

Current Situation and Analysis of “Technical and Vocational” Education in Taiwan

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Abstract—The higher technical and vocational education in Taiwan has experienced many important milestones, and the achievement of higher “technical and vocational” education reform is especially obvious in the recent 20 years since the middle 1990s. However, there are still dilemmas while obtaining considerable achievements.

Keywords—*Taiwan; higher technical and vocational education; current situation; existing problems*

I. INTRODUCTION

A. Economic Factors

The technical and vocational reform always relates to the social economic development closely, and the success of technical and vocational education plays a role of engine in economic construction growth. In turn, the economic development is always one of the important factors promoting technical and vocational education reform. Different economic development stages have different requirements for the standard and level of talents cultivated by technical and vocational education. The level of talent demand by economic development is continuously improved, so as to mobilize the technical and vocational education development.

Economic development provides funds guarantee to the reform of higher technical and vocational education. Taiwan pays great attention to the investment of technical and vocational education while vigorously developing its economy, to raise education funds through multiple channels. Over the several decades, the absolute quantity and relative quantity of investment in education by the authority present a rising trend, including the investment in technical and vocational education. And the percentage of educational funds in the budgets of governments at all level in legal form. The economic development makes the private technical and vocational education prevail, and the private schools of technical and vocational colleges in Taiwan constitute a large portion. Economic development provides funds guarantee for the improvement of school-running condition of technical and vocational education, the cultivation of teachers, and especially for the practice teaching of technical and vocational education that requires large amount of capital investment.

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B. Policy Factors

Decision making by competent authorities is one of the important factors of the technical and vocational development in Taiwan, China. On the one hand, establish and revise laws and regulations. Now the relevant regulations of technical and vocational education in Taiwan have quite complete categories, including the “Law of Junior College”, “Measures for the Implementation of Construction and Education Cooperation”, “Vocational School Law”, “Work Outline for Adult Education” and so on. In addition, private vocational education prevails in Taiwan, so the “Private School Law” and “Incentive Methods for Private School” also have the nature of laws and regulations for technical and vocational education. On the other hand, a series of effective reforms are performed against the school system and ways of enroll, from setting large number of junior schools, building the first technical college in Taiwan, to the permission of restructuring junior school to vocational college, so as to build the “second highway” for education in Taiwan, and to the transformation of vocational college to university of science and technology as well as the breakthrough of traditional national examination. Conduct the multiple enrollment reform, abolish various systems for national examination and implement the system of separation for examination and enrollment. The development policy of higher technical and vocational education has been a part of the general economic construction policy in Taiwan.

II. ACHIEVEMENTS OF THE “TECHNICAL AND VOCATIONAL” EDUCATION DEVELOPMENT IN TAIWAN

A. System for Higher Technical and Vocational Education Tends to Be More Complete

The system reform is performed for higher technical and vocational education in Taiwan. On the one hand, it is to coordinate with the reform of demand for talents by social progress, industry upgrade and economic development. On the other hand, it is to satisfy the general public’s demand for higher education and the pursuit for degree and diploma. The system for higher technical and vocational education is gradually improved through the restructuring processes such as higher vocational school upgrading to junior school, junior school upgrading to college of technology, and college of technology renamed as University of Science and Technology. The purpose of higher technical and vocational education is to

cooperate with social economic development and cultivate advanced practical personnel, which is the important way for higher education development in Taiwan in recent 20 years. The improvement of higher technical and vocational education system facilitates the establishment of technical and vocational education system in Taiwan, smoothes the paths for further studies for students of technical and vocational education, which is no longer the terminal education and matches the establishment of technical and vocational education. The course reform for technical and vocational education is performed, which has promoted the horizontal contact and vertical connection of technical and vocational education courses at various levels.

