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Evolution and Prospect of Educational Informatization Development

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ABSTRACT
This paper explores the historical evolution of the development of education informatization, and taking the east-west Lake District of Wuhan as an example, discusses in detail the existing problems in the development of education informatization, and further probes into the future development path.

Keywords: *Evolution, Educational Informatization, Balanced development*

1. INTRODUCTION

Training talents to meet the needs of the information age is an important task of current education, especially basic education. Developing information technology education, striving to create digital education and realizing educational modernization are the key points of Wuhan's educational informationization work.

2. THE HISTORICAL EVOLUTION OF EDUCATION INFORMATIZATION

On April 20, 2020, Wu Hao released the concept of new infrastructure, clarifying that "new infrastructure" includes three aspects-information infrastructure, converged infrastructure and innovative infrastructure [1]. First, it includes communication network infrastructure represented by 5G, Internet of Things, industrial Internet and satellite Internet, new technology infrastructure represented by artificial intelligence, cloud computing and block-chain, and computing power infrastructure represented by data center and intelligent computing center. Second, it refers to the integrated infrastructure formed by deep application of Internet, big data, artificial intelligence and other technologies to support the transformation and upgrading of traditional infrastructure, such as intelligent transportation infrastructure and intelligent energy infrastructure. third, it refers to innovate infrastructure [1]. It mainly refers to the infrastructure with public welfare attributes that supports scientific research, technological development and product development, such as major scientific and technological infrastructure, scientific and educational infrastructure, industrial technological innovation infrastructure, etc. It can be seen from this that the "science and education infrastructure" related to information education is impressively listed. In 2020, education informatization is facing unprecedented opportunities.

China really started the construction of education informatization in the late 1990s. In 2001, the Ministry of Education officially listed information education as the key points of China's educational development, and in 2004, it made a strategic plan to implement the "Education Information Construction Project". In 2010, the Ministry of Education issued the Outline of the National Medium-and Long-Term Education Reform and Development Plan (2010-2020), which clarified the revolutionary impact of information technology on education development [2-5]; In 2012, the Ministry of Education issued the "Ten-Year Development Plan for Education Informatiza-tion (2011-2020)" (hereinafter referred to as the "Education Informatization Plan"), which established the development goals and plans for China's education informatization in the next ten years [4]; In 2016, the Ministry of Education issued the 13th Five-Year Plan for the Development of Education Informatization, deepening the medium and long-term development tasks and priorities of the development and application of education informatization in China [5]. In 2018, the Ministry of Education issued the Action Plan of Education Informatization 2.0, further promoting the development of education informatization [6].

At the beginning of 2020, a sudden pneumonia epidemic in COVID-19 swept the world from Wuhan,

and schools around the world were forced to stop offline teaching, and hundreds of millions of teachers and students switched to comprehensive online courses. This is a comprehensive test of the informatization level of education, including the quality and level of infrastructure construction, the functional development of education platform, the development of online resources of disciplines, the online supply of digital resources, the informatization literacy level of teachers and students, the quantity and quality of various Internet terminals, and the online office and management of functional departments at all levels. The development of educational informatization has become an important aspect of promoting economic development and strategic transformation in the post-epidemic era.

3. INFORMATIZATION CONSTRUCTION (2012-2020)

Since 2002, Wuhan's education system has initially established an information network application system for Wuhan's education with "new curriculum reform" as the core, "modern educational technology experimental school" as the foundation, "school-to-school connection" project as the starting point, and "Wuhan education cloud" as the core information network construction as the center of gravity. Especially since Wuhan was the first batch of pilot cities for the "Education Cloud" project in 2012, breakthrough progress has been made in the informatization "Three Links and Two Platforms" (i.e. Broadband network school-to-school connection, high-quality resource class-to-class connection, and network learning space people-to-people connection) project for primary and secondary schools in Wuhan. The network environment of schools has been greatly improved, high-quality education resources have become increasingly abundant, and informatization teaching has become increasingly popular.

3.1 Build "three links and two platforms"

Build a city-wide, reasonably distributed, safe and effective public service platform for education management and public service platform for education resources, and realize broadband network school-to-school access, high-quality resources class-to-class access, and network learning space people-to-people access.

3.2 Build the brand of Wuhan characteristic

Resources. Develop Wuhan characteristic digital education resources and gather them on the national digital education resources public service platform; make full use of national digital education resources to provide various forms of information services for promoting the deep integration of information technology and teaching.

3.3 Carry out large-scale application of educational resources

Combining with the actual situation in our city, explore effective methods and ways for the large-scale application of the national digital educational resources public service platform.

