

Research on the Training System of Innovative Type Technical and Skilled Talents in Higher Vocational Education under Made-in-China 2025

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Keywords: Made-in-China 2025, Higher vocational education, Innovative type technical and skilled talents, Training system.

Abstract. To build a great modern socialist country and realize national rejuvenation, "Made-in-China 2025" plan points out the direction, and the corresponding reforms are urgently needed for higher vocational education which training a large number of innovative type technical and skilled talents. This article reviews the previous institutional system exploration of higher vocational education training technical and skilled talents in our country, combs the current institutional obstacles restricting the cultivation of innovative type technical and skilled talents, and gives reform direction to improve institutional system of higher vocational education talents training.

Introduction

Talents training system is a system in which the educational administrative department manages all kinds of talents training subjects in accordance with the basic laws of national education. Talent training system is not only an important part of vocational education system, but also the key to the reform of vocational education system. With the rapid development of science, technology and social economy, the Chinese government put forward the grand plan of "Made-in-China 2025" in 2015. Its overall goal is: by 2050, China's manufacturing industry comprehensive strength into the ranks of the world's manufacturing powers^[1]. Under the background of "Made-in-China 2025", the production mode of manufacturing industry will undergo a new change^[2]. A large number of innovative type technical and skilled talents are needed. It is of great significance to review the development process of talent cultivation system, to reflect on its existing problems, and to establish the direction of future reform.

The Development Course of Talent Training System in Higher Vocational Education in China

Comprehensive Recovery Period of Higher Vocational Education: 1978-1984

In 1978, The work focus of China become socialist modernization building which drive the comprehensive recovery and development of higher vocational education in China. In October 1977, the work of recruit students of higher learning resumed in an all-round way. With the further promotion of reform and opening up, in 1980, the former State Education Commission approved the establishment of 13 vocational colleges, marking the formal birth of China's higher vocational colleges. In 1982, the government clearly proposed that higher vocational education should be developed rapidly. Therefore, the government approved the establishment of 33 vocational colleges in 1983. According to statistics, from 1980 to 1984, a total of 82 short-term vocational colleges were set up in China, students number reach to 20,000^[3].

Preliminary Stage of Higher Vocational Education Reform: 1985-1998

A. Establishment of Higher Vocational Education System. In 1985, < the Decision of the Central Committee of the Communist Party of China on the Reform of the Educational System > first put forward that "actively develop higher vocational and technical colleges and. In 1986, the national working conference on vocational and technical education first put forward the term "higher

vocational education" from the official point of view, stipulating that higher vocational schools, some radio and television universities and higher academy should belong to vocational higher education. In 1994, the State Council issued <the Opinions on the Implementation of the Outline of China's Educational Reform and Development>, which further clarified the main position of higher specialized education, vocational colleges and adult colleges. So far, China's higher vocational education system has gradually improved.

B. The establishment of the legal status of higher vocational education. <The Vocational Education Law of the People's Republic of China> promulgated in May 1996 stipulates that "Higher vocational education is implemented by higher vocational schools or by ordinary institutions of higher learning". This clarifies the legal status of higher vocational education. In September 1998, the State promulgated <the Higher Education Law of the People's Republic of China>. Higher vocational education is an independent type of higher education structure in China in the form of law^[4].

Deepening Stage of Higher Vocational Education Reform: 1999-present

In January 1999, the Ministry of Education and the State Planning Commission jointly issued <The Implementation Opinions of Trial Holding Higher Vocational and Technical Education in Accordance with the New Management Model and Operating Mechanism>, proposing to adjust the structure of higher education, expand the enrollment scale of higher education, and mainly use the incremental part of enrollment plan for higher vocational education. According to statistics, in 2005, the number of higher vocational colleges in China reached 1091^[5].

In 2006, <Some Opinions of the Ministry of Education on Improving the Teaching Quality of Higher Vocational Education in an All-round Way> put forward, marking the development from the expansion of scale turn to the connotative building. In 2006, the government issued <Opinions on Implementing the National Construction Plan of Demonstrative Higher Vocational Colleges to Accelerate the Reform and Development of Vocational Education>. In 2010, the government issued <The Notice on Further Promoting the Implementation of the National Model Higher Vocational College Construction Plan>. In 2015, the government issued <The Action Plan for Innovation and Development of Higher Vocational Education (2015-2018)>. The "Three Programs" are of great significance for improving the quality of higher vocational education and promoting the development of higher vocational education towards high quality^[6-9].

