

Research on the Development of Vocational Education Talents in Ningbo during the 14th Five-Year Plan Period

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Abstract—The purpose of this project is to promote the economic and social development of Ningbo, accelerate the industrial transformation and upgrading of Ningbo, and comprehensively improve the quality of skilled personnel training. By means of literature research, investigation and analysis, qualitative and quantitative methods, and other methods, the innovation lies in centering on the "14th five-year plan" talent development planning theme, mainly combining with the domestic vocational expansion, vocational integration and another new trend of skilled personnel training. The conclusion is to construct a more comprehensive vocational education system, innovate the new mode of education, and put forward the ideas and countermeasures of accelerating the development of vocational talents in Ningbo.

Keywords—"14th five-year plan"; Ningbo; vocational education; talent development

I. INTRODUCTION

Talent is an important resource for economic and social development. As one of the ports of origin of the ancient Maritime Silk Road and an important node city in the construction of "Belt and Road" in the 21st century. Ningbo has made achievements in talent training based on the "13th Five-Year Plan" of the Yinzhou District of Ningbo City. Centering on the "14th Five-Year Plan" of developing talent, to promote the economic and social development of Ningbo, accelerate industrial transformation and upgrading. We will comprehensively improve the quality of training personnel. The training of talents with advanced skills, including the training of high - skills applied undergraduate talents and the senior vocational talents. Under the guidance of the policy of "the implementation plan of the Special work of expanding enrollment in higher Vocational Education" in 2019, it is of great significance and value for Ningbo to build a modern vocational education highland with distinct regional characteristics, reflecting the national and local demands and achieving the best world standards. [1]

II. THE PRESENT SITUATION AND EXISTING PROBLEMS OF NINGBO VOCATIONAL EDUCATION PERSONNEL TRAINING

A. The Present Situation of the Development of the Vocational Education in Ningbo

As of May 2019, there are 16 colleges and universities in the whole city, which including 8 full-time undergraduate colleges and universities, 6 higher vocational and technical colleges and 38 secondary vocational schools (including 10 national-level reform and development demonstration schools and 8 provincial-level reform and development demonstration schools), the number of students is 6.6 million. Full-time teachers achieved in 5283. Therefore, the one-time employment rate of the graduates reaches 98.9%, and the double-certificate acquisition rate is over 90%. There are 31 national-level, 33 provincial practice and training bases, 2 level of modern apprenticeship pilot units, and 10 provincial modern apprenticeship pilot units. The city's middle-grade school is now set up to 18 broad categories. 6 majors (3 national demonstration majors and 48 provincial demonstration majors) basically cover all the industries of one, two and three industries in the whole city. [2]

The chart below illustrates the development situation of Ningbo vocational schools and majors. Generally speaking, the development of all indicators is stable. The pilot units for a modern apprenticeship at the ministerial and provincial were established in 2017. The number of provincial training base was added up to 33, while the major categories remain the same. The provincial demonstrate professional still kept at 48. The number of full-time teachers leveled off.

TABLE I. DEVELOPMENT OF VOCATIONAL EDUCATION SCHOOLS IN NINGBO FROM 2010 TO 2018

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Independent Secondary Vocational Schools	41	40	40	39	38	38	38	38	38
National Model School for Reform and Development	7	7	10	10	10	10	10	10	10
National Training Base	16	21	27	31	31	31	31	31	31
Provincial Training Base	24	24	26	24	24	15	15	33	33
A Pilot Unit of Modern Apprenticeship at The Ministerial Level	0	0	0	0	0	0	0	2	2
Provincial Pilot Unit of Modern Apprenticeship	0	0	0	0	0	0	0	7	10

Data source: Ningbo Education Bureau

TABLE II. DEVELOPMENT OF VOCATIONAL EDUCATION SPECIALITIES IN NINGBO FROM 2010 TO 2018

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Major Categories	15	15	15	15	18	18	18	18	18
Number of Major	118	118	118	118	112	130	130	130	106
National Demonstration Major	3	3	3	3	3	3	3	3	3
Provincial Demonstration Major	46	48	48	48	48	48	48	48	48
Full-time Teacher	4955	4955	4919	5714	5647	5666	5399	5399	5283

Data source: Ningbo Education Bureau

B. Problems of the Vocational Education in Ningbo

1) Misunderstanding of Concept and Location Target

One-sided understanding of quality education, the cultivation of compound talents, professionals and generalist education. Skills training has fallen to a secondary position, thus weakening the improvement of comprehensive quality. Therefore, the one-sided view also including "secondary vocational education belongs to technical education and end education." Employment demand is decreasing, especially the manufacturing-related majors will face the risk of shrinking, and the contradiction between majors and industries will become more prominent. We should focus on developing students' general abilities which are including critical thinking and problem solving, communication and collaboration, innovation and innovation.

2) Major Distribution and Industry Docking Need to Be Improved

Although the professional group of a few Ningbo vocational colleges basically covers local key industry, the connection of key major and industry still incomplete. The modern industrial structure is gradually softening; especially the demand for services related vocational education and training will continue to rise. We should gradually expand the width of professional, dilute the concept of professional counterpart, and turn to the development of industrial group based on professional group.

3) Professional and General Skills Wait to Be Equilibrium

First, the content of modern work is undergoing profound changes. The completion of work is more dependent on the advantages of employees' intelligence factors rather than physical exertion. Secondly, the speed of modern work changing is accelerating every day. In order to make employees have greater flexibility, the mode of "order cultivation" should be changed in the content of vocational education, and majors should be set up on the basis of occupational groups, so as to meet the needs of continuous learning and job transfer of employees. Thirdly, the automation of production makes the position and scope of work need to be

broadened. And the workers' professional knowledge and general ability requirements also continue to expand.

