

# *Analysis of Teaching Strategies Based on Electrical Automation Skills Competition in Higher Vocational Colleges*

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**Abstract:** At present, most vocational colleges have actively introduced the teaching mode of promoting competition by promoting the comprehensive ability of students. On this basis, the reform of professional teaching innovation has been carried out. Therefore, in higher vocational colleges, it is very necessary to strengthen the cultivation of students' practical ability. However, those higher vocational colleges are affected by external factors in implementing this teaching model, which makes it difficult to effectively complete professional teaching reform. Therefore, in electrical automation, it is imperative to carry out innovative innovations in teaching strategies based on skill competitions.

## **1. The practical significance of electrical automation teaching based on skill competition in higher vocational colleges**

With the gradual expansion of the vocational colleges, there are still many shortcomings in the teaching practice of higher vocational colleges. Moreover, higher vocational colleges have always followed the principle that theory is sufficient, which makes the teaching work hindered since the scale is not clear, the cognitive ability of teachers is uneven, and other related factors. Therefore, it is very important for the sustainable long-term development of higher vocational colleges to effectively solve these problems and cultivate more excellent comprehensive application talents that are qualified with the development requirements of the social market. In order to break through the predicament of higher vocational education, and to train skilled talents that can highlight the characteristics of higher vocational colleges, those higher vocational colleges have appropriately introduced the 2+1 school-enterprise cooperative training mode and the order-based training mode according to their own situations. However, not all majors are suitable for the 2+1 school-enterprise cooperation talent training model since the limitations of different professional characteristics, the size of the company, the internship positions, and the technical ability of the school-enterprise cooperation. The order-based training model is a win-win choice for students' employment and business needs. However, this kind of too-oriented training mode will result in the fact that the students' knowledge is too narrow, the ability to respond is poor, and the development potential is insufficient, so that they can only adapt to a single professional position. However, the skill-based model can achieve a comprehensive training of students' practical skills and expansion skills. In

addition, the skill competition is the guide for the teaching reform of higher vocational colleges, which can guide the participants of the skill competition towards the goal. At the same time, this skill competition based on the post group can guide the contest participants to transform the core skills into the teaching core, and regard the competition defect as an important basis for teaching reform, and can fully play the guiding role of the skill competition.

## **2. The teaching strategy of electrical automation based on skill competition in higher vocational colleges**

### **2.1. Setting up the curriculum system scientifically**

Higher vocational colleges should set up a professional curriculum system scientifically and reasonably, so that the electrical automation major of higher vocational colleges meets the requirements of social talent training, so as to cultivate students' good vocational skills. First of all, higher vocational colleges should make appropriate adjustments to the curriculum system for the needs of corporate positions. According to the survey data, the positions related to the electrical automation profession mainly include installation and commissioning, equipment troubleshooting, electronic automation system design and so on. Therefore, colleges should clearly and carefully analyze the job requirements, effectively understand the specific tasks of the position, and the necessary knowledge and skills of the employees, and then fully integrate the results of the analysis into the curriculum system to ensure the close contact between professional curriculum system and business position needs. Secondly, the content of the course should be adjusted according to the specific content and technology assessed in the vocational skill competition. In the practical process, higher vocational colleges can also construct professional competition research institutions, fully understand the specific skill requirements of the professional skills competition for the participants, and incorporate them into the teaching plan to realize the all-round integration of the theory and practice of the curriculum.

### **2.2. Conducting diversified teaching methods**

The skill competition project should focus on the needs of social talents, promote the seamless connection between talent cultivation and enterprise needs, and adhere to the organic integration of teaching innovation reform, so as to guide the development trend of electrical automation professional teaching in higher vocational colleges, skill competition integration between theory and practice. It is not only the integration of theoretical and practical teaching content, but also the method of guiding, promoting and optimizing teaching methods based on skill competition, and effectively reflecting the relevant content of skill competition in teaching methods. On the basis of learning relevant theoretical knowledge, the professional teaching team of electrical automation should be inspired by the skill competition. When developing professional courses, based on the real production tasks of the enterprise, it integrates task-driven, project-oriented, theory and practice teaching and other teaching characteristics to mobilize students' interest and initiative in learning. The process of electrical automation professional teaching should carry out comprehensively, focusing on practical work projects and multi-level practical training, supplementing by professional skills and professional ethics. At the same time, in order to ensure that students are proficient in professional knowledge and high electrical automation expertise, using the project teaching method, task-driven method, practical teaching method, competition simulation method, etc. in the course teaching, based on the action-oriented diversified teaching method, focus on cultivating students' good awareness and skills in applying professional knowledge to practice.

### **2.3. Optimizing the teaching assessment methods**

In order to ensure students' learning and practical effects, and guide students to focus on skills learning and training, comprehensive assessment of students' learning tasks will be carried out by the mode that competition promotes teaching reform, and based on skill competition scoring standards. The content of the training assessment mainly includes three parts: task assessment, teacher evaluation and student evaluation. Task assessment is to evaluate the efficiency and quality of task completion, which is mainly implemented according to the skill competition scoring standard. It includes four aspects, namely, electrical control circuit design, circuit connection and process, operation effect, professional quality. The teacher's evaluation is that the teacher randomly conducts random check on the students according to some questions, clearly answers the students' questions and gives the corresponding scores according to the students' knowledge mastery. In order to improve the efficiency of training, this form of assessment also needs to urge students to take a positive attitude to the training. The student evaluation is that during the training, the students in the group will score each other's self-performance, which can significantly strengthen the team's cooperative spirit and centripetal force. After completing the learning tasks, teachers and students can discuss and analyze the problems encountered in the task realization process and propose better solutions to solve problems more scientifically and effectively, which can cultivate students' ability of thinking independence and interaction, mobilize students' learning consciousness and creativity.

