

Exploring the Innovative Reform of Modular Teaching in Electrical Automation Technology Major in Higher Vocational Education under the Background of Intelligent Manufacturing

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Abstract: Electrical automation has always been a crucial major in Chinese vocational schools, but more importantly, its teaching has gradually matured in recent years. Today, with the continuous progress of teaching reform and development in Chinese universities, the Electrical Automation Technology major needs to completely abandon the traditional teaching methods in order to quickly keep up with the development trend of higher education reform in China and strive to cultivate a new type of high-level technical talents that are more in line with the needs of social development and the actual development requirements of enterprises. Based on the current teaching reform situation of the electrical automation major, this article discussed the changes and innovative methods of practical education in the electrical automation major of vocational schools in China. The aim was to propose some exploratory new ideas for the reform and innovation of teaching methods for teachers in the same profession.

Keywords: Intelligent Manufacturing; Vocational School; Electrical Automation Major; Teaching Innovation

The Electrical Automation Technology major in vocational colleges is undoubtedly an emerging major that continues to transform in the context of the times and needs to develop and grow with innovative thinking. Especially in the current significant historical context of intelligent vehicle manufacturing, further exploration and innovation are needed to explore more professional and practical teaching resources and approaches through research, in order to achieve a more comprehensive three-dimensional teaching reform. Only in this way can we further study new teaching methods suitable for the development of modern vocational colleges in China, and cultivate more professional and applied skilled talents that meet the needs of economic and social development^[1].

1. Current Situation of Electrical Automation Majors in Vocational Colleges

In practical production practice, the electrical automation major has always had great application prospects. However, with the gradual improvement of the modern industrial society and the gradual reduction of skilled knowledge workers, today, Chinese society has an urgent need for a large number of middle and high-level skilled operators who are proficient in the application of electrical automation knowledge. Against the backdrop of the ongoing global economic development and the huge demand for intelligent quantum machine instrument equipment manufacturing, the enrollment of intelligent motor engineering and automation majors in higher vocational colleges in China must also strive to achieve and keep up with the times. At present, China's vocational and technical colleges need to further cultivate the theoretical and practical skills of graduates from technical colleges, and cultivate more creative specialized technology and electrical intelligence talents for social companies, enterprises, and other units, in order to effectively enhance the theoretical and practical skills of undergraduate students majoring in electrical automation in China's vocational colleges. The mechanism of the power automation course system has continued to be constructed and improved, and the reform and development efforts for the electrical automation major have continued to increase. Based on the actual characteristics of the electrical automation major in vocational colleges, the main direction is to cultivate innovative talents. From various aspects such as teacher team construction, teaching ideology innovation, teaching mode innovation, teaching method reform, and project practice promotion, an innovative curriculum system suitable for the cultivation of educational talents in vocational colleges has been

gradually formed,making it more reasonable to adapt to the teaching conditions and requirements for the cultivation of innovative and entrepreneurial talents^[2].At present,there is an urgent need to improve the electrical intelligence technology standards in vocational schools and seek local advantages.

2. Significance of Innovative Teaching Reform in Electrical Automation Majors in Vocational Colleges

Against the backdrop of the national development of intelligent industry,it is necessary to adhere to an innovative practical training model for students majoring in electrical automation in vocational colleges.To successfully solve the employment problem for students majoring in automation in vocational colleges,it is necessary to recognize an effective way to closely integrate enterprise development with social reality needs.Vocational electrical automation majors do not face difficulties due to the development of intelligent production technology,but rather have certain employment advantages.Therefore,we need to actively research and establish and develop a new teaching mode for the electrical automation major in traditional vocational colleges,that is,by comprehensively breaking through the boundary between traditional education theory and practice,gradually changing traditional education concepts,and gradually breaking through the traditional education system and professional teaching mode that have remained unchanged for a long time in traditional vocational colleges.At the same time,by guiding learners to gradually master key skill knowledge and apply it to practical operations,they gradually improve their professional technical literacy and application ability.

