Research and Practice on Effective Path of Enterprise Participation in Vocational Education

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Abstract. The participation of enterprises in vocational education is the essential return of vocational education. The article combines the actual situation of Chinese enterprises to participate in vocational education, through the summary of the history and actual experience of the developed countries that have been successful in participating in vocational education, and sorts out the difficulties faced by Chinese enterprises in participating in vocational education, based on the existing research of many scholars. It proposes an effective path for enterprises to participate in vocational education and practice it.

1. Introduction
Our country has always attached great importance to vocational education and hopes to strengthen the comprehensive quality of training high-skilled applied talents through the combination of work and study. On October 17, 1991, the State Council "Decision on Vigorously Developing Vocational and Technical Education" put forward "Combination of Industry and Education, Combination of Work and Learning"; on October 28, 2005, "Decision of the State Council on Vigorously Developing Vocational Education" emphasized that: we should change the mode of talent training centered on schools and classrooms, and vigorously promote the combination of work and learning, and half. Work-study system; In 2016, the Ministry of Education "Some Opinions on Improving the Teaching Quality of Higher Vocational Education in an All-round Way" put forward that the combination of work and study should be regarded as an important starting point for the reform of talent training mode in Higher Vocational education, clarifying the goal of talent training, deepening the reform of talent training mode of work-study combination, school-enterprise cooperation and post-practice. Therefore, the combination of work and study has been paid more and more attention in the field of Vocational education.

With the deepening of China's reform and opening up, vocational education has been placed in an important position in the development of national economy. Since the 21st century, as an important basis for economic and social development and the strategic focus of the whole education work, the reform and development of vocational education has been highly valued by the Party Central Committee and the State Council. Governments at all levels and educational administrative departments are vigorously promoting the reform and development of Vocational education, and have issued a series of effective policies. To a certain extent, they have changed the situation of weak foundation, unbalanced development and poor conditions of running vocational education in our country in the past. They have made great progress in the scale, structure and quality of running
schools. High. Vocational colleges and universities actively explore ways to combine work with study, and accumulate some successful experience. However, from the current development situation of Vocational Education in China, there are still many problems for enterprises to participate in Vocational education. This paper analyses and studies these problems, puts forward effective ways for enterprises to participate in Vocational education, and puts them into practice, which is of great significance to explore how enterprises can effectively participate in Vocational education.

2. The Present Situation and Problems of Enterprise Participation in Vocational Education in China

2.1. When enterprises participate in Vocational education, their interests are not guaranteed
As mentioned earlier, since the 1990s, China has fully realized the importance of Vocational and technical education, recognized the importance of enterprises' participation in Vocational education, issued a series of policies to support and encourage enterprises to participate in Vocational education. However, these are the guidance from the macro level. For enterprises, if they participate in Vocational education, there is no scientific and standardized management system and lack of relevant coordination and supervision mechanism. As a result, when enterprises actually participate in Vocational education, their interests are not guaranteed, so the enthusiasm of enterprises is not high.

2.2. Enterprises participate in Vocational education, and the mode of cooperation is relatively single
Many enterprises realize the importance of participating in Vocational education, through the combination of work and study, internship and other modes to carry out school-enterprise cooperation. However, under these cooperative modes, enterprises have little involvement in Vocational education. The students trained can not complete the transformation to enterprise employees immediately after they leave school. This has affected the enthusiasm of enterprises to participate in Vocational education.

2.3. Teachers'scientific research ability is insufficient
Teachers of professional courses in vocational education have insufficient understanding of Vocational education. It is often believed that teachers of professional courses in vocational education can only teach well, manage students and teach well. They can not solve the technical problems faced by the production line without going to the production line to have a thorough understanding of the required professional knowledge. The students who are taught in this way tend to have narrow knowledge and outdated professional knowledge, and the process of transforming students into employees is relatively long. In addition, teachers' inadequate scientific research ability can not solve the technical problems faced by the production front line, and also directly hampers the professional trust of professional teachers in enterprises, thereby reducing the willingness of enterprises to participate in Vocational education.

