

# Research on teaching reform of electrical majors in colleges and universities from the perspective of integration of production and education

*Xinda Li, Huida Duan, Nuoya Qu, Wanglai Liu*  
(Changchun Institute of Technology, Changchun 130000, China)

**Abstract:** Based on the vision of quality-oriented education reform, in order to meet the needs of the development of education and teaching at the present stage, university leaders and teachers should carry out teaching reform under the guidance of advanced ideas, in order to provide students with high-quality teaching services. As an electrical professional teacher, can be based on the integration of production and education under the background of the implementation of talent through training, that is, can teach students basic knowledge at the same time, guide them to master practical skills in practical training, rich practical experience, for their follow-up to adapt to social life and docking post work laid a solid foundation. In order to give full play to the application value of the integration model of production and education, electrical teachers need to explore the appropriate opportunity and path to build this advanced model in combination with automobile production demand, industry development trend, college education strategy and students' actual learning situation, and then give play to the dominant position of schools, enterprises, governments and other institutions to provide students with quality training services. In the end, they can become the talents needed for social development and national construction. At the same time, they can improve the economic benefits of enterprises, promote the reform process of colleges and universities, and achieve win-win cooperation between schools and enterprises.

**Key words:** integration of industry and education; Colleges and universities; Electrical major; Teaching reform

## Introduction

At present, China's economic development is at a critical stage of upgrading and transformation, and the key to improving total factor productivity is innovation and talent. Based on this background, colleges and universities need to undertake the teaching responsibility of providing innovative and skilled talents for social development and national construction. In order to achieve this teaching goal, electrical teachers in colleges and universities can actively establish cooperative relations with enterprises, build a collaborative education model, and present a win-win situation through the integration of production and education. Specifically speaking, colleges and universities need to further expand the scope of integration of production and education and deepen the depth of cooperation between schools and enterprises under the guidance of relevant policy documents issued by the state and the government. At the same time, they should optimize the top-level design and build efficient classrooms on the basis of integrating teaching resources inside and outside the school, so as to provide students with high-quality teaching services, which can improve the quality of talent training. Promote the reform process of colleges and universities. In view of this, this paper takes the author's teaching experience as the entry point, analyzes the practical significance of the teaching reform of electrical majors from the perspective of the integration of production and education, and puts forward specific reform paths on this basis, hoping to be beneficial to the development of universities and enterprises, and finally successfully build a teaching mode in which schools and enterprises participate together.

## 1. The practical significance of the teaching reform of electrical majors in colleges and universities from the perspective of the integration of industry and education

### 1. Improving the quality of talent cultivation

With the further development of the national economy, the Internet era has ushered in, which makes the communication between different countries and regions more convenient. In the process of social and economic development, we should deal with the challenge of homogeneity, and we need to introduce advanced technologies and concepts to promote industrial upgrading and economic development. At the same time, new requirements are also put forward for colleges and universities to cultivate talents. Therefore, colleges and universities should encourage enterprises to actively participate in education and teaching, so that people can provide new ideas for the restructuring of curriculum system, the formulation of talent plans and the creation of teaching models, and finally realize the continuous cultivation of talents in colleges and universities in the integration of production and education teaching, and provide talents support for social development and national construction. In the implementation of school-enterprise cooperation projects, colleges and universities need the active cooperation of enterprises, and carry out the "student-oriented" education concept in the course teaching and practical training, which can effectively improve the effectiveness and pertinency of college talent training. In general, the joint teaching between colleges and enterprises to build a model of integration of production and education can effectively assist schools to complete the established teaching tasks and improve the quality of talent cultivation.

### 2. Realize multi-resource integration

In order to achieve good educational results, colleges and universities can take novel and effective measures to attract the help and

support of various institutions and enterprises, so as to sign cooperation agreements and reach cooperation consensus. On this basis, colleges and universities need to integrate teaching resources and optimize training programs in combination with regional economic and social development needs, and finally give full play to the important position of schools, enterprises and the government in collaborative education. Therefore, in the actual teaching, teachers can start from the integration of production and education, which can improve the systematic and integral of the entire education system through multi-angle and all-round resource integration. Among them, teachers need to decisively abandon traditional concepts, actively innovate and optimize new teaching methods, and finally assist teachers to successfully complete teaching work, and also meet the needs of stage economic development and social operation to the greatest extent.

