

Enlightenment of the Talent Training Mode of Japan's Colleges and Universities to China's five-year Higher Vocational Education

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Abstract: Since Jimei navigation College of Fujian Province started five-year junior college education in 1984, five-year higher vocational education has become one of the important forms of Higher Vocational Education in China. In the 1960s, with the rapid development of Japan's economy, there was a shortage of technical personnel. In order to cultivate a large number of technical personnel in a short period of time, Japan's specialized colleges and universities recruited junior high school graduates, studied in school for five years, and obtained an associate's degree after graduation, which provided a large number of technical personnel for the development of Japan's basic industry manufacturing industry. By combing the development process of Japan's colleges and universities, this paper studies Japan's colleges and universities from the aspects of school running subjects, talent training objectives, training methods and evaluation methods. It can provide the basis and implementation methods for China to better promote the convergence of secondary and higher vocational education, strengthen the training of secondary and higher vocational education, and provide theoretical basis and practical experience for improving the quality of five-year higher vocational education.

Keywords: Japan's specialized higher education institutions; Talent training mode; Experience

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On April 10, 1984, the Ministry of education put forward in "several opinions on the adjustment

and reform of higher engineering education levels, specifications and length of study" that "we can try to recruit students from junior middle school graduates with a length of study of five years^[1]." This document is the starting point of Five-year Higher Vocational Education in China. The so-called five-year higher vocational education, whose enrollment object is junior high school graduates, mainly cultivates high-quality skilled talents different from undergraduate, which is a five-year higher vocational education with the convergence of secondary and higher vocational education. At present, there are mainly three forms in our country: five-year consistent system, 2 + 3 school year system and 3 + 2 school year system. In June 2019, Zhejiang Province issued the guiding opinions of Zhejiang Provincial Department of education on promoting the integration of secondary and higher vocational five-year vocational education, which clearly pointed out that promoting the convergence of secondary and higher vocational education and strengthening the training of secondary and higher vocational education is an important way to accelerate the construction of modern vocational education system and adapt to the industrial transformation and upgrading and structural adjustment^[2]. In July 2020, Jiangsu Provincial Department of Education issued "opinions on promoting the high-quality development of Five-year Higher Vocational Education", and proposed to build a number of five-year higher vocational education units with comparative advantages in the country by the end of the "14th five year plan", and build about 20 five-year higher vocational education units in the fields of preschool education, nursing, modern service industry, modern agriculture, advanced manufacturing, etc The goal

of running a school is to set up a "demonstrative professional cluster"^[3]. The introduction of the above two documents once again confirms the status of Five-year Higher Vocational Education in China's modern vocational education system, and also shows that the development direction of China's five-year higher vocational education has changed from the rise in quantity to the development in connotation. How to run the five-year higher vocational education that the people are satisfied with is an important problem that we are about to face. Throughout the world, we can find that the enrollment objects and training objectives of Japanese and Chinese five-year higher vocational colleges are basically the same. By combing the development process of Japanese Colleges and their talent training mode, we can provide some experience for Chinese five-year higher vocational education.

1 The development course of Japan's colleges and Universities

Before the Second World War, Japan's industrial schools mainly trained middle-level technical personnel. After the Second World War, Japan carried out the education system of "6334" after the education reform. The industrial schools were upgraded to universities and mainly transported high-level technical personnel to the society. This change resulted in the dilemma that the institutions training middle-level technical personnel were in a blank state. Japan's "6334" monorail school system has changed the shortcomings of the past education system to a certain extent, but there are many places that are not in line with the national

conditions of Japan at that time. In order to establish an education system in line with social reality, Japan's education reform has not stopped. In 1954, the Central Education Council of Japan proposed: It is necessary to "recognize the new school organization including short-term university curriculum and high school curriculum". In this context, the focus of Japan's post-war education reform is whether it is necessary to create a five-year or six-year vocational education system. In December 1956, the Education Committee of the Federation of Japanese economic organizations put forward in the report "opinions on technical education to meet the requirements of the new era": In 1959, other economic organizations in Japan also put forward corresponding suggestions on the proposal of combining two-year short-term universities with high schools and establishing five-year specialized universities. In 1960, the cabinet meeting of Japan adopted the national income doubling plan, and the key problem to realize the plan is to ensure the improvement of the quantity and quality of scientific and technical personnel and skilled personnel. Under the background of the plan, Japanese Colleges and universities came into being. In 1961, Japan revised the "school education law". In 1962, Japan established the first batch of colleges and universities. By 2006, there were 63 colleges and universities in Japan, including 55 national colleges, 5 public colleges and 3 private colleges. By 2017, the number of colleges and universities had dropped to 57, including 51 national colleges, 3 public colleges and 3 private colleges. The number of students was about 57601. By 2018, the number of 57 colleges and universities had increased No change.

