

Study on "1 Plus X Certificate" in Higher Vocational Colleges

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ABSTRACT

This article analyzes the current research status of "1+X certificate" (one academic certificate + several vocational skill level certificate systems) from four aspects of the teaching model and talent training model, "1+X certificate" system construction, "course-certificate integration" and "course-certificate symbiosis and co-growth", and "1+X certificate" implementation path. It is proposed that relevant guarantees and adjustments should be made from the national system, vocational skills standards, schools, professional construction, and curriculum systems to ensure the implementation of the "1+X certificate".

Keywords: higher vocational colleges, "1+X certificate", teaching mode, talent training mode

I. INTRODUCTION

In 2019, the State Council issued the "National Vocational Education Reform Implementation Plan" (Guofa (2019) No. 4), which clearly proposed that starting in 2019, the academic certificate + several vocational skill level certificate systems will be launched in vocational colleges and application-oriented undergraduate colleges, referred to as "1+X certificate" system. The work concept of "1+X certificate" system is to consolidate the systemic and integrity of education through academic education, and promote the social and industrial applicability of talents through certificate training.

Since 2019, the country has approved two batches of pilots. The first batch of six vocational skill level certificates and the number of pilot institutions to start the pilot are 320 institutions of building information model (BIM), 422 institutions of web front-end development, 355 institutions of logistics management, 231 institutions of elderly care, 465 colleges for automobile operation and maintenance, and 195 colleges for intelligent new energy vehicles. The second batch of 10 vocational skill level certificates and the number of colleges and universities are 375 for e-commerce data analysis, 570 for online store operation and promotion, 397 for industrial robot operation and operation, 325 for industrial robot application programming, 155 for special welding technology, 468 for intelligent finance and taxation, 241 for maternal and infant care, 303 for sensor network application development, 156 for dementia elderly care, 288 for

cloud computing platform operation and development, etc. Now the application for the third batch of pilot institutions has been launched.

On the CNKI from 2019 to the present, related academic papers on "1+X certificate" are searched according to the theme "1+X certificate", and there are a total of 395 articles, including 205 in 2019 and 190 in 2020; Searching according to the keyword "1+X certificate", a total of 74 articles were retrieved, including 45 articles in 2019 and 29 articles in 2020. As China continues to introduce new policies for vocational education and an urgent need for high-level skilled professionals, academia pays more and more attention to "1+X certificates" in vocational colleges. This article mainly selects some representative research results based on the source of the journal from the four aspects of the teaching model and talent training model, "1+X certificate" system construction, "course-certificate integration" and "course-certificate symbiosis and co-growth", and "1+X certificate" implementation path to carry out analysis.

II. TEACHING MODEL AND TALENT TRAINING MODEL

Zhang Yan of Beijing Union University puts forward: school-enterprise cooperation, collaborative education, it is to emphasize the process and practicality of professional training, closely surround the application of disciplines and specialties, create multi-dimensional teaching scenarios and teaching methods, and propose curriculum design application model of "classroom theory learning + in-school

training + out-of-school practice (X certificate) model". Liu Weijie, deputy principal of Taodu Secondary Specialized School in Jiangsu Province, proposed "constructing a combined and diversified 'multi-process' curriculum structure". The course content is selected and organized in a "multi-dimension", the course implementation changes from "teaching based" to "learning based", and the management mechanism changes from "rigidity" to "flexibility". Zeng Desheng and others from Guangdong Innovative Technical College combined the leading advantages of Huawei's technology and services with the advantages of the school's innovative application talent training, and constructed a big data technology and application professional curriculum system in a segmented manner. They took the big data engineering and technical personnel's "vocational ability" requirements as the core, adopted the results-oriented education concept to build a curriculum system, and reversely designed the curriculum system around the professional expected "learning output".

From the above analysis, it can be seen that some vocational colleges have already tried and practiced the "1+X certificate" teaching model and talent training model, and some vocational colleges have also achieved good results. With the participation of more pilot colleges, each vocational college should actively learn the successful experience of other vocational colleges according to the characteristics and conditions of the college, develop in-depth cooperation with enterprises, and establish teaching models and talent cultivation suitable for the characteristics of the college.

