

# *Discussion on Talent Training Mode Based on 1+X Certificate System in Digital Intelligence Era*

Chaoxin Ji, Xuetao Li

*Hubei University of Automotive Technology, Shiyan 442002, China*

**Keywords:** Digital intelligence era, 1+X certificate system, Talent training mode, University-enterprise integration

**Abstract:** In the digital intelligence era, digital technology represented by big data and artificial intelligence enables traditional industries to become the core force to promote global industrial reform. Digital technology integrates and innovates with various fields and industries, promotes the transformation of resource elements and modes, and then promotes the transformation and upgrading of enterprises. Under this background, it is necessary to further improve and promote the structural reform of talent supply side in the field of higher education. 1+X certificate system introduces skill level certificate on the basis of academic education certificate, which is the continuous development of vocational education talent training mode in the selective dimension. It is to adapt to the in-depth challenge brought by the change of vocational structure in the digital intelligence era to the talent training mode of higher education. It is also the necessity of the in-depth integration of schools and enterprises, and points out the direction for the reform of talent training mode of higher education.

## 1. Introduction

"Digital intelligence era" refers to a new economic era characterized by big data and intelligence. Digital technologies such as big data, artificial intelligence, Internet +, cloud computing, Internet of Things + and block chain empower traditional industries and become the core force driving global industrial transformation[1]. Digital technology promotes the innovation of resource elements and business model, and accelerates the upgrading and transformation of enterprises. Enterprises apply digital technology to promote the interactive integration of a large number of new business forms and new business models, and accelerate the generation of new value growth points[2]. In this context, enterprise management practice conforms to the development of the times, further improves the demand for high-tech, high-level and comprehensive talents, has a significant impact on the talent training objectives of colleges and universities, and also brings new challenges and opportunities to the implementation of interdisciplinary education reform in China, so as to promote the structural reform of talent supply side in the field of higher education.

## **2. The necessity of Optimizing the Talent Training Structure in Colleges and Universities in the Digital Intelligence Era**

Under the background of digital intelligence era, the trend of digital technology replacing traditional operation and mutual cross integration of occupations is becoming more and more obvious, showing the following characteristics:(1) The integration of operational and professional occupations reduces occupational stratification and flattens occupational structure;(2) There is cross integration between operational occupations, and many occupations tend to merge. A large number of skilled operations are replaced by intelligent devices, and the scope of work that one person can operate is enlarged; (3) Career boundaries become blurred. In short, the digital intelligence era has higher requirements for compound technical and skilled talents and faster career change. The development of digital technology is the background of the implementation of 1 + X certificate system[3].

In accordance with the development of the era of digital intelligence, the state has taken several measures to optimize the structure of application-oriented personnel training in recent years, and issued a series of documents and policies that have mapped out the blueprint and pointed out the path for the development of higher education. In 2014, the State Council promulgated the decision on accelerating the development of modern vocational education, which comprehensively deployed to accelerate the development of modern vocational education; In 2015, the Ministry of Education issued the Opinions on Further Promoting The Collectivized Running of Vocational Education to encourage multiple subjects to set up vocational education groups, deepen the reform of the running system and mechanism of vocational education, and promote the construction of a modern vocational education system[2]. In 2016, the 13th Five-Year Plan clearly proposed to promote the qualified ordinary undergraduate universities to transform into application-oriented; In 2019, The Ministry of education cooperates with the national development and Reform Commission and the Ministry of finance issued "Guiding opinions on guiding some local colleges and universities to change to application-oriented", the transition reform in colleges and universities in the top level design, put forward the main task of the undergraduate college transformation development, supporting policies and promoting mechanism, pointed out the direction for development applied undergraduate colleges and universities; In the same year, the Ministry of Education promulgated the "1 + X" certificate system, implemented the course certificate integration course system combining academic education and vocational skill training, promoted the reform of training and evaluation mode of technical skill talents, and provided ideas and references for improving the quality of talent training, enhancing students' Employment and entrepreneurship ability, expanding students' employment channels and alleviating structural employment contradictions[4]. The Ministry of education and the Ministry of finance further announced the construction list of the "double high plan", and since then, the talent training mode of colleges and universities has entered a new era.

