

The Enlightenment Research on the Grand Vocational Education Theory to the Industry-University-Research Integration of Vocational Education

Wei Lai

Human Resources Department, Jingjiang College, Jiangsu University, Zhenjiang, China

Email address:

942657388@qq.com

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Abstract: In the development of modern and contemporary vocational education in China, the grand vocational education theory occupies a crucial position. This study starts with the historical motivation of Huang Yanpei's "Grand Vocational Education Doctrine" theory and deeply explores its formation and core contents, such as educational purpose, educational principle, curriculum setting and teaching methods. Considering the current situation of the integration of production, teaching and research in vocational education, this paper summarizes the existing problems in the integration of production, teaching and research in contemporary vocational education, including insufficient government support, weak awareness of industry-university-research integration, weak construction of teaching staff and single form of industry-university-research integration, and analyzes the specific problems according to the existing practical problems. Based on the educational concept of "Grand Vocational Education Doctrine" theory, this paper provides a reference for the integration of production, teaching and research in contemporary vocational education and explores the development mechanism of industry-university-research integration of vocational education which is suitable for China's national conditions. This study not only scientifically remedies the drawbacks of vocational education at that time, but also effectively boosts the development and reform of modern vocational education. It is also applicable to the reform and innovation of the integration mechanism of production and education in contemporary vocational education, laying a detailed foundation for the reform of contemporary vocational education.

Keywords: Vocational Education, The Grand Vocational Education Theory,
The Study of Industry-University-Research Integration

1. Introduction

As an indispensable part of Chinese education system, vocational education undertakes the important responsibility of transporting compound skilled and innovation applied talents for the country. It lays a solid foundation for promoting employment and entrepreneurship as well as enhancing regional economic and social development. It also plays a vital role in improving people's well-being and building an economic system of socialist modernism. With the rapid development of vocational education, the development of industry-university-research integration of vocational education has also received unprecedented attention. It has richer connotation, larger scale, more diverse forms and perfect cooperation mechanism, showing a positive

development momentum. In the development of modern and contemporary vocational education in China, the grand vocational education theory occupies a crucial position. Huang Yanpei, as the founder and educator of vocational education, devotes his lifetime energy to the development of vocational education. His research results have a profound impact on the development of theory and practice of modern vocational education in China. The grand vocational education theory of Huang Yanpei not only scientifically remedied the drawbacks of vocational education at that time, but also effectively boosted the development and reform of modern vocational education. It is also applicable to the reform and innovation of the integration mechanism of production and education in contemporary vocational education, laying a detailed foundation for the reform of

contemporary vocational education.

2. The Formation and Core Content of the Grand Vocational Education Theory

Huang Yanpei (1878-1965), also known as Ren Zhi, was born in Chuansha, Jiangsu (City of Shanghai now). He is the founder and theorist of modern vocational education in China. His vocational education thought and theory changed the traditional vocational education which was separated from social production and life at that time, and opened a new way of thinking for the development of modern vocational education in China. In December 1925, Huang Yanpei published *The grand vocational education theory to solicit comrades opinions in Education and Occupation*, and the grand vocational education theory was first mentioned in the article. He believed that vocational colleges, as a bridge between the education circle and the professional field, should strengthen communication with the professional field, and actively participate in social and economic development activities. [1] Meanwhile, vocational colleges should strive to explore cooperation with the professional field and adapt to the development trend of the social environment, so as to solve the livelihood problems of students. Vocational education should not only do their job well, but also have the highest level of enthusiasm to participate in and accept all aspects of society with the greatest tolerance, and maintain an inseparable relationship with the society. After proposing the theory of grand vocational education, Huang Yanpei published *Three determinations to run vocational education* in March 1927, where he pointed out that running vocational education should be determined to seek happiness for the majority of civilians and focus attention on the majority of civilians. Moreover, being determined and working down-to-earth are sensible while being overly ambitious and angling for compliments are inadvisable. In order to make a determination to carefully study the common sense of human beings and the common sense of things, we must cooperate with the civilian people and avoid engaging in idle theorizing. [2] Huang Yanpei believes that vocational education must be implemented in the principle of these three determinations, and the grand vocational education theory can be realized.

