

Analysis New Mechanism of Vocational Education about Industry University Research Cooperation

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Abstract: To establish and perfect the mechanism of production, teaching and research cooperation in vocational education, to firmly establish the concept of production, teaching and research cooperation in the field of vocational education, to encourage and guide vocational colleges, enterprises and scientific research institutes to carry out the innovation of the mechanism of production, teaching and research cooperation, so as to closely integrate the teaching behavior of Vocational Colleges with the needs of enterprises. We will promote the reform of the modern vocational school system with school enterprise cooperation as the focus, improve the vocational education talent training mode with the combination of work and study as the core, and deepen the participation of enterprises in the school running practice of vocational colleges. This paper, based on the advanced experience at home and abroad, makes an in-depth analysis of the new mechanism of vocational education industry university research cooperation to promote the new development of vocational education.

1. Introduction

The report of the 19th National Congress of the Communist Party of China proposes to improve the vocational education and training system, deepen the integration of industry and education, and school enterprise cooperation. On this basis, the general office of the State Council issued several opinions on deepening the integration of industry and Education (GBF [2017] No. 95). It is proposed that it will take about 10 years to form a development pattern of overall integration of education and industry, a sound and interactive development pattern, improve the demand-oriented talent training mode, basically solve the major structural contradictions between education supply and industrial demand, and make education develop economically. The contribution of exhibition and industrial upgrading has increased significantly.

At present, the western developed countries have generally established a relatively mature vocational education integration system, and its experience is worth learning for China. To form a highly efficient mechanism of vocational education industry university research cooperation.

2. Establishing Modern Vocational School System Based on School Enterprise Cooperation

2.1 Enterprises Deeply Participate in the Practice of Vocational Colleges

In recent years, the reform of the main body of running a school and the reform of the mode of education are the two main modes for the western developed countries to promote the reform of school enterprise cooperation in vocational education. The former is represented by “dual system” in Germany and “modern apprenticeship system” in Britain. Its essence is to change “vocational education is completely undertaken by schools” to “enterprise oriented, school assisted”; the latter is represented by “teaching factory” in Singapore and “TAFE” in Australia^[1]. Its essence is a “school-based, enterprise participation assisted” reform mode. However, no matter what kind of reform mode, the deep participation of enterprises in the running practice of vocational colleges is a common feature. The purpose is to practice the purpose of running vocational education with students as the main body, practice as the main line and improving practical ability as the purpose.

2.2 Taking the Alternation of Engineering and Learning as the Main Form

At present, the alternation of engineering and learning is the main form of modern apprenticeship school enterprise cooperation in western developed countries, usually in two ways. The first way is to be in school one to two days a week, and the rest of the time is in enterprises; the second way is to rotate between schools and enterprises every several weeks. Under this system arrangement, school teaching plays the role of supporting enterprise training. There are three ways of teaching organization in schools: first, if the number of apprentices in the same major is enough, the class will be taught separately; second, if the number of apprentices in the same major is insufficient, the class will be merged with the apprentices in related major; third, if there are many apprentices in a large enterprise, the class will be formed separately for the apprentices in this enterprise^[2].

2.3 Form a Diversified Fund Guarantee Mechanism

The guarantee mechanism of vocational education funds in Germany is a pluralistic system, which is jointly funded by public finance and private enterprises. It is mainly composed of direct enterprise funding, external fund-raising, mixed fund funding, state funding and individual funding. Among them, direct enterprise funding is the main source of funds. The Singapore government has set up a skills development fund, which is charged at 1% of the total wage of the enterprise, and is mainly used for vocational skills training for employees. At the same time, the government subsidizes the students who enter the craft school with an annual subsidy of S \$10000 to S \$20000 per person, and injects the development fund at the standard of S \$800 per student per year for the purchase of internship and training equipment. The funds for running community colleges in the United States mainly come from the tax revenue of the community, accounting for about half of the total. The rest comes from student tuition and state government funding. At the same time, enterprises in the community, people from all walks of life donate money and materials to sponsor community colleges. Enterprises also pay tuition fees to the school by entrusting the college to train staff and send students.

3. Establish a Talent Training System with the Combination of Work and Study as the Core

3.1 “Dual System” Talent Training Model in Germany

It takes a long time to establish and perfect the dual system vocational education mode in Germany, which originated from the handicraft industry guild in the middle ages.” Dual system” talent training mode emphasizes the cooperation between enterprises and vocational schools to carry out vocational education. In school enterprise cooperation, enterprises play a leading and core role, school education plays an auxiliary role, and the general time ratio of students in enterprises and schools is 3:2 or 4:1. Enterprises and vocational schools have become two main bodies of education. Enterprises pay attention to the training of practical operation skills, and schools pay attention to the teaching of theoretical knowledge.

3.2 “Production University Cooperation” Talent Training Mode in Japan

Since the establishment of its application-oriented discipline, vocational education, especially higher vocational education in Japan, has always regarded the training of application-oriented talents as the central task of running a school, and endeavored to seek and shape talent training ideas and talent types different from those of general colleges. The main characteristics of this talent training mode are to emphasize the characteristics of applied vocational education, highlight the flexibility and practicality of professional curriculum setting, attach importance to the common education of production and learning cooperation, and pay attention to the construction of “double teacher” vocational teachers.

