

# Research on the training mode of innovative talents in higher vocational colleges based on "integration of production and education, school-enterprise cooperation"

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**Abstract:** The talent training model based on school-enterprise cooperation is an effective way for higher vocational colleges to cultivate high-quality and high-skilled talents, an important carrier for deepening industry-university-research cooperation education, and an important way to improve the level of talent training. Under the continuous advancement of the national top-level design on the teaching reform of higher vocational colleges, it is necessary for higher vocational colleges to adapt to the requirements of vocational colleges to cultivate applied talents and achieve sustainable development. The talent training model of industry-education integration and school-enterprise cooperation is not only in line with the current development of my country's higher vocational colleges, but also in line with the needs of the market economy for talents. The talent training mode of school-enterprise cooperation in higher vocational colleges is discussed from three aspects: the current situation of school-enterprise cooperation in higher vocational colleges, the problems existing in school-enterprise cooperation, and the countermeasures for school-enterprise cooperation, which is further laying the foundation for the scientific and high-level application of the "integration of production and education, school-enterprise cooperation" model.

**Keywords:** Integration of production and education, school-enterprise cooperation, higher vocational colleges, innovative talents, training mode

## 1. Introduction

There is an inevitable internal connection between school-enterprise cooperation and vocational education, which is of great significance to higher vocational colleges and an effective way to cultivate applied talents. The talent training model of school-enterprise cooperation has changed the traditional state of disconnection between school education and enterprises [1]. Cultivating applied talents is not only the basic task of running schools in higher vocational colleges, but also an inevitable requirement for higher vocational colleges to better adapt to social development [2].

In recent years, the state has vigorously developed vocational education, and has successively issued a series of policies to further promote the development of vocational education [3]. For example, the "National Vocational Education Reform Implementation Plan" issued by the State Council in 2019 proposed to promote the integration of production and education in the "dual" education of schools and enterprises, and to promote the comprehensive strengthening of in-depth cooperation between schools and enterprises [4]; The "Overall Plan" for Evaluation and Reform, which regards school-enterprise cooperation as one of the focuses of evaluating vocational schools [5].

School-enterprise cooperation refers to a cooperation model established by schools and enterprises. Strengthening school-enterprise cooperation in higher vocational colleges is the key to cultivating innovative talents, an important part of cultivating students' ability to analyze and solve practical problems, and to cultivate students' practical ability and practical ability [6]. The important means of innovation ability can greatly promote the steady development of higher vocational colleges.

In foreign countries, school-enterprise cooperation has become a common mode of vocational education. However, at this stage, higher vocational colleges still have certain problems in running schools and personnel training, especially the urgent need to enhance innovation ability, which inhibits innovation and entrepreneurship education development.

## **2. The current situation of school-enterprise cooperation in higher vocational colleges**

Since the late 1980s and early 1990s, my country's higher vocational education has developed rapidly [2]. Although the history of higher vocational education is very short, through hard work, not only has it cultivated a group of applied talents that meet the needs of local economic construction and related industries, but also encountered enterprises, formed good cooperative relations, and carried out different forms, different levels, and different characteristics of cooperation [7]. Mainly include the following types.

### ***2.1. Investment cooperation type***

In the investment cooperation model, the school can make full use of the funds and the equipment of the enterprise, effectively reduce the training cost of the students, and enable the students to contact and learn the most advanced production technology in time. Enterprises can allow students to grow into technical talents through post-internships, meet the needs of enterprises, and obtain certain economic benefits.

### ***2.2. Introducing enterprises into the school***

The school uses its own advantages to provide production and operation sites for enterprises, and to use the advanced technology and strong human capital of enterprises to develop new majors that are urgently needed. Schools and enterprises jointly formulate teaching plans, adjust curriculum settings, teaching processes and teaching evaluation mechanisms.

### ***2.3. Dual-type (order-based school-enterprise cooperation)***

The dual mode is that the school reaches an agreement with the enterprise according to its own development. Both the school and the enterprise jointly formulate a teaching plan, carry out curriculum setting, training education, and graduation appraisal, so that the professional skills learned by students can adapt to the development of science and technology. Improve your own quality.

### ***2.4. The combination of production, education and research***

The school develops products according to market demand through the combination of production, education and research, which not only creates benefits for the school, but also provides a scientific research platform for teachers and a good practice place for students.