## **2. The teaching reform path of electrical majors in colleges and universities from the perspective of integration of production and education**

### **1. Recognize the concept of integration of production and education**

The effectiveness of college education and teaching is closely related to the construction and development of the entire education system. In order to further improve the quality of college education and teaching, leaders and professional teachers need to timely update the teaching concept and build a new model, so as to fully mobilize the subjective initiative of students and enable them to actively participate in it, and finally achieve the expected educational results. Electrical teachers can promote education reform and development by building the integration model of production and education. In the process of implementing the teaching plan, they should not only look at the land from the perspective of human resources reserve, but also examine the integration of production and education from the perspective of education development, so as to carry out teaching activities on the basis of fully recognizing the application value of this teaching model. In view of this, electrical teachers should combine the law of education development to build an integrated teaching mode of production and education, that is, employment-oriented to break through restrictions and constraints, with the help of the integrated mode of production and education to focus on training students' practical skills, so that their professional quality can be effectively improved and cultivated, and lay a solid foundation for their subsequent career selection and further study. Cultivate them as talents needed for social development. In addition, the integration of industry and education in colleges and universities is closely related to the development of social economy and the upgrading of industrial structure, which requires the support and cooperation of all sectors of society. To this end, it is necessary to give full play to the dominant positions of both schools and enterprises, and carry out cooperation and exchanges with enterprises in accordance with the concept of serving the society and the future, so as to attract enterprises to actively participate in the integration of industry and education in teaching projects. Finally, the future basis of talent cultivation can be organically integrated with the demand for talents in the market, and the value of the integration of production and education can be fully utilized.

### **2. Improving the practical curriculum system**

Electrical teachers should fully realize that the construction of curriculum system is the key link of professional construction, which is closely related to the result of the integration of production and education and the effect of curriculum reform. In order to make the talent training of colleges and universities highly fit with the development of industrial technology, electrical teachers need to closely combine the curriculum and job requirements, so that they can constantly adjust and improve the curriculum system according to the actual needs. Courses for electrical majors include general courses, theoretical courses and practical courses, among which practical teaching courses play an important role based on the practical and applied characteristics of the major. Therefore, teachers need to run practical teaching through the whole teaching process, formulate different stages of practical teaching prevention step by step and level, and practice curriculum atmosphere curriculum practice and concentrated practice two parts, so as to focus on mobilizing practical teaching. Specifically speaking, teachers need to enhance the education and training of engineering professional certification, set up two modules of power system and its automation and industrial automation, and focus on cultivating students' engineering consciousness. In addition, teachers should also increase the proportion of students' engineering practice training, so as to continuously improve students' practical application ability. The course practice should include experiment, practical training, course design, experimental practice and other content, while the concentrated practice includes military training, professional skills training, professional practice, graduation design, innovation and entrepreneurship practice and other highly comprehensive practical activities. Practical teaching is an important way to implement the program of integrating production and education. Therefore, it is necessary to improve the training system of applied talents by closely focusing on the needs of the industry, so as to transport compound talents for social development and industry innovation.

### **3. Strengthen the construction of teaching staff**

Teachers should also be aware that the smooth implementation of the integration mode of production and education needs to rely on the support of strong teachers, and electrical majors put forward higher requirements for teachers' comprehensive ability, not only requiring them to master theoretical knowledge, professional knowledge and practical skills, but also have professional quality and expansion ability, so as to provide professional teaching services for students. Nowadays, the number of college enrollment continues to increase, the scale of the school continues to expand, the lack of electrical teachers affects the development of professional teaching, therefore, there is an urgent need to expand the faculty, especially the "double teacher type" teachers and full-time experimental teachers, which can be expanded through the following ways: First, improve the teaching team construction mechanism, the construction and training of electrical professional teachers should be continuous and gradual, and need to formulate clear goals and programs. According to the actual situation, it is necessary for colleges and universities to strengthen teacher training, introduce outstanding talents, expand recruitment channels, in order to expand the teaching staff, and formulate corresponding countermeasures, and finally improve the teaching staff constantly. Second,