### **2.4. Building a sound training base**

The skill competition is not only a competition between the instructor and the participating students, but also a competition between different higher vocational departments. In order to further improve students' comprehensive quality and ability, higher vocational colleges must actively build school-enterprise cooperation and school practice training bases, to lay a solid foundation for cultivating students' good practical ability and innovative creativity.

### **2.5. Building a double-qualified teaching team**

In the skill competition in the proposition basis, it directly determines the requirements of the teacher, that is, understand the scene and technology, fully grasp the latest electrical technology and equipment, and be familiar with the dynamic changes of the industry and job requirements. Under the rapid development of electronic technology, new technologies and processes such as PLC, inverter and touch screen have been widely used in enterprises, which have increased the requirements for teachers' knowledge ability. Take competition project of the PLC and inverter control technology skills application and the electronic circuit installation and debugging of sensing detection for example, both of them not only demonstrate the practical application of new technologies, but also reflect the demand for skilled talents in the adjustment of industrial structure and technology upgrades.

The primary requirement for the construction of double-skilled teaching teams in higher vocational colleges is to improve the professional level of teachers based on skills, and to promote the construction of practical training teaching teams through competition mechanisms. The construction of the electrical automation professional curriculum system in higher vocational colleges is based on professional positions, which promotes the close correlation between the existing independent training modules and the subjects. This requires the new teaching team members to have basic theoretical knowledge and strong practical operation ability. Therefore, the construction of the double-qualified teaching team should be based on the curriculum system and competition standards, and a colleges teaching team should be constructed based on the professional

orientation, academic title, and age to improve teaching efficiency and quality. At the same time, use the skill competition as a platform to deepen the cooperation between schools and enterprises and improve the professional quality of the double-qualified teachers teaching team. Skill competitions require participants not only to have book knowledge, but also to participate in actual research and practical learning. By entering the enterprise, the teachers play the role of the school serving the enterprise, accept the latest concepts and the dynamic information of the industry and update their own knowledge system and capability structure to adapt to the continuous evolution of the post environment and enrich the content and methods of professional knowledge teaching. In addition, the high-quality, high-skilled double-teacher team should accurately master the position construction and professional teaching direction, and formulate scientific and effective team building and career planning to promote the long-term development of the teaching team.

## 2.6. Innovating and reforming graduation designs

In the teaching of electrical automation in higher vocational colleges, graduation design is a comprehensive link in practical teaching. It is the main embodiment of students' rational application of professional knowledge and skills, and plays a positive role in improving their comprehensive quality and employment competitiveness. Therefore, in the professional teaching process, the innovation of the graduation design especially the topic selection and the form of results must be paid attention to. Teachers should be based on the students' interests and employment directions, guided by the principle of skill competitions, scientifically chose topics, and apply automation professional practice training base facilities to provide assistance for students' graduation designs. The results of the thesis are mainly to design physical products such as works and devices, which can be electronic product design types, electrical engineering design types, automated production line design, etc., so as to break through the traditional graduation design requirements that focus on theory and neglect practice, thus promoting students' practical ability and effective improvement of comprehensive quality.

## 3. Conclusion

In conclusion, the skill competition plays an important role in the teaching of higher vocational automation, which can significantly enhance the degree of organic connection between electrical automation and social practice, thus achieving the goal of talent training. This requires higher vocational colleges to appropriately adjust the curriculum system according to the requirements of corporate positions, construct a scientific and rational curriculum system, diversify teaching methods, optimize teaching assessment methods, build a sound training base, further build a double-qualified teaching team, innovate and reform graduation design to promote the effective improvement of the efficiency and quality of the electrical automation teaching in higher vocational colleges.

## References

- [1] Li Zhi, Zhang Yajie, Yang Jie. *The Effect on the Practice Training Teaching of Electrical Automation Specialty in Higher Vocational Education with Skills Competition Based on the Post Group* [J]. *Journal of Zhejiang Vocational College of Communications*, 2015(2):65-69.
- [2] Lei Shengyong. *Research on the practice teaching of electric vocational automation technology oriented to skill competition*[J]. *Guangxi Education*, 2013(3): 27-28.
- [3] Wang Yansheng, Jiang Ying, He Linfeng, et al. *Make Innovation on Unique Teaching Method of "Integration of Competition & Practices" in Combination of Skill Competition-take electric automation technology specialty as an example*[J]. *Journal of Tianjin Vocational Institutes*, 2016,18(1) : 22-26.

- [4] Liu Luping. *Reconstruction of the Curriculum System of Higher Vocational Electrical Automation Based on Vocational Skills Competition*[J]. *Internal Combustion Engines and Parts*, 2017(4).
- [5] He Guorong. *Practical Teaching Reform of Electrical Automation Technology Based on Vocational Skills Contest* [J].*Journal of Yangling Vocational & Technical College*,2015(2): 56-58.