Table 1. Information on the Act of National Specialized Institutions of Higher Education with Independent Administrative Legal Person, 2003

Year	Set quantity	Annulment quantity	Proportion of state schools
1962	National 12		62.30%
	Public 2	Private 1	
	Private 5		
1963	National 12		70.50%
	Public 2		
	Private 2		
1964	National 12		78.20%
1965	National 7		79.60%
	Private 1		
1967	National 6		81.60%
1971	National 3		86.60%
1974	National 2		83.07%
1977		Private 1	84.37%
1978		Private 1	85.71%
1991	Public 1	Private 1	85.71%
2002	National 1		85.93%

Since 1991, Japanese Colleges and universities have been able to officially award associate degree to their graduates. With the continuous development of higher education, it has gradually expanded from manufacturing and industry related majors to business, service and other related majors. In addition, the college has also set up "specialized subjects" to provide college graduates with the opportunity to further their studies and train them into high-level technical personnel. By 2006, 54 colleges have set up specialized subjects. Students who have successfully completed their specialized subjects can apply for bachelor's degree.

At present, the expectation and demand of Japanese enterprises for college graduates are still growing, but the realistic problems of aging population and national finance make the development environment of college education very grim. On the whole, professional colleges and universities have entered the stage from the development of quantity to the improvement of quality.

2 The talent training mode of Japanese Colleges and Universities

2.1 Subject of running a school

After World War II, in order to make up for the lack of government power in running schools, the Japanese government advocated the participation of non-governmental forces in higher vocational education. Therefore, there are two types of Higher Vocational Education in Japan: government and private. Japan's colleges and universities mainly train front-line technical personnel, and the education content takes the engineering technology of manufacturing industry as the core. The educational resources and costs required by this kind of education are hard to bear by non-governmental forces, and the government created it for the needs of the country's economic development. As a kind of higher vocational education, from the beginning, public schools took the lead. In 1970, the proportion of national higher vocational schools in Industrial Higher Vocational Schools reached 81.7%. At present, the Japanese government is an important school running body of higher vocational schools.

2.2 Training objectives

The fundamental reason for the establishment of

higher vocational colleges is to meet the demand of Japanese manufacturing industry for industrial talents. Therefore, the basic feature of higher vocational colleges is that its talent training objectives are close to the talent demand of national and local industries. At the beginning, only mechanical and electrical, chemical engineering and civil engineering majors were set up in Colleges and universities, mainly to train middle and senior technical personnel of engineering. After the 1990s, with the continuous change of social demand for talents, the scope of majors in Colleges and universities gradually expanded, and other majors such as business information, information science and so on were added. From the professional perspective of training objectives, it covers more and more majors and even industries. From the perspective of talent training objectives, the first graduates of higher vocational colleges are basically directly into jobs, and their employment rate has always been in an ideal state. From the 1990s, on the one hand, it was affected by the increasing demand of Japanese industrial upgrading for talents, on the other hand, during this period, Japan began to enter the stage of fewer children, resulting in a series of practical situations, such as higher education transfer and fewer students. College graduates changed the development plan of employment after graduation, and some colleges broke through the original direction of running a school and actively built a diversified school system. Since 1992, some colleges and universities have set up "specialized subjects". After completing the study in the colleges and universities, the graduates can continue to study in specialized subjects (equivalent to the undergraduate level). The cultivation of talents in specialized subjects puts more emphasis on "profound" professional knowledge and skills. The cultivation of "practical and creative" ability, and some engineering departments of comprehensive universities recruit students for college graduates^[4]. so far, the talent training goal of college is to "impart in-depth professional knowledge, educate the necessary professional ability" as the learning purpose, and its employment rate is high. Therefore, the talent training goal of college mainly has three characteristics: professionalism, practicality and development.

2.3 Training mode

Under the background of that time, Japanese higher

specialized schools mainly opened engineering majors. Taking the electrical engineering discipline of Nagaoka Institute of technology as an example, the curriculum types of this major are mainly divided into general courses and professional courses. The general courses mainly include Mandarin, history, modern society, sports and other courses, while the professional courses mainly include creative technology practice, electrical and electronic system engineering experiment, electrical and electronic system engineering foundation, electrical and electronic theory, electrical and electronic technology. The curriculum of electrical engineering is also divided into compulsory courses and elective courses. In the whole curriculum, there are a large proportion of practical courses. Every year, there are practical courses in the compulsory courses. To meet the graduation requirements, students need to meet the credits of 36.5 practical courses, accounting for 51.1% of the credits of professional compulsory courses. It can be seen that Japan has a high proportion of practical courses. In addition, Japanese Colleges and universities also set up special industry university research cooperation institutions to cultivate talents. Taking Nagaoka Institute of technology as an example, regional science and technology center was set up in 2002 as a technology institution of industry university research cooperation, aiming at promoting the cooperation with industry and industry. In addition, the university has signed agreements on training industrial talents with the Niigata industrial creation organization Nico technology market. Through the cooperation of production, study and research, Japanese Colleges and universities are closely connected with Japanese small and medium-sized enterprises. On the one hand, it is conducive to organizing students' practice, on the other hand, it is also conducive to teachers' entering enterprises to exercise, improve practical experience, and better classroom teaching.