3. Innovative Reform Ideas for Modular Teaching of Electrical Automation Technology in Vocational Colleges under the Background of Intelligent Manufacturing

In order to further improve the teaching quality of the electrical automation major in Chinese vocational colleges,further improve educational concepts,adapt to the current development environment of intelligent mechanical manufacturing,and accelerate the development of the electrical automation technology major in current Chinese vocational colleges,the author believes that it is necessary to focus on breaking through the fixed and target oriented rigid educational concepts of the electrical automation technology major in current Chinese vocational colleges,and closely combine with international practice to form the new characteristics of the current teaching reform of electrical automation technology in vocational colleges in China.Practical teaching courses are the fundamental guarantee for cultivating students'abilities.Only through practical training courses at various stages can we effectively improve the educational level of electrical automation majors in Chinese vocational colleges,and achieve a combination of theory and practice.In the significant context of mechanical manufacturing,the focus of the new curriculum of Electrical and Automatic Skills in ordinary vocational schools is on cultivating practical skilled talents^[2].

3.1 Basic innovation training

Through the“Basic Innovation Training”,children have developed a perceptual understanding of basic learning content,and simple practical exercises have been conducted to increase their sense of achievement,thereby enhancing their learning enthusiasm.The most basic practical training course activities that learners can independently complete after understanding preparation and setting goals.The content of the practical training course aims to achieve the goal of improving learning efficiency and subject ability while achieving goals by setting brief and clear goals.

3.2 Ability innovation training

Through the“Ability Innovation Practical Training”,the difficulty of“improving students'analytical ability”can be solved step by step from easy to difficult.The ultimate goal of applying the intuitive laws,knowledge,and technical theories that students master in school is to apply them to production practice.Through students'proficient abilities,they are good at discovering,analyzing,and solving problems,which is truly a comprehensive ability that meets the needs of society and human development.

3.3 Improving innovation training

By gradually advancing through“improving innovation training”,the fundamental problem of“improving students'teamwork ability”is solved.Cohesion and the spirit of friendship and cooperation are the key foundations for a person to do a good job.Therefore,we urgently need to master a method of relying on cooperation in every task that we must complete within the current time frame.In society,it is very necessary to link the common aspirations of everyone with the common goals of our team,thus breaking the limitations of individual understanding and achieving a team collaboration ability for the whole society^[3].A college student who completely lacks this collaborative and win-win talent will not only be unable to achieve significant results in real work,but will no longer be able to meet the economic development needs of today's era,and it will be even more difficult to stand out from the fierce social market competition.The more people enter modern Chinese society,the more they need to strengthen unity and cooperation,and

the more they need to have strong cohesion. Only by working alone and fighting alone can we achieve the greatest success.

4. Reflection on Practical Teaching of Electrical Automation Technology in Vocational Colleges

In the teaching of factory practice courses in the field of electrical engineering automation, there are still some erroneous practices that focus on theoretical foundation technology courses and neglect factory practice process management technology courses. At the same time, the quality standards for factory management performance assessment in practical teaching still need to be continuously improved. However, in order to further build the factory electrical automation major in vocational colleges in the context of the development of modern intelligent industry, it is necessary to further change the traditional teaching mode of factory based on theoretical courses, and place factory experimental teaching and theoretical courses at the same level. That is to say, the practical teaching of theoretical knowledge must be carried out simultaneously with the integration, exchange, deep penetration, and connection with the comprehensive practical experimental teaching in class.

5. Conclusions

In summary, in the context of an intelligent society, with the rapid development of China's market economy, the country, society, and enterprises all need a large number of technical talents in the field of electrical automation. Therefore, if the electrical automation major in vocational colleges wants to integrate with modern society, it must be continuously reformed in various aspects and innovative solutions must be proposed from various fields such as theory, practice, and technology to cultivate new talents that are in line with modern professional development.

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