2.1. The Purpose of Education

In 1917, Huang Yanpei elaborated the purpose of vocational education in detail in the *Declaration of Chinese Vocational Education Society* on the occasion of the establishment of Chinese Vocational Education Society. The purpose of vocational education is to provide livelihoods for young people and provide talents for all sectors of society. [3] On May 5, 1918, the first annual meeting of the Chinese Vocational Education Society was held in Jiangsu, where Huang Yanpei mentioned in his speech that the purpose of vocational education is to prepare individuals for making a living and serving the society, and to prepare the world and the

country for increasing production capacity. Around the 1930s, with the increasingly serious social problems, Huang Yanpei revised the purpose of vocational education as seeking the development of personality, solving serious problems that cannot be delayed and the realization of people's livelihood, in other words, make the unemployed have jobs and make the employed enjoy their jobs. That is the ultimate goal of vocational education. [4] The training goal of vocational education for students is to make them become excellent talents in society. It can not only solve the problem of personal survival, but also contribute to social progress and national development, so as to truly realize their own value.

2.2. Educational Principles

Without society, there is no education. It is the same case with vocational education. Huang Yanpei is aware of the close relationship among vocational education, social production and life. The development of social economy will affect the implementation of vocational education. Therefore, it is necessary to change the situation that vocational schools are separated from the society. He proposed that the development of vocational education must follow the principle of socialization, which mainly includes four aspects. Firstly, the socialization of the aim of running a school, that is, occupation is the purpose and education is the method. Secondly, the socialization of training objectives. The training goal of vocational education for students is to make them become excellent talents in society, which can not only solve the problem of personal survival, but also contribute to social progress and national development, so as to truly realize their own value. Thirdly, the socialization of educational system. Vocational schools formulate corresponding training plans according to the actual situation and needs of the society, and students can choose the majors they want according to the economic development of the society at that time and their personal wishes. Lastly, the socialization of faculty. When hiring teachers, both the level of their professional knowledge and their ability of social activities should be assessed. In addition, make full use of the professional talents from all walks of life. Education cannot be a high-level and unreachable cause. The development of vocational education is not only the responsibility of vocational schools, but also needs the support from enterprises, governments and other sectors of the society. Vocational education should take the initiative to understand the needs of society and actively adapt to the requirements of society, so that vocational education can embark on the road of socialization. [5]

2.3. Curriculum Setting

Huang Yanpei believes that the first problem to be solved in vocational schools is take what kind of class. Compared with general education, there is a closer relationship between vocational education and social life, and the restriction and influence of social and economic development level on vocational education is more obvious. Huang Yanpei advocates conducting research through scientific methods and

setting up vocational education majors and courses according to the actual needs of society. Huang Yanpei fully considers the actual needs of the society in terms of professional selection, training methods, curriculum setting, teaching methods and textbook compilation of vocational education. On the basis of detailed social investigation, he strives to adjust measures to local conditions and regularly invites experts from all walks of life to consult social needs at any time. Besides, he solicits the reflection of students and the requirements for schools from all social circles in order to continuously improve. [6] Huang Yanpei also uses the method of foreign psychological measurement to improve the curriculum of vocational education, and teaches students in accordance with their aptitude, so that the curriculum provided by vocational education can match the students' own situation. Therefore, realizing their social value and self-value at the same time, achieving the unity of the two.

2.4. Teaching Methods

Huang Yanpei believes that vocational education should combine theory with practice, and pay equal attention to knowledge and skills. He advocates the teaching methods of "hand-brain combination" and "combination of practice and learning". The teaching notion of vocational education should combine theoretical knowledge with production practice, improve students' practical operation ability, and play an effective role in production, so as to truly realize the combination of hands and brains and the combination of doing and learning. He believes that the prevailing thoughts that "the scholars use mind instead of hands" and "the laborers use hands instead of mind" are completely wrong. [7] The ultimate goal of vocational education is to cultivate professional talents with rich theoretical knowledge and practical ability. Huang Yanpei advocates the learning method of "half work and half study". Students should reasonably allocate the time between theoretical study and practical operation, apply theoretical knowledge into practice, prove theoretical knowledge in practice, and truly realize the teaching method of integrating learning with doing in vocational education.