3.4 Realize the reform of teaching and learning methods.

Taking the space provided by the public service platform as the carrier, using the resources and services gathered by the platform, explore the reform of teaching and learning methods under the network conditions, promote teachers' professional growth, and cultivate students' learning ability.

3.5 Explore the information construction and application mechanism.

Widely absorb high-quality educational resources and services from educational institutions, enterprises and individuals. Explore the investment mechanism of educational resources for the common development of application and industry, which "attracts social capital investment, financial investment according to the average student funding, schools pay according to use, and teachers and students use free of charge on campus".

4. THE PRACTICE OF INFORMATION-BASED TEACHING AND LEARNING

In the integration of information technology and subject courses, the following three digital learning modes have been practiced:

(1) The meaning construction mode of "creating situations-autonomous learning" based on multimedia learning tools.

(2) The open learning mode of "problem discovery-resource utilization" of digital learning resources.

(3) The research-based learning mode of "theme inquiry and group cooperation" in the network learning environment.

The above is only the practice of three learning modes in the integration of information technology and subject courses in Wuhan. The integration of digital learning environment and subject courses is an all-round and whole-process integration. It not only requires the integration of information resources and information technology into subject courses, but also requires the teaching of subject courses to be based on modern

learning theories, thus constructing a digital learning model.

5. PROBLEMS AND CHALLENGES-TAKING THE DEVELOPMENT OF EDUCATIONAL INFORMATIZATION IN DONGXIHU DISTRICT OF WUHAN AS AN EXAMPLE

Although the development of educational informatization in Dongxihu District of Wuhan has made obvious progress, there is still a certain gap compared with other developed areas of educational informatization. The development level of educational informatization in Dongxihu District is still one of the important factors restricting the development of educational modernization. Mainly manifested in the following aspects:

(1) The development of educational informationization in the region is unbalanced

(2) The construction of digital education resources is out of touch with the demand

(3) The integration of information technology and education and teaching is not enough

(4) The level of education information management is not high

(5) The information literacy of the talent team needs to be improved urgently

6. TRANSFORMATION AND UPGRADING STAGE OF SMART EDUCATION

6.1 The implementation of the smart education environment improvement action, high level to build Wuhan smart education infrastructure covering the whole city.

A high broadband network covering primary and secondary schools in the city will be built, with the average class bandwidth gradually reaching 100M m. Gradually build a regional intelligent education wireless network based on 5G network, and realize seamless coverage, one-stop login and barrier-free switching of all primary and secondary schools. The coverage rate of multimedia classrooms, teachers' mobile terminals and smart classrooms all reached 100%.

6.2 The implementation of primary and secondary school classroom revolution, to promote the reform of primary and secondary school classroom teaching and learning methods.

Relying on Wuhan education cloud platform and intelligent classroom teaching environment, with the goal of "reducing burden and increasing efficiency", we insist on playing the main battle of classroom teaching, and carry out in-depth monthly activities on the theme of "one teacher, one excellent class, one lesson, one famous teacher" and "deep integration of information technology and classroom teaching" to promote large-scale, normalized and deep application.

6.3 Implementing innovative actions in resource supply mode to realize differentiated supply and intelligent services.

Innovating the way of resource supply, based on Wuhan education cloud, introducing intelligent service concepts and technologies, establishing a smart resource sharing service platform based on knowledge map, realizing active service, accurate service and personalized service of educational resources, and changing from "people looking for resources" to "resources looking for people".

6.4 Implement data-driven evaluation practice to promote the all-round development of students' morality, intelligence, physique, beauty and labor.

Implement the reform of students' comprehensive quality evaluation supported by big data, realize diversified, process-oriented, three-dimensional and data-based evaluation, comprehensively investigate the development of students' morality, intelligence, physique, beauty and labor, and support adaptive learning. Explore and promote the reform of the evaluation system of major examinations such as the senior high school entrance examination, get rid of the disadvantages of only results and only test scores, bring the all-round development of morality, intelligence, physique, beauty and labor into the evaluation scope, introduce intelligent evaluation technology and system, and explore the computer examination of some subjects.

6.5 Implementing actions to optimize educational governance capabilities and promoting the modernization of educational governance systems and governance capabilities.

To build a highly agile education government information system, relying on the construction of

Wuhan smart city and based on Wuhan education big data center, to break through data barriers between different business systems and completely break down information islands. To realize data-driven intelligent education decision-making and management, based on the education big data center, it integrates campus management data, dynamic data of teachers and students, government system data and social related industry data, etc.

7. CONCLUSION

Educational informatization is a gradual development process. In the situation of globalization blocked and epidemic prevention situation still grim, education informatization is very important for the development of education in all countries. It will play a more and more important role in promoting education reform, promoting education equity and improving education quality.

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