III. CONSTRUCTION OF "1+X CERTIFICATE" SYSTEM

From the perspective of China's education certificate and labor certificate system design, Deng Zemin and others from the Institute of Vocational and Technical Education Center of the Ministry of Education believe that the X certificate has the dual nature of education and labor certificate, linking education and labor, identifying the professional ability level of students and labor management. They put forward suggestions to improve Chinese education and labor certification system: it is necessary to speed up the construction of a professional qualification framework, accurately locate the nature of the "X certificate", and design the labor certification system as a whole. Zhang Chi and Zhang Lei of Xingtai Vocational and Technical College believe that from "manufacturing" to "intelligent manufacturing", the transformation and upgrading of the manufacturing industry chain requires high-skilled personnel to possess a compound professional quality, including a four-in-one compound two-dimensional structure of technical knowledge, vocational skills, innovative

ability and craftsmanship. Based on the vocational quality configuration of high-skilled talents, vocational education constructs a "1+X" education and training collaborative system, and determines the goal positioning and value orientation of the "1+X" education and training collaborative system; it expands the concept extension of "high-skilled talents" to include social students into the category of "1+ X" training objects; it also builds a "1+X" collaborative training system for high-skilled talents. The education of academic certificate lays a solid foundation for the sustainable development of students. The "X" vocational skill level certificate training horizontally expands the professional qualities of practical survival and development, and achieves coordination at the macro, meso and micro levels.

Through the above analysis, it can be found that there is not much research on the construction of the "1+X certificate" system. Scholars have mainly discussed and studied from the three perspectives of the certificate system, qualification framework and training coordination system. In the design and construction of the "1+X certificate" system, it is still in need of continuous research and exploration.

IV. "COURSE-CERTIFICATE INTEGRATION" AND "COURSE-CERTIFICATE SYMBIOSIS AND CO-GROWTH"

Xu Yuan of the Vocational Skills Appraisal Center of the Ministry of Human Resources and Social Security promotes the "1+X certificate" system in relevant colleges and universities. And in the process of the close integration with professional construction, curriculum construction, textbook development, teacher team building, school-enterprise cooperation, etc., he develops high-quality textbooks for "course-certificate integration", which is related to the organic connection between "1" and "X", and is also a key issue to improve the quality of vocational education and the employability of students. Du Yiping and others of Guangdong Education Research Institute analyze the teaching results of the "course-certificate symbiosis and co-growth" model in Shenzhen Polytechnic to accurately serve the development needs of the information and communication technology industry and to educate people in collaboration with Huawei. Regarding certification as the starting point, it needs to implement the "1+X" certificate system, give play to the important role of the enterprise, promote the integration of industry and education, and establish the system design of the school-enterprise cooperation mechanism, which is conducive to stimulating students' learning motivation, achieving precise education and high-end education, helping to promote the development of modern vocational education series standards, and establishing a qualification framework

and lifelong education system with Chinese characteristics. Taking the WEB front-end development certificate and software technology as an example, Zheng Genrang et al. of Zhongshan Polytechnic analyze the core curriculum system of professional restructuring with document and certificate integration under the 1+X certificate system. Taking the restructuring of the core courses of software technology as an example, they use the concept of documentary evidence integration, and construct the certificate curriculum matrix through the Web front-end development, integrating the relevant standards, specifications and contents of the certificate into the core curriculum system of software technology. The web front-end development pilot major analyzes and evaluates the existing professional course system. Based on the web front-end development certificate course matrix, combined with the foundation of professional construction and the current industrial development and talent needs, the core curriculum of the professional is restructured to continuously improve the flexibility, adaptability and pertinence of the cultivation of skilled talents.

Through the above analysis, it is found that in the implementation of "1+X certificate", majors, teaching materials and courses directly face students, which is an important aspect related to whether students can learn vocational skill level certificates. Therefore, higher vocational colleges should continue to practice in the areas of "course-certificate integration" and "combination of textbook and certificates." It is necessary to actively cooperate with training evaluation organizations, develop teaching materials suitable for vocational skill level certificates, and actively carry out social training.

V. "1+X CERTIFICATE" IMPLEMENTATION PATH

Xu Feng and Li Jin of Nantong Shipping College proposed that the implementation of the "1+X certificate" system should be carried out from the aspects of government departments, the relationship between public welfare and profitability, self-supervision and external supervision, and the scientificity and flexibility of the assessment. Government departments plan overall plans, do top-level design, organize training and evaluation organizations to coordinate certificates, and vocational colleges pass the introduction of certificates, handle the integration and development of "1" and "X", and coordinate the relationship between commonality and individuality. Gu Guangfu of Tianjin Vocational Institute proposed that "government departments should actively explore the establishment of a national vocational education 'credit bank'". Through "document and credit integration", it can realize the recognition of

academic credentials and multiple types of vocational skills grade certificates. It is also necessary to accumulate and convert supporting policies, vigorously strengthen teaching reform in revising talent training programs, build a teacher team, and improve social and economic development services. Du Shasha and Pu Mei of Chongqing Radio and Television University believe that the "1+X" certificate system under the credit bank concept should be achieved by improving the top-level design and system, highlighting the integration of vocational skill level standards and professional teaching standards, improving the allocation of teachers, and consolidating the four paths of infrastructure construction. From the reform of the "three teachings" of "1+X certificate", Chu Yijing of Wuhan Technical College of Communications establishes a "1+X certificate" "quadruple" collaborative community certification system, "1+X certificate" system credit bank framework and system construction from three angles to study the implementation of "1+X certificate".