B. Rapid Upgrading and Transformation of Vocational and Technological Schools

Four-year technical college has become the main body of higher technical and vocational education system. The technical and vocational education system in Taiwan is divided into medium level and high level, and higher technical and vocational education is divided into junior college, undergraduate and research institute. The university of science and technology, college of technology and junior college that offer higher technical and vocational education above junior college are called vocational and technological schools collectively, and the university of science and technology and the college of technology that offer higher technical and vocational education above undergraduate level are referred to as science and technology colleges collectively. Among them, four-year college education refers to the undergraduate four-year technical and vocational education, which is equivalent to the four-year applied undergraduate education in the mainland; two-year college education refers to the two-year technical and vocational education, which is equivalent to the two-year education of upgrading from junior to undergraduate in the mainland.

C. Relevant Laws and Regulations Tend to Be Complete

Laws and regulations are of very important significance to the guidance and regulation of higher technical and vocational education development in Taiwan in the current society governed by law, especially the society with gradually deepening concept of managing education by law. They are the effective means and guarantee for the development and promotion of technical and vocational education. Moreover, the solving process of problems appeared in the rapid development of higher technical and vocational education is also the process of laws and regulations to continuously improve and complete. The development of higher technical and vocational education is closely related to the laws and regulations. The development of higher technical and vocational education in Taiwan is benefited from the guidance and regulation of laws and regulations. Relevant regulations reflect Taiwan authorities' opinion and attitude toward the problems occurred in higher technical and vocational education development and the solving strategies, playing a role of policy guidance. Currently, the relevant regulation system of higher technical and vocational education in Taiwan is almost complete.

D. Develop the Education of Industry-school Cooperation Generally

The industry-school cooperation is generally conducted in vocational and technological schools in Taiwan. The industry-school cooperation in various colleges is mainly carried out on the basis of their own development condition, the characteristics and demands of regional industry, and conduct special development in combination with the economic development in the island. Regional industry-school cooperation center mobilizes interschool observation, learning and sharing, creates regional industry-school environment, and enhances industry-school quality; assists in integrating the R&D team of partner schools to conduct interdisciplinary collaboration; assists partner schools in cooperation with enterprises to strive for industry-school R&D resources; links the resources of industry and enterprises, strengthens industry-school cooperation and talent cultivation benefits; deepens the cultivation of teachers and students who make innovation and start-up, to enhance students' ability of innovation and employment. In 2003 and 2004, 30 "Technology R&D Centers" in university of science and technology were set by "Ministry of Education", so as to strengthen industrial technology's research and development, system integration, intermediate test and commercial test, providing the environment for transformation of technological achievements and supporting the work of "regional industry-school cooperation center."

E. The Flourishing Private Vocational and Technological Schools

The higher technical and vocational education in Taiwan is generally divided into private and public categories, and public schools are divided into "national" and "municipal" schools. Most of the budget of public schools is from government subsidies, while private schools take the students' tuition as the main source of school's annual budget. The private donated schools in Taiwan have experienced a lot of twists and turns. Driven by courage of various policies and economic society, the private higher technical and vocational education in Taiwan has reached a considerable scale. At present, the number of private technical and vocational schools is more than that of public schools, and the number of students in school is also more than that of public schools. Private schools play a very important role in technical and vocational education development, especially in providing chances for students to receive higher education.

F. Gradually Improved Evaluation of Higher Technical and Vocational Education

The evaluation of higher education in Taiwan is divided into two categories, which is in line with the concurrent of general higher education and higher technical and vocational education, and one category of it is for general universities, which is referred to as university evaluation; another category is for university of science and technology, college of technology and junior college, which is referred to as evaluation of vocational and technological schools. Now the evaluation system of higher technical and vocational education in Taiwan has been formed, including

administrative evaluation, tracing evaluation and project evaluation in terms of category, and including school administration performance and educational performance in professional fields in terms of level contents. Among them, the three kinds of evaluation are clearly divided having different implementation functions.