3. The Existing Problems in the Industry-University-Research Integration of Vocational Education

3.1. Insufficient Government Support

In recent years, in order to promote the industry-university-research integration of vocational education, our country has formulated relevant policies with guiding significance. However, there is still a lack of government initiative and participation to a certain degree in the actual process of establishing and perfecting the system of production. According to their own reform and development strategies and needs of talent training, different vocational colleges also provide certain policies as the institutional basis

for the integration of industry, university and research. However, the effectiveness of these policies and systems is limited to certain vocational college. They cannot constrain other vocational colleges and enterprises, and has no incentive effect on them. As an intermediate bridge, the government departments have failed to establish positive and effective communication channels and coordination methods between vocational colleges and enterprises, resulting in the problem of difficult connecting between vocational colleges and enterprises. [8] And it is also difficult to carry out the practice part of industry-university-research integration. At the same time, the integration of production, education and research in vocational education lacks the financial support of the government, which greatly reduces the enthusiasm of enterprises to provide internship positions for vocational colleges, and reduces the internship opportunities for vocational college students to practice in high-quality enterprises.

3.2. Weak Awareness of Industry-University-Research Integration

At present, the cooperation between vocational colleges and enterprises is mainly reflected in the establishment of internship bases between vocational colleges and enterprises to provide internship places for students. Enterprises carry out order-based talent training to facilitate the absorption of talents through the integration of production and education with vocational colleges. Such a cooperation model does not integrate and utilize the advantageous resources of both sides, and fails to achieve the integration of industry, university and research. Vocational colleges lack long-term school-running considerations and do not actively contact with the society. Their goal only rests on the enterprise where students can practice, obtaining a job after graduation, and the maintenance of relatively stable employment rate of the school. Similarly, enterprises just focus on the internship of students, and do not take the long-term cooperation with vocational education into consideration, failing to provide more effective support for the development of regional economy. [9]

3.3. Weak Construction of Teaching Staff

The teaching staff has always been a weak link in the development of the integration of production and education, and the rate of effect achievement is also low. At present, the supporting policies of vocational education teachers are not perfect. First, there is a lack of relevant system guarantee, such as how to calculate the workload of teachers in enterprise practice, how to subsidize class hours, and how to evaluate the effectiveness of work. A series of specific problems all need to be stipulated and guaranteed by relevant systems. Secondly, the enthusiasm of teachers to undertake the practical work of enterprises is not high, and they cannot voluntarily and actively complete the practical work, thus affecting the progress and effect of the practical work. Thirdly, teachers cannot balance the work between schools and enterprises. After going to the enterprise, teachers cannot undertake the

teaching work of the school, while teachers cannot carry out enterprise practice when teaching in school, which makes the teachers have no choice.

3.4. Single Form of Industry-University-Research Integration

At present, the industry-university-research cooperation in vocational education mainly adopts the teaching forms of cognition practice, production practice and post practice. Cognition practice allows students to visit the off-campus practice teaching base, observe the operation mode of different work, but have no opportunity to practice. Production practice enables students to verify whether the theoretical knowledge they have learned can be applied into practice. It is not really involved in productive work, and the time of production practice is relatively short, so students can not really grasp the key points. [10] Post practice allows students to truly engage in practical work in the enterprise, as an enterprise staff, and to complete the actual work of the enterprise on time with quality and quantity assured. However, only a small percent of students can really go to work, and participate in the practical work. The communication between vocational colleges and scientific research institutions is not deep enough, and the results of cooperation are superficial, which greatly affects the effectiveness and conversion rate of scientific research work in vocational colleges. [11]

4. The Enlightenment on the Industry-University-Research Integration of Vocational Education

4.1. Strengthen the Government's Policy Support for the Industry-University-Research Integration of Vocational Education

As the operator of market regulation and the bridge between vocational colleges and enterprises, the government should strengthen relevant policy support is the most critical measure to promote the integration of industry, education and research in vocational education. The government should actively improve the relevant policies, law and regulation system of vocational education, strengthen the supervision, management and support of the integration of industry, education and research in vocational education, and safeguard the legitimate rights and interests of vocational colleges, enterprises and scientific research institutions. When formulating relevant policies and regulations, the government should fully understand the development needs of the three parties to ensure that the policies and regulations formulated can be effectively implemented and play a role in promoting the development of industry-university-research integration in vocational education. Under the policy support of the government, vocational colleges, enterprises and scientific research institutions can establish hardware and software facilities such as practice bases and laboratories, fully realizing resource sharing. Moreover, all three should enhance

integration, improve communication efficiency and broaden cooperation channels. At the same time, the government should increase the financial investment in the integration of production, teaching and research of vocational education, creating a harmonious social and economic development environment. [12] In addition, the government should give full play to the subjective initiative of different subjects, providing more opportunities for the development of vocational education, and promoting in-depth cooperation among vocational colleges, enterprises and scientific research institutions. Finally, the cyclic development of the production, teaching and research system of vocational education can be promoted under the guarantee of specific and positive policies and systems.