From the above analysis, it can be seen that most scholars' research on the implementation path of "1+X certificate" is mainly based on the concept of credit bank, and the relevant coordination and improvement between the three main bodies of the government, training evaluation organization and school. If the complete implementation of the "1+X certificate" is likened to a pyramid, the above research is mainly concentrated on the middle and top layers of the pyramid, and the bottom layer of the pyramid is mainly majors and courses, because the final implementation of the "1+X certificate" must be implemented into professional training programs and curriculum systems.

VI. CONCLUSION

The new and old kinetic energy conversion strategies proposed by the state strengthen the role of talents and set new requirements on human resources. In addition to the urgent need for high-end scientific research and innovation talents, high-level integrated skills with innovative and entrepreneurial qualities are also required. In 2019, the State Council issued the "National Vocational Education Reform Implementation Plan" to promote vocational education reform and implement the "1+X certificate" system. It is a major reform measure of my country's vocational education in the new era. It can reconstruct the learning ecology of the "work-study integration" of vocational education in the new era, cultivate the comprehensive vocational capabilities of compound technical skills, and ease structural employment contradictions.

Judging from the current research on the "1+X certificate" of vocational colleges in China, the implementation of the "1+X certificate" system is still in the exploratory stage. Higher vocational colleges should actively cooperate with enterprises and training

evaluation organizations to continuously study the teaching model and talent training model suitable for the school. To deeply implement the national "1+X certificate" system, relevant guarantees and adjustments must be made from the national system, vocational skills standards, schools, professional construction, and curriculum systems to implement the "1+X certificate". It is necessary to encourage higher vocational colleges to improve school conditions, optimize teaching management, promote the integration of production and education, deepen professional teaching reform and curriculum system optimization, etc., and promote the development of higher vocational education, thus providing a guarantee for the society to train and export large quantities of advanced skills and application-oriented talents.

References

- [1] Du Yiping, Li Haidong, Zhan Bin, Discussion on the Design of '1+ X' Certificate System from the Perspective of 'Symbiosis and Co-growth of Courses and Certificates' [J]. Chinese Vocational and Technical Education, 2019 (04): 9-14. (in Chinese)
- [2] Sun Shanxue, Some Opinions on 1+X Certificate System [J]. Chinese Vocational and Technical Education, 2019 (07): 72-76. (in Chinese)
- [3] Dai Yong, Zhang Zheng, Guo Qiong, Thoughts and Measures of Implementing the '1+X' Certificate System in Higher Vocational Colleges [J]. Chinese Vocational and Technical Education, 2019 (10): 29-32. (in Chinese)
- [4] Wu Nanzhong, Xia Haiying, Promote the Systematic Construction of Vocational Education 1+X Certificate System with Qualification Framework [J]. Chinese Vocational and Technical Education, 2019 (16): 12-18. (in Chinese)
- [5] Liu Weijie, Research on the Curriculum Reform of Vocational Education under the 1+X Certificate System [J]. Journal of Vocational Education, 2019 (07): 47-53. (in Chinese)
- [6] Yang Duiyuan, Discussion on the Examination Standard of "X Certificate" in the "1+X Certificate" System of Vocational Education [J]. Journal of Vocational Education, 2019 (07): 54-58. (in Chinese)
- [7] Du Shasha, Pu Mei, "1+X" System Under the Credit Bank Concept: Connotation Interpretation, Value Appeal and Path Selection [J]. Chinese Vocational and Technical Education, 2019 (19): 44-49. (in Chinese)
- [8] Wang Xing, Wang Danxia, Research on Some Key Problems of 1+X Certificate System [J]. Vocational and Technical Education, 2019, 40(12): 7-12. (in Chinese)
- [9] Chu Yijing, How to Implement the System of One Plus X Certificate of Vocational Education? [J]. Journal of Wuhan Technical College of Communications, 2019, 21(03): 42-45. (in Chinese)
- [10] Zhang Chi, Zhang Lei, The Construction of Professional Quality Model of High-skilled Talents and "1+X" Education and Training Coordination System from the Perspective of Made-in-China [J]. Education and Vocation, 2019 (20): 35-42. (in Chinese)
- [11] Cheng Shutong, Concept, Ideas, Difficulties and Countermeasures of 1+X Certificate System Work [J]. Education and Vocation, 2019 (22): 25-30. (in Chinese)