4) Vocational Education and Training Functions Wait to Be Enhanced

The traditional industries have reduced the absorption of low-end labor force, which makes the demand for vocational education skills compensation and training surge.

With the rapid development of technology, the need for retraining for employees' upgrading has increased; the phenomenon of emphasizing pre-job training and neglecting post job training urgently needs the improvement of vocational education and training function, and the continuous education and training of employees will be paid more attention by the society and enterprises.

Modern work relies more on the intelligence of employees, and the speed of job change is accelerating. Jobs are merged, and the scope of work is broadened, which requires broader professional knowledge and the ability of workers. Therefore, job skill training is transferred to comprehensive vocational ability training.

III. COUNTERMEASURES OF NINGBO VOCATIONAL EDUCATION TALENT DEVELOPMENT DURING THE 14TH FIVE YEAR PLAN

A. Apprenticeship Training

Apprenticeship training is an ideal choice for vocational colleges. It can deeply reflect the characteristics of school-enterprise cooperation and combination of work and learning in vocational education. Its core elements are still "post", "trainee" and "master". These three elements carry out the whole process of modern apprenticeship, and are also the core of the reform of Vocational Education - major construction, curriculum construction, teaching mode, evaluation, teacher construction, teaching environment construction and so on. [3]

B. Connection of Middle and Higher Vocational Education

The evaluation focuses on the overall design and planning of the talent training program, the improvement of the curriculum framework and its standards and contents, the teaching mode and learning mode and its evaluation, the transition and connection mode of higher vocational education, and the teaching quality. The connection between secondary and higher vocational education should become the channel and overpass for students' career growth (including companies, enterprise employees, etc.), rather than just the way to improve their academic qualifications. Based on clarifying the objectives of personnel training, higher vocational education should constantly enhance the connotation and improve the quality of education. The effective connection of middle and higher vocational education is helpful to solve the problem of students, promote the coordinated development of middle and higher vocational education, promote the sustainable development ability of students and the promotion of academic level, and provide higher-level technical and technical talents for the regional economic and social development.

C. School and Enterprise Community

Teaching of the school being guided with the production practice of the enterprise, defining the objectives of talent training and talent standard, promoting the specialty construction, carrying on the combining learning with working are important for the cooperation between school and enterprise. The enterprise should preferentially benefit from the cooperation between school and enterprise. In the process of cooperation, school should be good at considering problems from the perspective of enterprise, thinking about what the enterprise thinks and worrying about what the enterprise is anxious about. Relatively independent educational entities are an important condition for enterprises to participate. School and enterprise community is an excellent mode to cooperation between school and enterprise, but it is not meaning that school and enterprise community is the only mode.

As long as it benefits to motivate the positive of enterprises, deepen cooperation of schools and enterprises, and the cooperation between schools and enterprises to better training talents, what is mentioned above all should be the direction of our pursuit and efforts.

D. Double Training System for Teachers and Students

Basically, the objective and mode of talent training in vocational school are the questions of cultivating "high-quality and skilled" talents and how to cultivate "high-quality and skilled" talents. The content of theoretical teaching is integrated into the educational mode of practical teaching so that students can participate in the whole process of front-line production, service and management, cultivate students' awareness of modern production, service and management, and enhance students' operating ability, organizational ability, management ability, technical application ability and post work ability. Therefore, on the base of cultivating students, there are also relevant skills of teachers. [4]

E. Integration of "Yong", "Occupation" and "School" in Three Dimensions

1. "Yong": Highlighting the regional area, emphasizing the service for Ningbo's economic and social development, adapting to the requirements of Ningbo industrial transformation and adjust the professional structure.

2. "Occupation": Highlight the professionalism; emphasize the development path of types. It is including reconstructing the classroom which will help to solve the problems of talent training mode. Link post is set to solve the problems of course system and teaching content, link post requirements of course system and teaching content to work tasks. Dual teacher co-education is to solve the problem of training ways and means; professional teachers go to enterprises to exercise and enterprise technicians to school teaching. School-enterprise linkage is to solve the problem of vitality and vocational education; enterprises participate in the whole process of education, and integrate school-enterprise culture. Therefore, there are also contain the problem that the first post adaptation, multi-post migration, sustainable development, etc. [5]

3. "School": The joint development of higher vocational education and middle vocational education should be the channel and overpass for students' career growth, rather than just the way to improve their academic degree. We cannot simply take secondary vocational education as the foundation of higher vocational education. On the base of clear training objectives of talents, higher vocational education should constantly improve the connotation and quality of education. Secondary vocational to learn from higher vocational. The aspects of higher vocational guidance should include scientific research, school management and cultural concepts. [6]

IV. CONCLUSION

The birth of new industry, a new career and position requirements, bring a wider development space to vocational education, but the reality of vocational education development makes us think that with the economic benefits, some robots begin to "rob" the manpower work, and gradually squeeze the living space of human beings in the mid-range industry, resulting in tens of thousands of manual workers and service personnel of unemployment. The goal of vocational education includes three aspects: knowledge, skill and mind. The knowledge which means the knowledge quality requirements for the cultivated objects, including basic cultural knowledge, modern science and technology knowledge, basic professional knowledge and professional knowledge. "Technical", that is, skills, refers to the requirements for the technical ability and quality of the cultivated object, including the technical ability, work ability, social ability and innovation ability, etc., which is the core of the talent specification; "Mind" refers to attitude and emotion, that is, the psychological quality requirements for cultivating talents.

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