2.4 Evaluation method

In order to monitor and manage the teaching quality and level of colleges and universities, the Ministry of education, culture, education, sports, etc. stipulates that within seven years, Japanese Specialized Colleges and universities must accept the evaluation from the third party, such as Japanese higher education evaluation institution, university reform,

support and degree awarding institution, and Japanese engineering education accreditation institution. Through the application of NIAD-UE and JABEE evaluation certification, we can continuously improve the level of education, teaching and management.

Taking NIAD-UE as an example, it carries out a comprehensive and multi-level evaluation of Japanese Colleges and universities, promotes the continuous improvement of educational quality and level of Japanese Colleges and universities, and gradually becomes the main way of evaluation of Japanese Colleges and universities. NIAD-UE is mainly based on the benchmark of colleges and universities, centered on educational activities, aimed at promoting the personality development of colleges and universities, based on the self-evaluation of colleges and universities, adopting paired evaluation, and adhering to the six evaluation principles of transparency and openness. The key stage of the evaluation is the second half of the implementation of the evaluation. First, the evaluation department will conduct a written investigation to confirm the purpose of the University. According to the self-evaluation statement submitted by the University, it will analyze the satisfaction degree of 11 evaluation benchmarks and two selective evaluation benchmarks, and make a written investigation statement. The evaluation department will entrust colleges and universities to select the interviewees, inform the interviewees four weeks before the interview, and send written survey results, confirmation items during the interview and other survey contents to colleges and universities. Secondly, the evaluation department will conduct an interview and survey. According to the written survey, it will focus on other matters that can not be determined, mainly including 1) interview with the person in charge of the school; 2) interview with teaching staff and logistics personnel; 3) interview with students and graduates; 4) education on-site inspection; 5) survey of learning environment; 6) supplementary collection according to the data. Finally, the evaluation department will analyze the results of the written investigation and interview, make a draft of the evaluation results and submit it to the evaluation committee. The evaluation committee will inform the higher specialized institutions of the evaluation results and set up an opinion Appeal Committee. The higher specialized institutions will discuss and analyze the evaluation results and make

an opinion appeal, but the evaluation committee has the final decision-making power.

3 Enlightenment to five year Higher Vocational Education in China

3.1 Actively build the overpass of "from college to undergraduate" talent training, and build a modern vocational education system

Japan's higher education institutions have set up a University of technology and science to build a technical education system of "junior college + undergraduate + graduate", so as to create more profound and developmental learning opportunities for the graduates of higher education institutions. In the process of building the overpass, we should make clear the training goal and orientation, formulate a reasonable independent enrollment plan, improve the entrance examination and admission methods, and make the "3 + 2" segmented training compatible with the "3 + 2" segmented training, so as to build a modern vocational education system.

3.2 Encourage school enterprise cooperation to set up "enterprise College" and promote modern apprenticeship in an all-round way

In the process of personnel training, Japanese Colleges and universities not only attach great importance to the study of internship and practical courses, but also set up special production, teaching and research institutions. These measures have strengthened the close connection between talent training and industries and enterprises to a certain extent. Since 2014, the implementation of modern apprenticeship in China has achieved certain results in deepening the integration of industry and education and promoting school enterprise cooperation. However, there are still some problems, such as the lack of double subjects, the absence of the dominant position of enterprises in personnel training, and the obvious phenomenon of enterprises participating in school running and assisting students. How to further strengthen the connection between schools and enterprises and construct "community of destiny" is an important problem in the development of Vocational Education in China. To encourage school enterprise cooperation to set up enterprise college and fully implement modern apprenticeship, we can rely on the leading enterprises in the industry to

carry out continuous and in-depth cooperation and exchange in the aspects of training concept, operation mechanism, development mode, management system, teacher training and practical training base, etc., which is aimed at improving enterprise production capacity, economic benefits and talent training quality of higher vocational colleges. It is an integration of industry, University and research with mutual benefit and common development.

3.3 Comprehensively evaluate and publicize the conditions, status and quality of Five-year Higher Vocational Talents Training

Under the unified regulations of the Ministry of education, culture, sports, and culture, Japanese Colleges and universities need to accept the third-party evaluation of relevant institutions within a certain period of time. The evaluation here is not only the quality of talent cultivation, but also the elements covering the whole process of talent cultivation, including teaching, teaching and research, teachers and hardware facilities. The final evaluation results are published to the whole society. There are various forms of Five-year Higher Vocational Education in our country. Secondary and higher vocational education are in different schools, so it is difficult to evaluate. We can use the method of regular evaluation to evaluate the conditions, status and quality of five-year higher vocational education, guide and urge the main bodies and units to follow the law of education, strengthen infrastructure construction, improve school conditions, standardize school behavior and optimize internal management. Strengthen the connotation construction, improve the quality of personnel training, and promote the healthy and sustainable development of five-year higher vocational education. The final evaluation results are arranged according to the grade and published to the whole society; For the school running units that are not satisfied with the continuous training of five-year higher vocational talents, the entry and exit system should be introduced to run high-quality five-year higher vocational colleges.

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