## **3. 1 + X Certificate System Lays the Foundation for Innovative Talent Training Mode in the Digital Intelligence Era**

"1" in the 1 + X certificate system refers to the academic certificate, and "X" refers to the vocational skill certificate related to the specialty. Compared with traditional academic education, "1 + X" is more professional and more conducive to improving students' comprehensive strength.

The age of digital intelligence has promoted the melting of career boundaries, and compound technical and skilled talents have become a common demand. Only by breaking the original boundary between specialty and school system can we further expand the learning choice space of vocational education, and the talent training mode needs to be adjusted accordingly. The 1 + X certificate system is based on this need, and its fundamental purpose is to cultivate compound technical and skilled talents with one specialty and multiple abilities[5].

(1) Provide more learning and choice space for cultivating compound technical and skilled talents. The training of compound technical and skilled talents needs to further expand the choice flexibility of vocational education, and may even span the scope of original academic vocational education. The 1 + X certificate system encourages students to obtain more skill level certificates on the basis of academic certificates, so that students have more choices and span the scope of original academic and vocational education;

(2) Provide greater combination space for cultivating compound technical and skilled talents. By recognizing the skill level certificates developed by emerging industries and enterprises and integrating these certificates into the existing academic education, the cultivation of higher education talents can better reflect the new needs of industrial development, greatly expand the curriculum combination space for the cultivation of compound technical skills talents, and is conducive to the cultivation of compound technical skills talents who are cross industry, cross grade and adapt to industrial development;

(3) Provide more diversified school system forms for training compound technical and skilled talents. To cultivate compound technical and skilled talents, we should not only build a diversified integration relationship between vocational education at all levels, but also face diversified challenges in the needs of students' school system. Based on this demand, in recent years, many provinces and cities have piloted talent training modes such as medium and high-level connection and middle-level and basic connection, and combined the 1 + X certificate system with the credit mutual recognition system to enhance the flexibility of the higher education school system, enrich and diversify the school system, and provide ideas for solving the problem of school system.

(4) Provide more practical opportunities for cultivating compound technical and skilled talents. The 1 + X certificate system strengthens practical teaching in Colleges and universities, improves students' vocational skills, and better adapts to the in-depth challenges brought by the changes of vocational structure in the digital intelligence era to the talent training mode of higher education.

In summary, the 1+X certificate system lays the foundation for the innovative talents training mode. The university will combine the 1+X certificate system with the "Internet plus teaching" mode, the double innovative talents training mode, the deep integration mode of school enterprise, and the continuous improvement of teachers' training and training mode, so as to promote the diversification of personnel training mode and promote the combination of education and training, internal and external integration, documents and certificates integration. The revision and improvement of the talent training program will promote the quality of vocational education through the reform of talent training mode and evaluation mode, smooth the growth channel of compound technical and skilled talents, and promote employment and entrepreneurship.

#### **4. Discussion on the Reform of Talent Training Mode Promoted by 1 + X Certificate System**

Talent training has always been the primary task of higher education. On the basis of learning from foreign experience, combined with the current situation of China's higher education development and talent demand, China has gradually explored and innovated a talent training mode

suitable for its own country. Whether it is the concept of deepening the integration of industry and education, school enterprise cooperation and the combination of education and training in the "super high plan", the construction of high-level higher vocational schools and majors with Chinese characteristics in the "double high plan", and the talent training mode of emphasizing the combination of academic qualifications and skill certificates and optimizing professional coordination in the 1 + X certificate system is to build high-level higher vocational colleges and professional groups. It is an important measure to improve the quality of talent training[6].

The following mainly discusses the reform of talent training mode promoted by 1 + X certificate system:

(1) Reform the talent training mode guided by the 1 + X certificate system. We will establish an optimization mechanism for talent training, cooperate with society, government, enterprises and colleges and universities, build a coordinated and optimized development mechanism for social demand orientation, government policy regulation, enterprise resource supply and talent training in Colleges and universities, and create a virtuous circle of "applied talent training ecosystem".

