

# Exploration on Construction Path of Vocational Education Informatization from the Perspective of Education Informatization 2.0

Li Xudong, Wu Xiaoyun

School of Transportation and Economic Management, Guangdong Communication Polytechnic  
Guangzhou, China

**Abstract**—Vocational education informatization construction is the key approach for China to strengthen international competence, and seek connotative development and teaching reform of vocational education. This paper first analyses the overall requirements from the “Education Informatization 2.0 Action Plan” issued by the Ministry of Education of China. Then it sets up the basic goals of vocational education informatization construction. Based on that, it proposes basic paths of vocational education informatization construction under the perspective of education informatization 2.0.

**Keywords**—*Education Informatization 2.0; Vocational Education; Informatization; Construction Path*

## I. INTRODUCTION

Vocational education informatization is an objective requirement for the sustainable development of social economy. [1] Vocational education informatization construction is the key approach for China to improve the international competitiveness of vocational education in China, enhance the development connotation of vocational education and promote the reform of vocational education teaching models [2]. Currently, the vocational education informatization construction in China faces problems such as weak information concept of vocational education, the information literacy of teachers remaining to be improved, the imperfect information security mechanism, and the weak internal and external conditions of information construction. For the purpose of promoting the process of vocational education informatization construction, we need to pay attention to the basic work of vocational education informatization, guarantee the implementation of software and hardware, improve the information level of teachers, create a high-quality vocational education information team, promote the construction of information resources, realize the balanced development of informatization, innovative vocational education informatization promotion models and adapt to the development of information-based society [3].

## II. OVERALL REQUIREMENTS FROM EDUCATION INFORMATIZATION 2.0 ACTION PLAN

In April 2018, the Education Informatization 2.0 Action Plan (JJ [2018] No. 6) issued by the Ministry of Education clearly put forward that the development goal of "three all, two improvement and one large" will be basically realized by 2022 through the implementation of the Education Informatization 2.0 Action Plan, that is, the teaching application covers all teachers, the learning application covers all right-age students, the digital campus construction covers all schools, the level of information application and the information literacy of teachers and students are generally improved, and the large "Internet + Education" platform is established to promote the transformation from special resources for education to great education resources, from improving the information technology application capability of teachers and students to comprehensively improving their information literacy, from fusion application to innovative development, strive to build a new model to educate talents under the "Internet+" condition, and develop a new model of Internet-based education service and explore new models of educational governance in the information age. Upgrade the construction of professional teaching resource library of vocational education and enrich the learning resource system of vocational education [4].

## III. BASIC GOALS OF THE VOCATIONAL EDUCATION INFORMATIZATION CONSTRUCTION FROM THE PERSPECTIVE OF EDUCATION INFORMATIZATION 2.0

Under the guidance of the Education Informatization 2.0 Action Plan issued by the Ministry of Education, vocational colleges have basically realized the development goal of "three all, two improvement and one large" by upgrading of the digital campus to the intelligent vocational education campus, namely covering all vocational education teachers through pan-learning online, professional teaching resource library, network learning space and other teaching applications, covering all right-age vocational education students through online open courses, mobile learning and other learning applications, and covering vocational colleges through the construction of intelligent school affairs platforms and other digital campuses, comprehensively improve the level of information application of management personnel, teachers and students and

information literacy of teachers and students through the information capacity improvement project, and building a large digital resource public service platform.

Promote the deep integration of information technology and intelligent technology into the overall process of education, teaching and management services through the construction of wisdom vocational education campuses; Promote the change of management mode of the school and enhance the management efficiency and level through the use of big data and artificial intelligence and other means; Build a learning environment where everyone can learn from time to time through promoting the co-building and sharing of digital resources, excellent teachers and educational data and help upgrade the educational service supply mode; Build the wisdom class and virtual factories and establish and improve the sustainable development mechanism of educational informatization through improving the information literacy of teachers and students, and help the information level of vocational education in China take its place in the front ranks of the world through the constructed networked, digital, intelligent, personalized and lifelong characteristic vocational education system.

#### IV. BASIC PATHS OF THE VOCATIONAL EDUCATION INFORMATIZATION CONSTRUCTION FROM THE PERSPECTIVE OF EDUCATION INFORMATIZATION 2.0

Vocational colleges need, in accordance with the requirements of the Education Informatization 2.0 Action Plan, to deepen the information infrastructure and promote the construction of intelligent campuses, improve the information literacy of teachers and students and improve the level of information application, create an intelligent school affairs platform and improve the management information level, and popularize digital resource services and deepen the reform of information-based teaching.

