

## **Application Strategies of "Industry-Education Integration and School-Enterprise Cooperation" Model in Mechanical Specialty**

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**Abstract:** The mode of "integration of industry and education, school-enterprise cooperation" is an important strategy to cater to the development of industry and education upgrading. In order to improve the quality of talents in the field of mechanical manufacturing, it is necessary to make a thorough study of the methods in the process of implementation. On this basis, it effectively promotes the development level of related industries and provides reference content for relevant educational practice and theoretical research.

### **1. Introduction**

Under the social background of China's rapid economic development, the demand for applied technical talents in the industrial field is increasing, and the quality and practical capabilities of talents have even become a key factor in determining the development of the industry. Therefore, in the course construction of Higher Vocational colleges, it is necessary to put forward the mode of "integration of industry and education, school-enterprise cooperation", which has typical application advantage value. However, in order to better develop the application level of this model, we must proceed from the current application conditions and take targeted optimization measures on the basis of in-depth analysis, so as to improve the adaptability level of the implementation strategy.

### **2. The Current Situation of the Development of the Model of "Integration of Industry and Education, School-Enterprise Cooperation"**

#### **2.1 Policy content is not comprehensive**

The integration of industry and education and the construction of school-enterprise cooperation mode can not be separated from the policy support at the national level. Especially in the direction guidance and content support, the relevant implementation standards should be formulated by the state. Only by fully referring to the authoritative conditions can we play an active role in the process of unification. However, in the study of national documents on the project of cooperation with schools and enterprises and integration of industry and education, there are many documents and clauses supported by the model theory, but there are obvious weaknesses in the construction of rigid management such as legal explanation and regulations. Especially in the content of the responsibilities and obligations of both schools and enterprises, there is no legal and systematic regulation, so that the content of the school-enterprise cooperation model lags behind the development level of higher vocational education. Therefore, on the basis of a deep understanding of this objective condition, it is necessary to clearly design the responsibility content of school-enterprise cooperation within the legal framework and protect it through rigid legal means to ensure the development of school-enterprise cooperation projects.

#### **2.2 School enthusiasm is reduced**

In the process of developing school-enterprise cooperation projects, various types of curriculum

models have been developed, such as apprenticeship, professional co-construction, and order classes, which have achieved good results. In the construction process around the mechanical manufacturing profession, through the construction and cooperation of the five systems of enrollment selection, curriculum design, teaching upgrade, training management and employment assistance, an in-depth cooperation relationship between universities and enterprises has been established. However, in the process of implementation, due to the teaching development mode of school-enterprise cooperation, it shows higher cost conditions in maintenance. Its single income level can not meet the objective conditions of universities and enterprises, especially in the case of enterprises reducing cost input, which has a significant impact on the enthusiasm of the school.

### **2.3 Industry Development Stage Limitation**

Machinery manufacturing specialty is mostly applied in industrial manufacturing industry. It is a typical technical type of work. In the direction of training in Higher Vocational colleges, it mainly shapes talents into technical talents with application ability. Due to the restriction of students' source conditions, most of the mechanical and electrical majors graduated from higher vocational colleges will take up jobs in small and medium-sized enterprises, and few of them can work in large enterprises [1]. Under this objective condition, it is bound to be affected by the overall economic development conditions of the industry. The current development status of China's industrial manufacturing industry is in the historical transition period. Through the integration of large and medium-sized enterprises to SMEs, the adjustment of the industry structure is completed, and the optimal allocation of resources is realized.

As a result, the school will be affected by the state of development of the industry in the process of joint education, and there will be uneven problems in terms of cooperation content and quality. Under the guidance of the principle of market survival, some small and medium-sized enterprises cooperating with schools will be swallowed up and integrated in this process. Therefore, it also leads to the integration of production and education, school-enterprise cooperation in the education model to a certain extent into the integration period of resources..

### **2.4 Reflections of Contradictions in Operation**

The most obvious problem in the application of school-enterprise cooperative teaching mode lies in the contradictory state in operation. Firstly, as applied talents, there will be a certain gap in the selection of students' sources between colleges and universities, so that the quality conditions of students can not be guaranteed, and even the problem of insufficient students' sources will arise. At the same time, after the job-employment of vocational colleges in higher vocational colleges, it is difficult to absorb high-quality talents due to the lack of social status, which has created obstacles for the development of educational quality.