4.2. Strengthen the Construction of Double-Professionally-Titled Teachers in Vocational Education

To ensure the further development of the integration of production, teaching and research in vocational education, it is indispensable to cultivate a double-professionally-titled teachers team with extensive theoretical knowledge and outstanding practical ability. In the process of training teachers, vocational colleges should pay attention to cooperate with enterprises and scientific research institutions. They can adopt the methods of "going out" and "coming in" to improve teachers' theoretical level and practical ability, so as to improve the teaching quality of vocational education. For young teachers who lack practical experience in production, they can be arranged to enter the enterprise to enhance their practical operation ability and technical application ability. Besides, vocational colleges provide teachers with the opportunity to study and train in enterprises and scientific research institutions so as to improve their practical ability and scientific research level. And vocational colleges should increase capital investment and set up special funds to improve teachers' enthusiasm for scientific research. At the same time, vocational colleges can hire excellent talents from all walks of life, such as technical experts and enterprise managers. [13] As part-time lecturers of professional courses and practical courses, they can apply advanced teaching methods into teaching, explain advanced ideas and technologies of enterprises to students, and share valuable experience from the front line of enterprises. Vocational colleges can also set up training courses for the integration of industry and education in schools, and invite experts to carry out relevant training for teachers. Therefore, the professional level and teaching quality of teachers in vocational colleges can be improved, and then the vocational education can be truly combined with scientific research and production practice.

4.3. Carry out Diversified Forms of Industry-University-Research Integration in Vocational Education

The diversified form of industry-university-research

integration of vocational education is more conducive to achieving the goal of collaborative education among vocational colleges, enterprises and scientific research institutions. First of all, the government takes the lead in building and optimizing relevant platforms to facilitate the in-depth exchange of information about the integration of production, teaching and research in vocational education. Vocational colleges, enterprises and scientific research institutions can log on to the platform at any time to update information on talents, technology and scientific research. Vocational colleges can analyze the cultivation situation of students through the feedback data of the platform and carry out relevant teaching reforms, so that students can better adapt to the needs of society and enterprises and vocational colleges can better carry out the education work of integration of production, teaching and research. Secondly, vocational colleges, enterprises and scientific research institutions cooperate to build teaching and training bases and other related hardware facilities. Vocational colleges provide places while enterprises provide financial and technical support. Besides, scientific research institutions provide projects and guidance, and build a teaching and training base integrating teaching practice and professional training. Finally, vocational colleges can build a practice platform, introduce innovation and entrepreneurship projects, and make full use of various teaching resources, further improving the construction of industry-university-research practice bases. Meanwhile, vocational colleges should encourage and support teachers and students to actively participate in various types of innovation and entrepreneurship training projects at all levels, fully mobilizing students' enthusiasm and participation in learning. [14] And then cooperate with relevant enterprises, using the scientific research results obtained by teachers and students participating in various projects. In the context of industry-university-research integration, the transformation of achievements will be completed and the transformation efficiency will be improved, which can be applied to the development process of enterprises and society.

4.4. Perfect the Curriculum System of Industry-University-Research Integration in Vocational Education

Students in vocational colleges have their own unique characteristics, so colleges should teach students in accordance with their aptitude, stick to people-orientation, and scientifically set up a curriculum system that adapts to the characteristics of students in vocational colleges. Vocational colleges can adopt the flexible credit system to break the restrictions of the professions, so that students can give full play to their own advantages and efficiently combine the theoretical knowledge taught in the classroom with the production practice projects of enterprises. In this way, the level of theory and practice of students will be improved. At the same time, vocational colleges should also strengthen the development of online education resources such as high-quality open courses, and take full advantage of online education resources in the teaching process, actively exploring

mixed teaching mechanisms online and offline. [15] Vocational colleges should add more elective courses and encourage the establishment of experimental and practical courses, so as to stimulate students' interest in professional field, improve students' practical ability and further stimulate students' innovative consciousness.

5. Conclusion

Vocational colleges should take a long-term view and constantly reform and update the current concept of vocational education. The object of vocational education not only includes students in vocational schools, but also people from all walks of life. Vocational education is not only the training education before entering the workplace, but also the training promotion after entering the workplace. Only by constantly exploring the depth and breadth of tripartite cooperation among vocational colleges, enterprises and scientific research institutions can we powerfully promote the reform and development of the integration mechanism of production, teaching and research in vocational education.

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