowledge application and unexpected processing ability of comprehensive evaluation, based on students 'mentality, independent inquiry and hands-on ability, to the students' learning style and practical goal of the experience. The evaluation of these three evaluation methods is the most objective and systematic, and the content of the evaluation should be used as an important reference to help students find problems and actively correct them.

2.5 Build a double-qualified education team

During the teaching period, it is necessary to let teachers of relevant majors in the school participate in the qualification examination and specific industry-related examinations, so that students can fully understand the requirements of professional examinations, form a familiar grasp of the specific examination requirements, and further change their teaching structure so as to improve their theoretical knowledge level. At the same time, the school can invite outstanding practitioners from outside the school to participate in the classroom learning, and invite them in while formulating professional talent training programs, so as to listen to the corresponding teaching suggestions.

3. Summary

In summary, Based on the educational direction of "focusing on actual combat and getting closer to the army", To enrich teaching resources and training environment for electrical engineering and automation professional education, Combined with the improvement of professional education quality, the improvement of students' knowledge quality, the cognitive ability of positions, innovative talent training and other aspects, In the teaching content, teaching methods and teaching evaluation and other aspects of the teaching mode reform and innovation, Combined with the overall education level of the major to ensure the teaching quality of the course, To promote the effective combination of students' theoretical learning and practical operational skills, Thus providing students with more active and rich learning scenarios and learning environment, Lay the foundation for students' future ability development.

References:

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