3.3 “Teaching Factory” Talent Training Model in Singapore

“Teaching factory” is a new talent training mode proposed by Singapore with reference to the “dual system” of Germany. It is a comprehensive teaching mode that introduces advanced teaching equipment and real enterprise environment into the school, integrates the production and operation

environment of modern enterprises into the school , and forms the “three in one” teaching mode of school, training center and enterprise. The main characteristics of this talent training mode are market-oriented specialty setting, project-based teaching throughout, team building reflects the concept of “teacher-oriented” and focuses on stimulating the students potential.

4. China Should Establish and Perfect the Cooperation Mechanism of Production, Teaching and Research in Vocational Education

4.1 Establish and Improve the Cooperation Mechanism of Production, Teaching and Research in Vocational Education.

The first is to speed up the improvement of the relevant laws and regulations of the cooperation of production, teaching and research in vocational education, and to make operational provisions on the rights and obligations of the government, enterprises, schools and society in the process of the cooperation. Secondly, we should firmly establish the concept of industry university research cooperation in the field of vocational education, and encourage and guide vocational colleges, enterprises and scientific research institutes to carry out innovation in the mechanism of industry university research cooperation. The third is to establish and improve the cooperation mechanism between Vocational Colleges and enterprises to jointly develop courses and jointly set up specialties, so that the teaching behavior of vocational colleges can be closely combined with the needs of enterprises.

4.2 Promote the Reform of the System of Modern Vocational Schools with the Focus on School Enterprise Cooperation.

The first is to explore the establishment of school enterprise cooperation mode of Vocational Education in line with China national conditions, give full play to the respective advantages of Vocational Colleges and enterprises, and form a joint force to promote the leapfrog development of Vocational Education in China and promote industrial transformation and upgrading. The second is to speed up the exploration of modern apprenticeship with Chinese characteristics and form an alternative mode of work and study in line with the requirements of the development of Vocational Education in China. Third, give full play to the leading role of governments at all levels in promoting school enterprise cooperation in vocational education, formulate and improve relevant laws and regulations on school enterprise cooperation in vocational education, and provide legal protection for school enterprise cooperation in vocational education. Fourth, we will accelerate the formation of a diversified funding guarantee mechanism to promote school enterprise cooperation in vocational education, and encourage and guide social funds to enter the field of school enterprise cooperation in vocational education.

4.3 Improve the Vocational Education Personnel Training Mode with the Combination of Work and Study as the Core.

On the one hand, we should strengthen the practical guidance of vocational education, establish and improve the system and mechanism of Vocational Colleges and enterprises to jointly cultivate technical and skilled talents. On the other hand, we should explore ways and means to achieve a good connection between theoretical knowledge learning and practical skills learning, so as to fully stimulate the potential of students and promote the construction of “double teacher” vocational education teachers.

5. Implement the Legal Responsibility of Industry Education Integration

Deep integration of production and education is the only way for vocational colleges to cultivate skilled talents. Only by integrating education and teaching, production practice, quality cultivation and skill training, can high-quality skilled talents be cultivated. At present, in the process of talent cultivation in vocational colleges, the phenomenon of “two hot and two not hot” appears, which greatly restricts the cultivation of skilled talents^[3].

At present, there are two main reasons for this phenomenon: on one hand, the cost of enterprises is needed to deep Participation in vocational education, but the trained talents may not be able to realize directly, and the input-output ratio is uncertain. And the industry has not played its due role in the integration of industry and education, which leads to the industry, enterprise and vocational education moving away. On the other hand, due to the affiliation of vocational colleges, although the central government attaches great importance to the integration of vocational education industry and education to cultivate skilled talents, provincial local governments are not thorough in the implementation process, and many provinces have not even formulated implementation rules.

Based on this, our country should speed up the revision of Vocational Education Law and establish the legal responsibility for the integration of industry and education. In the form of law, the legal responsibilities and obligations of schools, enterprises, industry associations and other parties involved in the integration of industry and education should be clarified; and the legal responsibilities of governments at all levels to promote the implementation of the integration of industry and education should be stipulated.

As we all know, at present, the talent training in universities or colleges is out of place with the actual needs, and the production, learning, research and use are out of line. In this regard, we can explore and build a joint mechanism of production, learning and research to solve the problem. Scientific research institutes and universities can establish a linkage mechanism of production, learning and research with the enterprises in the front-line enterprises by means of setting up stations. So that students of relevant colleges and universities can go deep into the front line of enterprises and participate in on-site practice or research. In this way, we can not only train students, but also improve the compactness of research and practice and the rationality of human resource allocation.

In a word, we should deeply study the new path of the deep integration of industry and education in higher vocational colleges, and build new ideas and measures in line with the current social environment, so as to create a positive and efficient new mode of vocational education teaching in the continuous promotion of school enterprise cooperation and the deep integration of industry and education, and cultivate new applied talents of vocational education.

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