3. Practice of Effective Path for Enterprises to Participate in Vocational Education
Exploring an effective way for enterprises to participate in vocational education is beneficial to promoting the enthusiasm of enterprises to participate in Vocational Education in China, ensuring the participation of innovative enterprises in Vocational education, improving the supervision and management system of government and trade associations, and clarifying the responsibilities and obligations of enterprises in Vocational education. It is of great practical significance to promote schools. Enterprise cooperation in running schools, cooperative education, cooperative employment and cooperative development has practical guiding role.

Taking the "Electrical Automation Class for Every Mechanism" jointly established by the Major of Machinery Manufacturing and Automation of Material and Mechanical and Electrical College and Guangdong Metong Measurement and Control Technology Co., Ltd. as an example, in the early stage of the establishment of "Electrical Automation Class for Every Mechanism", both sides of the school
and the enterprise proposed to persist in building a dual education mechanism between the school and the enterprise, and build a joint venture. Cooperative intention of sharing resources platform; alternating theoretical learning with enterprise practice in the four-year learning process for skilled trainees; clarifying the allocation principle and working procedure of "engineering" or "basic and professional skills training" time for skilled trainees in four years; and jointly determining the learning of each skilled trainee by both schools and enterprises School instructors and enterprise instructors; in the course of class, guided by the actual work tasks of enterprises, the new teaching mode of combining self-learning of skilled students with teachers' teaching is implemented.

Taking engineering training metalworking practice teaching as an example, this paper organically integrates Chinese vocational skill training with German "dual system" vocational education. Enterprises are deeply involved in the teaching reform and actively explore and practice the effective path of enterprises' participation in Vocational education. The main methods are as follows:

3.1. Multi-skill training embodied in specialty and curriculum setting
The so-called "multi-skill training" refers to a new type of skill training mode, which enables students to master a variety of operational skills while keeping the training time unchanged, compared with the traditional skill training mode, that is, students only learn one job in the process of skill training in Colleges and universities. It absorbs the German "dual system" teaching based on professional competence, focusing on the "broad foundation, complex" characteristics. For example, I changed the traditional mode of training mechanics by type of work (fitter, lathe worker, milling worker, sheet metal, welding, etc.) into setting up a comprehensive specialty of "mechanical mould", which includes four major directions: metal cutting, die manufacturing and operation. In order to realize the characteristics of "multi-skill training" in the curriculum of this comprehensive specialty, I divide the curriculum into 18 courses, which are divided into six categories: equipment manufacturing and maintenance, pneumatic and electro-hydraulic control systems, precision mechanical and electrical maintenance, metal cutting and numerical control machine tool programming and operation, WEDM and EDM machine tool programming and operation. Mold manufacturing and maintenance. Of these 18 courses, 5 are basic training courses (vocational education, mechanical drawing, mechanical foundation, electrical foundation, computer operation), 13 are professional training courses (benchwork skills, metal cutting, sheet metal, electric welding, gas welding, forging and heat treatment, pneumatic control, hydraulic transmission, electrical and voltage technology, CNC machine tool programming). Process operation, equipment manufacturing and maintenance, mold manufacturing and maintenance, according to the focus of different professional directions in teaching, formulate teaching syllabus and training plan for training equipment. The training plan has been significantly reformed with the traditional curriculum. The ratio of skill training course to production practice, theory course, skill training course and production practice is 13:27:2 (school hours). The characteristic of skill training course is to combine the content of technology theory course with skill training so that students can master several skills in a relatively short period of time. After multi-skill training, when students participate in production practice, they have mastered certain skills. They can formulate reasonable process rules according to the technical requirements of drawings, process workpieces manually and mechanically, and inspect the quality. In other words, students' internship in factories is to skilled and practical the skills they have learned.

3.2. Achieving multi-skill training by "project training method"
"Project training method" refers to a multi-type and multi-skill training method which simulates the production state of enterprises and organically integrates the traditional technology theory course and skill teaching into the process of making a machine or electrical model. It is an effective form of multi-skill training. Next, I take the steam machinery model with running function as an example to illustrate my practical experience.