##### A. *Promote the construction of information infrastructure and intelligent campuses*

Build an intelligent, efficient and safe infrastructure network platform. Upgrade and reconstruct the machine room of the network center of the school, complete the expansion of the backbone network of information superhighway and construction of high-speed access network, and realize the integration of the Internet, campus broadcasting network, campus security network and other networks. Build the digital broadcasting network in the school, upgrade all campus security networks to the digital signaling system to realize the integration of the Internet, campus broadcasting network, campus security network and other networks, and strengthen the situation awareness of the school in terms of security and teaching order.

Build a digital system for the public service area in the school. Install a digital culture display system in the campus, such as large-screen television, touch integrated computer. The main entrances and exits of the school are equipped with the outdoor LED display screen. Explore the campus network functions under the conditions of new technology. Based on the promotion of CNGI network, explore the scheduling of campus assets, equipment, and energy to realize the digital and

intelligent tracking management under the conditions of IPv6 technology, 4G, 5G and "Internet of Things" technology. Transform the multimedia classroom into the wisdom classroom and use network technology to realize the classroom information interaction. Construct direct recording classrooms with classroom recording and broadcasting, interactive teaching, network broadcast, remote interactive training, video conference and other functions, and upgrade the facilities of standardized examination rooms.

Construct a public cloud service system in the school, and construct resource cloud and cloud storage supporting virtual services in large. Provide personalized storage, public cloud storage service and other services for departments and users, and provide conditions for realizing the mobile working and learning of teachers and students. Strengthen the construction of network information security.

##### B. *Improve the information literacy of teachers and students and the level of information application*

Establish an evaluation index system for information literacy of students and teachers and informatization work evaluation and incentive mechanism, incorporate the information literacy of students and teachers into the year-end performance evaluation indicators of departments, faculty and staff and incorporate the level of information application of teachers and students into the online course construction evaluation, teaching evaluation and usual performance evaluation of students through the daily teaching monitoring system.

Build a comprehensive informatization training mechanism and train all teachers in rotation in educational technology abilities; Regularly organize various forms of professional education and training for administrative staff and information staff, and establish a continuing education system for management position information; According to the needs of teaching information, offer information literacy related courses and training to students, and provide teachers with lectures, training, and information-based teaching competitions.

Increase the level of informatization application, introduce relevant management measures for information construction, incorporate digital network culture into the category of the construction of the whole campus culture, unite the enterprises and research institutions to carry out the topic research and horizontal service and explore and promote the reform of new teaching modes in the digital age.

Strengthen the construction of network and information security teams and improve the network security awareness. Constitute an information security team consisting of experts, full-time staff, and secondary unit administrators and improve the ability to cope with network crisis.

*C. Establish an intelligent platform for managing school affairs and improve its informatization*

Build an open and integrated foundation platform framework based on unified technical standards, achieve the unified information portal, unified identity authentication, unified data standards, unified authorization management, realize the whole transaction driving, whole process management for all types of business processes and support mobile working and one-stop business handling. Reconstruct and build various convenient business applications based on the business process.

Eliminate information islands based on the business system integrated and reserved by the intelligent school affairs platform. Build an intelligent digital resource management platform, innovate digital resource management models and provide learners with a one-stop learning environment with full learning trajectory, full coverage of teaching types, full-process teaching support, comprehensive teaching service, and wholly open platform standards.

Build the public data center in the school, integrate finance, assets, books, archives and other information resources to retain the business system and achieve the uniqueness of various business data sources, the interconnection of various business systems, and cooperative handling of various types of business.

Explore the decision support role of big data, analyze and organize the data of daily operation, management and service of the school, thus providing information support for decision makers at all levels, providing personalized planning for students' development, and offering teaching and scientific research suggestions for teachers.

*D. Popularize digital resource services and deepen the reform of information-based teaching*

Promote the construction of digital teaching resources, increase investment in information-based teaching resources expenditure, and open courses and professional teaching online. Through the construction of online open courses, professional teaching resource library, virtual simulation training center and other projects, the governments, schools, enterprises and industries conduct the joint development to promote the construction of microlectures, video lessons, virtual simulation, VR teaching, virtual factory, digital teaching materials and other resources and rely on the public storage system in the campus to realize the sharing of digital resources.