(2) Take the 1 + X certificate system as an opportunity to promote the deep integration of schools and enterprises. The whole process of integration and collaborative education realizes the "seamless connection" between schools and enterprises. Through the joint construction of schools and enterprises, the combination of work and learning, the integrated education of schools and enterprises, the establishment of a two-line intertwined curriculum system between schools and enterprises, a vocational qualification certification system, and set up characteristic courses of work study alternation, the enterprise curriculum chain of "specialty + vocational ability" is formed. Students study in school and practice in the enterprise alternately, move the classroom into the enterprise, bring the project into the classroom, and realize the integration of industry and education.

(3) Promote the reform of practical teaching system with 1 + X certificate system. Colleges and universities can integrate practical teaching with innovative experiment and subject competition by constructing the dual training mode of integrating theory and practice, and put the cultivation of students' application ability through the whole process of talent training. For example, school enterprise specialty co construction, enterprise build the center of practical training and experiment, enterprise experts into the classroom, students into the enterprise, etc, so as to realize the leap of students' comprehensive ability.

(4) The implementation of 1 + X certificate system drives the innovation of school running form. The 1 + X certificate system brings challenges to the education management system. While reforming the talent training mode, colleges and universities also need to build corresponding education management systems, including the management system of education administrative departments, the management system of colleges and universities, and even the reform of labor and personnel system outside education.

(5) 1+ X certificate system reconstructs the content of talent training education. In the existing academic education, the professional content is saturated and the class hours and credits are relatively fixed, which makes it difficult to superimpose the content of "X". The curriculum is integrated to improve the efficiency of curriculum setting and provide class hours and credits for the implementation of "X".

(6) Promote the establishment of talent training evaluation system with 1 + X certificate system. The 1 + X certificate system requires the value judgment of all the processes and results of talent training, and the evaluation content is richer, including the specialization and diversification of evaluation subjects. Enterprise executives, senior technical talents and teachers with rich experience

in training applied talents can be appropriately introduced into the evaluation system. In terms of student evaluation, we should reform the original examination system and pay attention to the examination and evaluation of students' mastery of knowledge and skill training.

(7) Promote the demand for order type talent training with 1 + X certificate system. According to the needs of regional development, local colleges and universities establish the awareness of "serving the economy, serving the region and serving the enterprise", and pursue the harmonious development of talent training and regional economy.

(8) Innovate the sharing service mode with the 1 + X certificate system. Take the students majoring in financial management as an example, accelerate the development of "basic skills of financial management +" professional personnel training, promote students to form enterprise data and value accounting awareness, and improve students' employment quality. Create a "credit account". After students obtain a certificate, they can obtain corresponding credits and deposit them in the "credit account", which provides a basis for the evaluation of recruitment enterprises, and can also provide mutual recognition for the credits of students studying other relevant courses in the later stage, so as to unblock the channels of talent training.

## 5. Summary

The effect of the implementation of 1 + X certificate system depends on whether it can really make "X" increase on the basis of 1. Colleges and universities should build a professional "X" selection guidance system and carry out mutual recognition of credits with enterprises, educational institutions and educational platforms. When applying the 1 + X system to innovate the talent training mode, colleges and universities need to guide and encourage students to set goals and take relevant courses according to their careers on the basis of professional knowledge, so as to help students build a diversified and integrated knowledge system and achieve the purpose of improving students' practical ability.

To sum up, the implementation of the 1 + X certificate system is an important innovation of the "20 articles of vocational education". It is a major reform of the national vocational education system in the new era, deepening the integration of industry and education and school enterprise cooperation in higher education. It is also a catalyst for higher education and teaching reform. The digital intelligence era puts forward higher requirements for talent quality, and the 1 + X certificate system points out the direction for the reform of talent training mode in higher education.