The Problems Existing in the Training System of Innovative Type Technical and Skilled Talents in Higher Vocational Education in China

Government Responsibilities Are Not in Place

First, the policy is general and incompatible. The state requires local governments to develop vocational education. Although the government has issued a number of policies to promote industrial enterprises to organize and participate in vocational education, most of them are guiding opinions, and the implementation of the policies is not in place. Especially in terms of financial support, the tax reduction policy procedures currently implemented are complex and have little attraction for enterprises. In addition, China has not yet formed a policy evaluation mechanism, not only the lack of the theory of policy evaluation and main body of practice, but also the lack of scientific policy evaluation standards and technical methods. Second, laws and regulations are imperfect. The responsibilities demands of the current vocational education laws educational administrative departments are "Overall Planning", "Macro Management", "Supervision and Evaluation" and so on, which are not specific and clear enough, and at the same time lack the guarantee of law enforcement. The description of the responsibilities of industry enterprises is also vague, and the rights, obligations and measures for industry enterprises are not clearly regulated. Third, educational expenditure is too little. In terms of total financial input, in 2017, China's higher education funds totaled 1011 billion yuan, of which the total investment in higher vocational education accounted for only 18%, which is not commensurate with the scale of higher vocational education.

The Role of Industry Guidance in Higher Vocational Education Is Not Strong

First, the rights and responsibilities are not clear. From the content of relevant laws and policy documents, it is not clear about the rights and responsibilities of the industry, nor does it construct the system and mechanism which leads to the policy of industry participation in vocational education can not be implemented. With the reform and opening up and system reform, the industry no longer has the administrative functions of colleges and special school, coupled with its own imperfect organization, lack of overall planning and industry norms and other issues, the coordination function between vocational colleges and their enterprises is limited. Second, the guiding role is inadequate. The industry seldom sets up independent departments to manage vocational education, which is not enough to guide enterprises to organize vocational education.

The Enthusiasm of Enterprises to Participate in Higher Vocational Education Is Not High

First, there is insufficient motivation for enterprises to hold higher vocational education.^[10] At present, vocational colleges run by enterprises in China are facing the dual problems of "identity" and "capital". In terms of identity, running schools by enterprises belongs to social forces, and their legal status is not recognized. They can neither enjoy state financial funds nor apply the charging policy of private education. In terms of funds, the investment of enterprises in vocational education can not bring direct economic returns, which reduces the enthusiasm of enterprises to invest. Second, the degree of enterprises participation in higher vocational education is low. From the perspective of enterprises, enterprises participation in higher vocational education has little effect on their own production and operation, so it is not necessary to set up higher vocational schools. From the school's point of view, the homogenization of vocational colleges is not conducive to enterprise participation. In order to solve the problem of running school funds and pursuing the enrollment scale, higher vocational colleges have the same professional settings, which are not matched with the needs and resources of enterprises.

The Vitality of Running a School Needs to Be Further Stimulated

One is in the management system. Although the joint meeting system of higher vocational education has been established, the institutional contradictions of fragmentation, multi-head management and multi-door politics have not been fundamentally solved, resulting in resource decentralization and low efficiency.^[11] Second, the autonomy of running a school. The decentralization of autonomy in higher vocational colleges running is not sufficient. The government has overstepped the micro-links of enrollment, personnel training mode, curriculum setting, specialty setting, teacher management and fund utilization, seriously affecting the efficiency and enthusiasm of colleges running.^[12] Third, the internal structure of higher vocational colleges. The system of modern higher vocational schools is not perfect, the regulations of vocational colleges are not perfect, and the board of directors, councils and other management bodies, which are participated by the relevant stakeholders of the schools, have not played a full role, resulting in the weak ability of independent running schools in higher vocational colleges. Fourth, the school-enterprise cooperation. The state-owned enterprises and social forces lack detailed laws and policies to run higher vocational colleges; the boundaries of rights, obligations and responsibilities of joint-stock ownership enterprises to run school are not very clear; the lack of long-term mechanism and stable and effective supporting policies for school-enterprise cooperation makes it difficult to effectively solve the current situation of "hot and cold" in school-enterprise cooperation.