III. REALISTIC DIFFICULTIES IN HIGHER TECHNICAL AND VOCATIONAL EDUCATION IN TAIWAN

A. *The Number of Students Is Decreasing Gradually with Serious Enrollment Issues and Decreasing Quality of Students*

This issue is worsened by the continuously enlarged quantity and scale of vocational and technological schools in Taiwan Island under the background of popularization of higher education. Ordinary universities have also enlarged their scale during over ten years, and they have advantages in enrollment of students. As a result, threshold of college entrance is inevitably lowered down, seizing the students of higher technical and vocational education. Moreover, the scale of college of science and technology is expanded, the enrollment quota is increased substantially, and making the enrollment issue of such higher technical and vocational schools more serious, especially that of private vocational and technological schools, and its operation and development is more worrying.

B. *Prominent Issue of Teachers and Deteriorated Ratio between Students and Teachers*

With respect to the aspect of teachers, most of the five-year junior colleges have upgraded to college of technology or university of science and technology through reform of vocational and technological schools. Most the teachers of former five-year junior colleges are the masters and lecturers with profound practical operation experience, but are constrained by the academic paper standard of college after upgrading. However, in the process of upgrading and restructuring, the principal item in upgrading conditions for technical and vocational colleges formulated by "Ministry of Education" is that "there should be a certain proportion of teachers with the qualification of full-time assistant professor or above." With the requirement and guidance of this standard, various colleges increase their employment of teachers with doctoral degree. And the education experience of teachers with doctoral degree is general education system of regular high school, bachelor, master, and doctor. As a result, most of the teachers in Taiwan now are the masters and doctors cultivated by various research institutes in colleges. The general research institutes in colleges are lack of practice teachers and relevant equipment required by vocational education. The masters and doctors graduated from the institutes to teach in technical and vocational colleges often have limited knowledge and skill about profession and special practice although they have certain knowledge and academic level, and they are lack of the ability for carrying out practical teaching in technical and vocational colleges, resulting in the teacher-oriented course teaching in technical and vocational colleges, focusing on academy in terms of research, and the

cultivated talents having difficulties in meeting the talent standard required by the industry, which cannot satisfy students' demand at the time of their employment effectively.

C. *Multiple Enrollment System Reform Causes Many Disputes*

Disputes still exist against the multiple enrollment system reform of vocational and technological schools. The reform of enrollment system is the top concern of students and their parents. The original intention of implementation of multiple enrollment system for education reform in Taiwan is to guide students to adapt to the development, correct the evil of "making final decision by only one exam" of joint admission system, and reduce the burden of students and their parents. But it shows serious problems according to empirical study or the public opinion after implementation of it, especially the burden of students and their parents is not relieved. Therefore, the entrance system is expected to be changed. The multiple entrance program causing social questions has the following focuses: first, the design deviation of multiple entrance program is much too complex; second, multiple entrance program does not reduce entrance pressure, but make more students participate in various talent classes; third, the fairness of multiple entrance is queried; fourth, too many enrollment methods and tedious homework lead to school's overloaded administrative load, and multiple entrance channels increase parents' burden of fees and students' pressure of examination.

D. *The Development of Private Vocational and Technological Schools Still Faces Severe Situation*

With the rapid scale expansion of vocational and technological schools in Taiwan, a group of private colleges are established during this period and transformed to university of science and technology later. Over the development for more than 20 years, the operation of private vocational and technological school encounters setbacks and the competition for students becomes the inevitable phenomenon for school development due to too many private vocational and technological schools, and the school-aged population within the island is reduced, education market is opened, the number of students is generally reduced, plus the economic setback and high unemployment rate. Although the number of junior schools and junior college students is reduced substantially, the scale of technology colleges and university of science and technology is greatly expanded, making the number of students of higher technical and vocational school increased considerably, yet the quality of students in vocational colleges declined remarkably, causing large number of students shortfall in vocational colleges especially the private colleges.

IV. CONCLUSION

The higher technical and vocational education in Taiwan of China has gained certain achievement and marches forward to diversification and refinement with the promotion of economic development transformation, education policy guidance and the reform carried in vocational and technological schools and other factors. However, some dilemma and crisis also occur while developing, and these

issues are worthy of discussion, so as to be conducive to reference by colleges in application-oriented transformation.

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