### ***2.5. School-enterprise combined vocational education group model***

Schools and enterprises are closely integrated, and a vocational education group model is established to realize the combination of production, education and research [5]. The school can provide enterprises with personnel training, product research and development, management reform research and other services in a timely manner according to the needs of enterprises. Enterprises provide schools with convenience in teaching and research, student internships, capital supplementation, and facility investment, and make full use of resources to promote the common development of enterprises and schools.

## **3. Deficiencies in the talent training of school-enterprise cooperation in higher vocational colleges**

School-enterprise cooperation is still a hot topic among teachers in higher vocational education. They have fully realized the benefits of the school-enterprise cooperation talent training model, but higher vocational colleges still encounter difficulties in the process of implementing this talent training model to some developmental dilemmas [8].

First, the school has insufficient understanding of school-enterprise cooperation. With the country's vigorous promotion of school-enterprise cooperation, major vocational colleges have emphasized the importance of school-enterprise cooperation in the teaching process, but in the actual operation process, they have not fully realized that school-enterprise cooperation plays an important role in cultivating students' innovation and entrepreneurship. The current cooperation basically remains on the cultivation of basic skills.

Second, the lack of communication in the process of school-enterprise cooperation. School-enterprise cooperation should be completed by mutual co-operation between schools and enterprises, but due to various reasons, there is currently insufficient communication between vocational colleges and enterprises, and there is a phenomenon of "one end of heat". Vocational colleges will actively communicate with enterprises on related matters, hoping to obtain the cutting-edge technology level of the industry through school-enterprise cooperation and increase the opportunities for students to practice and exercise; however, the enthusiasm of enterprises to participate needs to be improved.

Third, the depth of cooperation in the process of school-enterprise cooperation is not enough. The cooperation between many vocational colleges and enterprises only stays at a shallow level of cooperation in solving internships or employment. Although enterprise experts will participate in the professional seminars formulated by the school's talent training plan, they will combine the school's own hardware conditions and teachers. Due to various factors, such as major and curriculum construction, most of the talent training programs, are still formulated according to the original model, and a new set of programs that adapt to the needs of the enterprise has not been formulated according to the needs of the enterprise business requirements.

In addition, the teachers in higher vocational colleges are good at theoretical research, lack practical experience, and have insufficient understanding of the actual production situation of the enterprise; and the enterprise does not have enough understanding of the theoretical teaching content of the school, which will lead to the theory learned by the students and the post practice in the later stage.

These problems hinder the healthy operation of the school-enterprise cooperation talent training model and are not conducive to the establishment of long-term cooperative relations between vocational colleges and enterprises. Higher vocational colleges should uphold the spirit of innovation and reform and adopt innovative talent training paths to optimize the school-enterprise cooperation talent training model, so that higher vocational students can achieve more effective development in the new school-enterprise cooperation talent training atmosphere.

#### **4. Construction of a talent training model based on the integration of production and education and school-enterprise co-operation**

In recent years, the state has paid unprecedented attention to higher vocational education, which has brought development opportunities to higher vocational education. For example, the state has formulated laws and regulations on school-enterprise cooperation from the policy level, clarifying the rights and obligations of the government, industry, enterprises, and schools, ensuring in-depth cooperation between schools and enterprises in joint training of talents, and ensuring that enterprises can successfully accept students for internships and practical applications and training, as well as receiving teachers for enterprise practice [9].

In this way, it can not only realize the benign interaction between vocational education and economic and social development, take care of the interests of enterprises to the greatest extent, and strive to maximize the interests of enterprises, but also provide good practice conditions for the school.

##### ***4.1. Government policy guidance to strengthen the implementation of laws and regulations***

Obtaining policy support and guidance is the key to the promotion of the talent training model of the integration of production and education and the cooperation between schools and enterprises in higher vocational colleges [10]. Vocational colleges with strong regional economic development strength have good reputation and have great advantages in acquiring cooperative enterprises or introducing cooperative development projects; but for vocational colleges at the bottom of development, it is very difficult to introduce projects and industrial cooperation.

Therefore, to promote the comprehensive promotion and implementation of the talent training model of industry-education integration and school-enterprise cooperation, the top-level design of the state and

the strengthening of policy support by local governments are particularly important, and legal safeguards are also very necessary.