The Level of Teachers Needs to Be Further Improved

First, the quantity is insufficient. The growth of professional teachers far behind the growth of students, and the lack of professional teachers is serious. Second, the structure is unreasonable. The proportion of "double-qualified" teachers is less than 80% of the professional teachers stipulated by the state. The age structure, educational background structure, title structure and part-time teachers are unreasonable. Third, the professional ability is slightly weak. Teachers have not accumulated enough experience in the front-line practice of enterprise production, and there is a big gap between

professional teaching ability and the requirements of technological development and industrial upgrading. Fourth, it is difficult to introduce talents from enterprises. Due to the restriction of personnel and financial system, it is difficult for some enterprise talents with rich practical experience to flow to schools. Because of the lack of stable salary and welfare protection, it is difficult for external teachers to calm down and teach. Fifth, the criteria for identifying "double-qualified" teachers are confused. Some of the "double-qualified" teachers in higher vocational colleges have the same evaluation as ordinary teachers. Some even directly equate "double- certificate" teachers with "double-qualified" teachers, and seldom evaluate them from professional ability and practical operation skills.

The Reform Orientation of Innovative Type Technical and Skilled Talents Training System in Higher Vocational Education.

The State Promotes the Reform of Talents Training System According to Law

We should construct the legal system of higher vocational education, speed up the legalization of vocational education, and promote the diversification of higher vocational education in accordance with the law.

①Firstly, the rights and responsibilities of the government and its functional departments for higher vocational education are clearly defined in the laws and regulations, and relevant rules and implementation measures should be promulgated. Through laws and regulations to improve the employment access system and the recognition of vocational certificates, so create a fair competitive environment for skilled talents. ②Secondly, clarify the position and responsibility of the industry in organizing higher vocational education. When amending the <Vocational Education Law>, we should clarify the position, rights, obligations and means of the industry in organizing and participating in higher vocational education. ③Finally, we should promote the diversification of enterprises school-running funds. In the <Vocational Education Law>, it is stipulated that the education recipients, enterprises, industries and local governments should share the investment in vocational education.

The Government Strengthens the Construction of Talents Training Mechanism

①We should improve the government's investment mechanism in higher vocational education. Firstly, according to the financial system of our country and the financial revenue of local governments, the responsibility and investment proportion of higher vocational education should be clearly divided. Secondly, we should formulate investment criteria for Higher Vocational education, reform the allocation methods, and replace special funds by allocating students' per capita funds to higher vocational schools. Thirdly, to determine the growth ratio of vocational education investment, the growth of vocational education students' per capita expenditure and per capita public expenditure should not be lower than local economic growth. Finally, the supervision mechanism of vocational education investment should be established. ②Improve the management system of vocational education. First of all, the central government should sort out the current policies related to vocational education and straighten out the contradictions between the policies issued by different functional departments. Secondly, give full play to the government's macro-management functions, focusing on improving the relevant systems and mechanisms of vocational education, and developing and formulating the relevant standard system. Thirdly, we should establish the responsibility mechanism of all kinds of subjects at all levels and strengthen the supervision of the implementation degree of school-running responsibility and the execution ability of local governments. Finally, by introducing market mechanism, we encourage competition among higher vocational education school-running institutions in order to integrate and optimize higher vocational education resources. ③Construct the government entrustment mechanism. Through the establishment of commission mechanism between

government departments and industry organizations, the functions and responsibilities of government and industry are clearly divided, and the operation mechanism of both sides is improved.