## Acknowledgements

Educational science planning project of Hubei Provincial Department of education: Research on talent training mode based on "1 + X" certificate system in the digital intelligence era (Project No.:2021gb098)

The teaching and research project of Hubei Institute of automotive industry: Research on financial management innovation and Entrepreneurship Talent Training and education reform (Project No.: jy2021063)

## References

- [1] Juan Wei, Chaocheng Gu, *Research on the interdisciplinary education reform of undergraduate accounting in the "digital intelligence era"*, 2021, (08), *Business accounting*, 114-116
- [2] Guoqing Xu, Mengyao Fu, *"1 + X" is an important innovation in the talent training mode of*

- Vocational Education in the intelligent era*, 2019, 39(07),*Research on educational development*, 21-26
- [3]The Ministry of Education issued the opinions on further promoting the collectivization of Vocational Education - the government portal of the Ministry of education of the people's Republic of China[EB / OL] [http://www.moe.gov.cn/jyb\\_xwfb/gzdt\\_gzdt/s5987/201507/t20150723\\_195241.html](http://www.moe.gov.cn/jyb_xwfb/gzdt_gzdt/s5987/201507/t20150723_195241.html)
- [4]State Council (January 24, 2019). Notice of the State Council on printing and distributing the implementation plan of national vocational education reform [EB / OL] [http://www.gov.cn/zhengce/content/2019-02/13/content\\_5365341.html](http://www.gov.cn/zhengce/content/2019-02/13/content_5365341.html)
- [5]Lijun Zhang, A new mode of enterprise talent training in the era of digital intelligence,2020, (14),*Human resources*,26-31
- [6]Chengrong Ma,Yang Sun,*The path and strategy of professional structure optimization and adjustment in Higher Vocational Colleges from the perspective of "double high plan"*,2019,40 (24),*Vocational and technical education*,12-17
- [7]Hui Song ,Haiyan Wang ,Peiqin Wang ,Gang Wang ,Xu Jin ,2019(09),*Exploration on the path of talent training system of "full integration of schools and enterprises and collaborative education" -- Taking the electromechanical integration technology of modern apprenticeship pilot specialty of Qingdao Huanghai University as an example*,*Research on industrial innovation* ,92-93
- [8]Jiquan Zou, *Research on talent training mechanism of "Four Party linkage and five chain coupling" based on 1 + X certificate*,2021,41(04),*Adult Education*,46-52
- [9]Ke Yu,*Developing digital economy and enabling high-quality economic development -- a case study of Hunan Province*,2021, (01),*Economic circles*,48-52
- [10]Yousheng Zhao, JunWang,Qinglin Zhang, Junhua Liu,Jiafu Lu,*Practical exploration of modern apprenticeship system in Higher Vocational Colleges -- Taking Changchun vocational and Technical College as an example*,2014,35 (11),*Vocational and technical education*,72-74
- [11]Zhiye Sun, *School enterprise cooperation and the construction path of applied art talent training system in Colleges and Universities*,2018, (10),*Research on continuing education*,135-138
- [12]Dong Xue,*What is a high level: Reflections on the construction of the "double high plan" of higher vocational schools in China -- Based on the experience of American excellent community colleges*, 2019,40 (31),*Vocational and technical education*,12-17
- [13]Jirong Hu,*Research and practice of "three-three" school enterprise cooperation education model in Applied Universities*,2020, (16),*Journal of higher education*,43-46
- [14]Jiafeng Liang,Jie Zhang,*Adhering to reform and innovation to empower the high-quality development of Vocational Education*,2019, (10),*Higher education in China*,31-33
- [15]Lihong Wang,Ping Liu,Xiaoyan Wang,*Exploration and practice of new engineering construction with multi-disciplinary intersection*,2018,14 (14).*Computer knowledge and technology*,157-158
- [16]Hui Gu,Ming Yuan,*Research on the cultivation path of vocational quality of Higher Vocational Students under the guidance of "craftsman spirit"*,2020,19 (04),*Journal of Nantong Shipping vocational and technical college*,71-75
- [17]Yiming Zhu, *Research on the construction scheme of high-level specialty group in Higher Vocational Colleges in the new era*,2020, (04),*Science and Technology Plaza*,30-37