Secondly, in the process of curriculum design and teaching arrangement, the cooperation between the school and the enterprise did not form a systematic application content. Especially in the process of developing the curriculum project, there is a clear fault in the practical experience of the enterprise and the knowledge content of the textbook outline. Thus, the practical problem of "changing soup without changing dressing" in teaching has arisen, which has not played a positive guiding role in the cultivation of students' professional quality. In order to upgrade the course content, enterprises need to invest a lot of cost conditions in the course construction, and only after a certain period of accumulation can they fully implement these contradictory contents, which are the key factors of deepening the development of marketing school-enterprise cooperation.

Thirdly, in the link of training and employment. Although enterprises provide students with opportunities for job training, in job design, it is out of consideration of production quality and cost. Not all students can participate in the first-line production posts, this condition also makes the effect of training greatly discounted, hindering the development level of school-enterprise cooperation model. In addition, in the process of employment selection, the education department's assessment direction for higher vocational colleges is the student employment rate, although the school-enterprise cooperation solves the employment problem of students under certain conditions [2]. However, the overall quality of employment cannot be guaranteed. Although a small number of

students have obtained better jobs, the employment level of most students is not high-end, thus weakening the basic requirements of education and employment. On this basis, some colleges and universities have basically stopped the implementation of the school-enterprise cooperation project.

### **3. The Strategy of Developing the Mode of "Production and Education Integration, School-enterprise Cooperation" in the Major of Mechanical Manufacturing in Higher Vocational Colleges**

#### **3.1 Clarify the direction of talent development**

Students are the core of education work, and their ability training and employment conditions are key indicators reflecting the success or failure of the "production-teaching integration, school-enterprise cooperation" model. Therefore, in the mechanical and electrical professional of higher vocational colleges, it is imperative to take the ability training of students as the core indicator and specific direction, so as to effectively improve the quality of education under the teaching mode. In this way, we must clearly define the training objectives of students as the conditions of their professional ability and the indicators of their lifelong development. Under the actual development conditions, we should make a reasonable plan for the long-term development direction.

Firstly, in the process of cultivating students' professional ability, we should pay attention to the cultivation and quality of students' practical ability. The curriculum reform content of mechanical and electrical specialty will run through the whole teaching process, and all teaching methods will be launched in this direction. While mobilizing the enthusiasm of students, they will make their own independent participation in the curriculum practice learning projects, and actively create conditions for their professional development level.

Secondly, in the teaching process, students should be helped to clarify their long-term career development plans, and pay attention to the exercise of students' lifelong development ability [3]. Lifelong development ability is the main feature and key content under modern educational thought. Especially in the modern vocational education activities, develop the mode of industrial integration and school-enterprise cooperation. We must take the development of students' lifelong professional ability as the goal of management, not only to ensure the conditions of students' employment rate, but also to safeguard the quality of students' employment. And in the post work, make it always maintain the enthusiasm and motivation for development, continue to play the advantages of capacity conditions.

In order to achieve these two goals, it is necessary to make students master systematic professional knowledge skillfully while teaching mechanical manufacturing specialty. As the key for students to enter the workplace, and make a solid level of knowledge, become an important cornerstone of their lifelong career development. At the same time, students must master the scientific learning methods in the form of practical textbook content. On the basis of scientific learning channels, we will continue to achieve self-education and learning, and constantly enhance our knowledge depth in post practice and work, and obtain more long-term development conditions.

#### **3.2 Building a school-enterprise cooperation platform**

The teaching mode of industrial integration and school-enterprise cooperation is not a one-way payment and demand. It is necessary to build a precise talent training platform on the basis of full cooperation between higher vocational colleges and enterprises. And in the process of professional curriculum construction, complete the docking of theoretical knowledge content and production time project. In order to achieve this goal, we must do a good job in the following five points.

First, the docking of professional courses and industry needs. In the course design of mechanical and electrical specialty in Higher Vocational colleges, it is necessary to take the development trend of professional industry market as the basis. Aimed at improving the employment competitiveness of professional courses, and with the help of enterprises, the professional content should be adjusted appropriately to form a complete dynamic adjustment mechanism to ensure the flexibility level of

professional courses. Second, the docking of teaching and production process. In the process of personnel training, the classical theoretical and academic knowledge is usually used as the guidance in the past education textbooks. Although the theoretical content has obvious authority, there are obvious deficiencies in the sense of practical guidance. Therefore, while upgrading the professional curriculum content, higher vocational colleges need to absorb the experience and knowledge of enterprises in front-line production, adjust and modify the content, so as to improve the industry adaptability level. Thirdly, the docking of curriculum content and professional standards. When students study professional courses, they can add the post requirements of enterprises in production, operation and management into the learning projects, so as to ensure the consistency of their abilities with the needs of enterprises. Fourth, the docking of diplomas and professional qualifications [4]. In the mechanical and electrical professional, students will receive the corresponding academic credentials while completing the learning tasks. In order to ensure the student's career development level, the school can use the corresponding professional qualification certificate as the standard condition for the student's graduation, thus improving the student's knowledge structure. Comprehensive. Fifth, the connection between vocational education and learning ability. In the school-enterprise cooperation project, the school can set up corresponding skills and knowledge training courses for enterprises in response to the needs of enterprises in terms of personnel quality. Thereby improving the knowledge level of the front-line staff of the enterprise and improving the competitiveness of the enterprise. At the same time, through this mode of running a school, the integration of industry and knowledge will be accelerated, and the advantages of vocational education will be brought into play in the true sense, and the technological development will be promoted for the mechanical and electrical professional and related industry sectors.