colleges and universities should also vigorously introduce high-level electrical talents, especially the “double-qualified” teachers with practical experience in the electrical industry. In combination with the nature and characteristics of the electrical professional industry, it can be seen that feasible talent introduction plans can be formulated through consultation, and training plans can be formulated to improve teachers’ own abilities, or professional teachers can be rehired who have retired, and finally provide teacher support for subsequent teaching work. Third, colleges and universities should also actively carry out the construction of “double-qualified” teachers, select excellent teachers to study abroad or work in enterprises, and organize regular electrical teachers to carry out research, inspection and study visits to electric power enterprises, requiring them to work and study in technical posts under the guidance of professional and technical personnel. And they should also be organized to participate in the power and electrical industry qualification and certification examinations, which can make their practical literacy and professional ability can be effectively improved, and finally build a “double-qualified” electrical professional teacher team.

#### 4. Broaden the channels of school-enterprise cooperation

In order to give full play to the application value of the new teaching mode of school-enterprise cooperation, electrical teachers need to actively expand the channels of school-enterprise cooperation in the process of carrying out teaching activities, in order to strengthen the cooperation and communication between schools and enterprises, and finally realize the deepening of school-enterprise cooperation. College leaders and teachers need to be fully aware that it is difficult to effectively improve the teaching quality of professional courses by relying only on internal resources. Therefore, they need to actively cooperate and communicate with local enterprises, governments and other institutions, so as to improve teachers’ teaching ability and enrich their teaching experience. Therefore, electrical teachers should not be limited to the entity enterprises when carrying out the integration of industry and education, but should further expand the cooperation channels according to the development strategy of the school and the needs of social development, and constantly innovate the communication forms between the school and the enterprise, so as to lay a solid foundation for the joint cultivation of applied talents between electrical enterprises and universities. With the vigorous development of social economy, a variety of advanced technologies and equipment have emerged, making the new media industry rise rapidly. Based on this, electrical teachers can try to establish a deep cooperative relationship with new media enterprises, and then provide students with online learning platforms and simulation policy platforms, so that students can use advanced technologies to exercise their practical skills, and finally achieve the expected teaching results.

### Epilogue:

All in all, based on the new situation, electrical teachers in colleges and universities need to actively cooperate with electrical enterprises under the leadership of the government, so as to integrate resources to implement the integration of production and education, provide opportunities and platforms for students to practice and practice, guide them to internalize theoretical knowledge and practice skills in the process, and ultimately promote the all-round development of students. Specifically speaking, teachers can take measures such as recognizing the concept of integration of production and education, improving the practical curriculum system, strengthening the construction of teachers, and broadening the channels of school-enterprise cooperation to give full play to the teaching value of integration of production and education, which can ultimately cultivate knowledge-based and skilled talents for the development of the industry. At the same time, it can effectively improve the economic benefits of enterprises, optimize the structure of human resources, and achieve win-win cooperation between schools and enterprises.

### Reference literature:

- [1] Ziqi Lan. Exploration and Practice of university-Enterprise Dual education for Electrical Majors in Higher vocational Colleges under the background of integration of production and Education [J]. Journal of Huanggang Vocational and Technical College,2019,21(6):3.
- [2] Qian Zhang. Research on Teaching Strategy Optimization of Electrical Automation Technology Major in Higher Vocational Colleges from the perspective of integration of Production and Education -- A case study of Electrical Safety Technology course [J]. China Science and Technology Economic News Database Education,2023(2):4.
- [3] Qinyuan Huang,Xingzhong Xiong. Exploration of Electrical Talents Training for Rural Revitalization and integration of production and Education [J]. Education and Teaching Forum,2022(42):161-164.
- [4] Xiaowei Li,Zhixue Wang,Guangmin Liu, etal. Discussion on Cooperative education Mechanism of integration of Industry and Education in Electrical major of rail transit under the background of New infrastructure [J]. Science and technology [2023-08-18].
- [5] Jing Zhang,Dong Li. Research on Training model of Electrical automation professionals under the background of integration of Industry and Education [J]. Chinese Science and Technology Journal Database (Full text) Education Science,2022(9):3.
- [6] Jianhui Tian. Research and Practice on the training of applied Talents for Electrical majors based on the integration of Production and Education [J]. Chinese Science and Technology Journal Database (full text) Education Science,2023(4):4.