The steam engine model weighs about 20KG and is made of steel, steel plate, section steel, aluminium, copper, hard plastics and more than a dozen metal and non-metal materials. The teaching
of this project consists of several training units, such as quality, fitter, turner, milling, sheet metal, electric welding, forging and heat treatment. Focus on basic training for students in such skills as forceps, turning, milling, sheet metal, electric welding and heat treatment. Each training unit is equipped with process theory and operation essentials guidance textbooks, standardized parts drawings, explanatory slides, theoretical knowledge test papers, strict processing quality inspection standards and detailed quality scoring tables.

In the teaching process, the specific implementation process of skill training for each unit is as follows: students read workpiece processing drawings, reading guidance Textbooks - teachers use slides to explain process theory - students compile process rules, list tools - students prepare tools, measuring tools - teachers explain the essentials of operation on site and demonstrate them.-- Students'operation and teacher's instruction - students operate independently and constantly check the quality of the processed parts, teachers inspect and correct errors - are finished. Students' drawings require that the quality of the processed parts be checked and graded - teachers test and grade.

3.3. Problems in Research and Improvement Measures
The exploration and practice of personnel training in Material and Mechanical and Electrical Colleges of our university for many years have proved that the establishment of the school-enterprise cooperation mechanism, i.e. the dual-subject mechanism, is a very effective way to solve the problem of the main body of higher vocational education at the present junior college level. Specifically, on the premise that schools and enterprises have the same ideas, values, responsibilities and obligations for the training of high-skilled talents, the two sides of schools and enterprises can sign a long-term, legally effective agreement on the joint training of schools and enterprises to share their responsibilities and meanings in the training of high-skilled talents. With the consolidation of business affairs, both schools and enterprises will form a community of responsibilities and interests, and establish a dual-subject school-running mechanism of school-enterprise cooperation, which will guarantee the mechanism of school-enterprise cooperation. Through the signing of the joint training agreement between schools and enterprises, the two sides can jointly formulate a talent training program that meets the needs of enterprises according to the development strategy of enterprises, so as to make the cooperation between schools and enterprises close and in-depth. Detailed rules such as student selection, training, school-enterprise teacher allocation, assessment criteria and quality monitoring can be made clear so that the quality of high-skilled personnel training can be obtained. It can organize a team of teachers consisting of enterprise training lecturers and school full-time teachers to work out teaching plans and implement teaching process together to ensure that the knowledge and skills learned by skilled participants keep pace with the times.

Taking the "Electrical Automation Class for Every Mechanism" jointly established by the Major of Machinery Manufacturing and Automation of Material and Mechanical and Electrical College and Guangdong Metro-Measurement and Control Technology Co., Ltd. as an example, in the early stage of the establishment of "Electrical Automation Class for Every Mechanism", both sides of the school and the enterprise proposed to persist in building a dual education mechanism between the school and the enterprise, and build a joint venture. Cooperative intention of sharing resources platform; alternating theoretical learning with enterprise practice in the four-year learning process for skilled trainees; clarifying the allocation principle and working procedure of "engineering" or "basic and professional skills training" time for skilled trainees in four years; and jointly determining the learning of each skilled trainee by both schools and enterprises School instructors and enterprise instructors; in the course of class, guided by the actual work tasks of enterprises, the new teaching mode of combining self-learning of skilled students with teachers/teaching is implemented.

In the process of implementation, both schools and enterprises jointly implement the process of selecting skilled trainees. At the beginning of enrollment, the cooperative enterprise directly participates in the process of enrollment. According to the employing standard established jointly by the enterprise and the school, the cooperative enterprise enrolls the skilled students through the form of interview, and then chooses the best ones according to the academic examination results.
4. Conclusion
This paper analyses the difficulties of enterprises' participation in Vocational education, and explores a new way for enterprises to participate in Vocational education. It organically integrates Chinese vocational skill training with German "dual system" vocational education, and carries out practice. Practice proves that the dual system is one of the effective ways for enterprises to participate in Vocational education. Of course, some problems have also been found in the research and practice. The problems found in this paper have been considered and corresponding solutions have been put forward.

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