#### ***4.2. Diversified capital investment and guarantee***

In promoting the integration of production and education and the talent training model of school-enterprise cooperation, strong financial support is very necessary for higher vocational colleges. Number of surveys have proved that the cost of investment and consumption in the promotion of the integration of production and education and the promotion of school-enterprise cooperation is relatively large [11]. Therefore, financial support is very necessary.

The integration of production and education and school-enterprise cooperation are themselves a complex system. Schools and enterprises work together to build a practical operation platform for students and strengthen scientific and technological research and development according to the needs of projects and enterprises. The resources invested in the whole process are very large, relying solely on schools and enterprises. Corporate financial support is extremely limited. Therefore, it is necessary to build corresponding school-enterprise R&D projects. On the one hand, it can apply for financial support from government authorities, and on the other hand, it can expand the application market and strive for market profits. In addition, you can also apply for financial support from the Alumni Foundation.

#### ***4.3. Build a quality assurance system and evaluation system for talent training***

It is very important to play a guiding role to promote the integration of production and education and the efficient implementation of the school-enterprise cooperation model in higher vocational colleges, and to build a strong quality assurance system and evaluation system for talent training. The integration of production and education and school-enterprise cooperation require higher vocational colleges to implement comprehensively from strengthening professional settings, promoting the construction of teaching staff, building corresponding laboratories, implementing classroom teaching, and building internship training platforms [12]. Meanwhile, the responsible persons are arranged in various majors, and the responsible persons are guided by the system to strengthen the communication with the counterpart enterprises, and to realize the scientific and systematic dynamic adjustment of the talent training status.

After the industry-education integration and school-enterprise cooperation model has been running for a period, by asking students, professional leaders, cooperative enterprises or project leaders for their opinions, timely feedback can be obtained to achieve efficient implementation. The construction of the actual evaluation system should focus on the application of information network technology, and to realize the evaluation and timely statistical analysis of data and information through the network. The construction of the quality assurance system is closely linked to the evaluation system to a certain extent, and the evaluation system lays the foundation for the quality assurance system.

#### ***4.4. Improve the top-level design and build a modern vocational education system***

To realize the integration of production and education and the cooperation between schools and enterprises, higher vocational colleges need to build a systematic and complete modern vocational education system. Only by building a modern vocational education system can the implementation of this model be guaranteed. Talent training in higher vocational colleges requires not only the top-level design of government departments, but also the top-level design of schools.

The government strengthens policy, taxation and financial support, and schools should actively change their management thinking and build a diversified governance management system within the school. In the construction of the modern vocational education system, the school can cooperate with the government to break through the limitations of vested interests and formulate specific development plans based on long-term development and the actual situation of the college. Meanwhile, with the support of the government, the school organizes large-scale visits to enterprises every year to understand the changes in the demand for talents in the development of enterprises.

#### ***4.5. Explore management experience and improve the level of school-enterprise co-operation***

As an important part of vocational colleges, higher vocational colleges can recognize that the integration of production and education and the mode of school-enterprise cooperation are in line with

their own development goals [13]. Through the actual investigation, it is found that the current higher vocational colleges are not well advanced in this model, and a large part of the reason is the lack of management experience, which seriously hinders the efficient implementation of school-enterprise cooperation.

To this end, higher vocational colleges should seek management experience from colleges that have successfully promoted this model, and that strengthen “localization” applications, and provide support for the implementation of school-enterprise cooperation.

Higher vocational colleges should actively implement a board of directors composed of leaders of the government, enterprise and university, implement the dean responsibility system, and fully integrate the resources of government, enterprise and university. At the same time, it obtains support from policies, market development and society to fundamentally solve the limitations and constraints brought by system construction to school-enterprise cooperation, thereby ensuring that the integration of industry and education and the mode of school-enterprise cooperation will not deviate from the actual training needs. It has very important practical significance.

## 5. Conclusion

The school-enterprise cooperation talent training model has become an important trend and direction of talent training in higher vocational colleges in the new era. This model can realize the complementarity of resources between schools and enterprises, promote teaching innovation and reform, and enhance the practical ability of teachers and students. Vocational colleges and enterprises should recognize their responsibilities in school-enterprise cooperation, go deep into the talent training process, and give full play to the value and important role of school-enterprise cooperation in talent cultivation.

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