Launch a complete coverage campaign of the network learning space. Establish the network learning space construction and application specifications, rely on digital resources public service platform, pan-learning online platform, vocational education training platform to promote the construction and application of school leaders, management personnel, teachers, students and social training, establish personal lifelong e-learning portfolio and provide information support for X certificate implementation and social training.

Create an international digital resource characteristic brand and innovate the digital resource service model. Based on local resources, facing the regions (such as Guangdong-Hong Kong-

Macao Greater Bay Area) and responding to the "Belt and Road" initiative, provide a digital service public service platform supporting Chinese, English and other languages for Chinese and foreign educational audiences, and build it into the brand image of the public service platform for digital resources with the most abundant digital resources, the most professional education services and the most advanced management platform in Guangdong-Hong Kong-Macao Greater Bay Area.

Integrate new technologies such as Internet of Things and mobile computing to create a large "Internet + Education" resource platform and to create an intelligent, customized and personalized service model. Make full use of the existing digital resources of our school, and accelerate the transformation from education-specific resources to great educational resources by eliminating a batch, transforming a batch, and creating a batch.

Explore the research and practice of wisdom education. Build an intelligent learning system for 5G network, and build intelligent learning spaces such as online intelligent classroom, intelligent laboratory, and virtual factory in batches; Explore the records, transfer, exchanging, and authentication and other effective ways of intelligent learning effect based on new technologies such as blockchain and big data and form a ubiquitous and intelligent learning system; Build a batch of educational informatization academic communities. Take the application technology collaborative innovation center and skill master studio as the carrier; Carry out a research and pilot projects of wisdom education. Select qualified courses to carry out pilot projects of wisdom education, set up a course team to explore and practice wisdom education, form advanced experiences and excellent cases that can be promoted, promote the whole-process application of artificial intelligence in teaching, management, etc., use intelligent technology to accelerate the reform of personnel training mode and teaching methods, and explore the ubiquitous, flexible and intelligent new environment construction and application model of education and teaching.

## V. CONCLUSION

Vocational education informatization construction is the key approach for China to strengthen international competence, connotative development and teaching reform of vocational education. This paper first recognizes the overall requirements from the "Education Informatization 2.0 Action Plan" issued by the Ministry of Education of China. Then it sets up the basic goals of vocational education informatization construction. Based on that it proposes basic paths of vocational education informatization construction under the perspective of education informatization 2.0. Promote the deep integration of information technology and intelligent technology into the overall process of education, teaching and management services through the construction of wisdom vocational education campuses; Promote the change of management mode of the school and enhance the management efficiency and level through the use of big data and artificial intelligence and other means; Build a learning environment where everyone can learn from time to time through promoting the co-building and sharing of digital resources, excellent teachers and educational data and help upgrade the educational service supply mode;

Build the wisdom class and virtual factories and establish and improve the sustainable development mechanism of educational informatization through improving the information literacy of teachers and students, and help the information level of vocational education in China take its place in the front ranks of the world through the constructed networked, digital, intelligent, personalized and lifelong characteristic vocational education system.

#### ACKNOWLEDGMENT

Foundation Project—2018 Guangdong Provincial Educational Science 13th Five-Year Plan Project “Research on Application Mode of Blockchain Technology in Lifelong Vocational Education under the Perspective of Education Informatization 2.0” (Project Number: 2018GXJK311)

Author Note—Li Xudong (1975-), male, associate professor of School of Transportation and Economic Management, Guangdong Communication Polytechnic and the main research direction is vocational education. Wu Xiaoyun (1998-), female, student of School of Transportation and Economic Management, Guangdong Communication Polytechnic.

#### REFERENCES

- [1] Bing DONG. Analysis of the modern vocational education informatization construction under the new normal vision [J]. *Education and Vocation*, 2017 (18): 56-59.
- [2] Lili SHEN. Deviation and correction of vocational education informatization construction in China [J]. *Continue Education Research*, 2018 (09): 60-66.
- [3] Jingjing LIU, Jingyi MA. Necessity, problems and implementation path of vocational education informatization construction in China [J]. *Education and Vocation*, 2019(05): 18-23.
- [4] Notice of the Ministry of Education on Issuing the Education Informatization 2.0 Action Plan [EB/OL] (April 18, 2018) [October 12, 2018]. [http://www.moe.gov.cn/srcsite/A16/s3342/201804/t20180425\\_334188.html](http://www.moe.gov.cn/srcsite/A16/s3342/201804/t20180425_334188.html).