To Construct the Realization Mechanism of Enterprises Participation in Higher Vocational Education

①Higher vocational colleges run by enterprises should enjoy the same policies as public vocational colleges in such aspects as supportive financial policies, student allotment per capita, fee standards and student aid mechanism. Government departments should help teachers in enterprises run higher vocational colleges to break through their identity restrictions in order to obtain qualifications of teachers and enjoy the treatment of public teachers. Higher vocational colleges run by enterprises are allowed to make loans and accept social donations. Higher vocational colleges run by enterprises are allowed to calculate independently in accordance with the <Accounting System of Colleges and Universities>. ②Provide funds for enterprises to organize vocational education. The provincial government should set up special funds as the per capita funds of enterprises-run higher vocational colleges, which can be subsidized by the central government if the local finance is really very difficult. The education surcharge paid by enterprises can also be returned to higher vocational colleges of enterprises. The insufficient part of the education surcharge is invested by local finance. Special funds can also be set up to support the construction of teachers and training bases in enterprises' higher vocational schools.③Support the sustainable development of enterprise vocational colleges. The government should provide necessary help for the sustainable development of higher vocational colleges which enterprises are unable to invest or are separated by enterprises in the process of restructuring or listing. Local governments with qualifications can convert local Enterprises-run colleges and universities into joint government-enterprise schools. Daily funds are allocated by the government. Fixed assets already invested by enterprises can be invested into shares. It can also be led by industry associations to form joint-stock vocational education groups from vocational schools separated from enterprises.

Fully Stimulate the Vitality of Higher Vocational Colleges

Deepening the reform of the system and mechanism of higher vocational colleges needs to start from two aspects: innovating the external system and reforming the internal management mechanism.①To coordinate the management of higher vocational education and straighten out the management system of higher vocational education. We should coordinate the responsibilities of relevant departments such as education, finance and personnel in the development of higher vocational education.②We should deepen the reform of "simplifying administration and decentralizing power" in vocational education and clarify the relationship among government, universities and society. The responsibilities and powers of the government in the management of higher vocational education should be clarified. The autonomy of higher vocational colleges in running schools should be implemented in the aspects of fund utilization, self-enrollment, teacher recruitment, staffing and specialty setting. ③We should improve the governance structure of colleges and universities, implement the constitutional construction of Higher Vocational colleges, and adhere to and improve the principal responsibility system. We should give full play to the governing role of academic committees, faculty congresses, councils and boards of directors. ④Revising the Vocational Education Law, stipulating the rights and responsibilities of enterprises and higher vocational colleges to cooperate in running schools, and thoroughly removing obstacles of cooperation.

Build a High-level "Double-qualified" Teaching Team

①In order to ensure the number and structure of professional teachers, we should and establish a dynamic adjustment mechanism for teachers' staffing. ②Improving the recruitment system of teachers, support qualified colleges to recruit high-level or high-skilled talents with business experience from society and enterprises, and give higher vocational college sufficient power to recruit teachers independently. ③The government should supporting higher vocational college to

employ part-time teachers independently in accordance with relevant regulations, overall planning the budget of part-time teachers, improving the mechanism of introducing part-time teachers, establishing a salary system for part-time professional teachers, and thoroughly guaranteeing the benefits and salaries of part-time teachers. ④To formulate the standards for full-time teachers' employment and professional title evaluation, and to highlight the professional, technical, professional and practical characteristics of professional teachers. ⑤Promote the co-construction of teacher training bases between schools and enterprises, and implement the system of regular practice and exchange of higher vocational college teachers to enterprises in order to improve teachers' professional teaching ability and practical ability.

Optimize the Development Environment of Higher Vocational Education

①Strengthening legal and policy guarantees. For example, under the guidance of the Constitution, we should revise the interrelated Law, in overall planning, add appropriate clauses which reflecting the characteristics of higher vocational education. ②To improve the treatment of technical and skilled talents by deepening the reform of income distribution, strengthening the proportion of value of technical and skills in wage income distribution, and urging enterprises to explore the establishment of wage growth mechanism and long-term incentive mechanism for technical and skilled workers. ③To guide public opinion by eliminating the institutional barriers that affect equal employment, increasing the incentives for technical and skilled talents with outstanding achievements in such fields as technological innovation, technological inventions, competition of skills and so on, and form a system, and vigorously publicizing the advanced deeds and important contributions of technical and skilled talents. ④To optimize resource allocation. Strengthen the investment of funds in higher vocational education.

Acknowledgement

This work was financially supported by the Tianjin education science “Thirteen-Five” planning project (project Number: VE3131).

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