### **3.3 Optimize student structure**

In the modern teaching environment, there is a close connection between each independent subject, and this connection is gradually transforming from invisible conditions as the level of scientific research deepens. For example, in the major of mechanical and electrical engineering, in the project of equipment management of machining center, locomotive, drilling, maintenance and other technical contents will be involved. In the knowledge structure, we need to mobilize all aspects of professional knowledge to complete this operation.

At the same time, the integration of professional knowledge and skills is also reflected in the management of production line. Only by completing the pressure processing, metal processing and other processes, can the production of products be completed. These operational projects are applied to the corresponding computer technology, and under the auxiliary role of CAD and other functional software, form an integrated technical system.

Therefore, in the process of curriculum design, the mechanical manufacturing profession of higher vocational colleges must constantly optimize the structure of curriculum design, and take the practical conditions of professional curriculum knowledge as the basic content. Therefore, it can effectively improve the practical level of students in the learning process and ensure the practicality and rationality of students' knowledge structure. Especially in the design of compound classroom, it is necessary to increase the proportion of the scope, on the basis of constantly improving the students' ability of combining theory with practice, to enhance the training of students' professional skills. In order to better adapt to the needs of enterprises, and create conditions for the professional development of students.

### **3.4 Deepening School-Enterprise Cooperation**

The implementation of school-enterprise cooperation and the combination of production and education has been restricted and restricted by various conditions in practical conditions. However, as the direction of scientific development, it is necessary to optimize and improve the existing problems, while improving its scope of application and application level [5]. Here, deepening the depth of school-enterprise cooperation is one of the most effective optimization methods. In the process of implementation, higher vocational colleges can promote and optimize the quality

conditions of the teaching team through in-depth cooperation with enterprises. Under the guidance of the company's practical ability and production experience, the teaching team with the "double teacher quality" is constructed to adapt to the development direction of professional education and create basic conditions for cultivating high-quality talents.

At the same time of creating a "double-skilled quality" teaching team, every teacher of mechanical manufacturing can do both the workshop and the lecture hall. The practical experience can be effectively transformed into the teaching language, and in the practical production operation, the theoretical knowledge in the specific technical links is pointed out. In terms of methods, higher vocational colleges can place new teachers into enterprises for post training, so as to improve their professional ability under the guidance of advanced production methods. While learning technical knowledge, the theoretical content and scientific and technological knowledge are fully integrated.

### **3.5 Develop diversified cooperation**

Based on the problems in the practice of school-enterprise cooperation, we can upgrade the management of its limitations by optimizing the cooperation mode. Firstly, in view of the characteristics of long period, low return and high investment of school-enterprise cooperation, we can try to apply short-period cooperation projects to control the cost input of school-enterprise cooperation projects. At the same time, in the process of accelerating the cycle operation, improve the efficiency of cooperation in running schools, and effectively increase the stickiness of both parties, and establish long-term strategic partnerships in diversified cooperation projects. Secondly, in the process of maintaining the project, both the school and the enterprise must work together to create conditions for the deepening and long-term cooperation on the basis of ensuring mutual benefit. In this process, the improvement of students' ability and employment quality will be realized, so that the overall "production-teaching integration, school-enterprise cooperation" model and even the development of the industry will enter a healthy track.

## **4. Conclusion**

In short, under the new normal of the knowledge economy, the implementation of the "production and education integration, school-enterprise cooperation" model is to improve the adaptability conditions of talent positions, but also an important means to deepen the combination of scientific research and applied technology. Especially in the mechanical and electrical professional of higher vocational colleges, in order to implement the educational goals and to deliver specialized technical talents to the industry, it is necessary to promote the process of integration of production and education on the basis of setting up a school-enterprise cooperation platform. Thus in the process of deep cooperation, enhance the adaptability of students in post work. In order to speed up the transformation and upgrading of the industry, we should link the scientific research in schools with the technological development of enterprises while improving the quality of education.

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