

# Changes in Focus of Educational Informatization Construction in Different Historical Periods in China

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**Abstract:** The development process of educational informatization has obvious phased characteristics. The research is based on Guonong Nan's division of the development stages of China's educational informatization, combined with various educational informatization policies promulgated since the 1980s, and summarizes the changes in the focus of educational informatization construction in different historical periods.

The development process of educational informatization has obvious stage characteristics, with its own development rules and paths. Each stage has both connection and evolution, and cannot be crossed or saved at will [1]. Since the starting point of China's informatization construction is relatively low, the national education department should not only draw on the advanced experience of other countries in the world during the same period, but also fully consider the support of external objective conditions such as China's information technology and information application ecology, so as to walk out a unique road with both Chinese characteristics and international standards.

Educational researchers in China generally set the 1980s as the starting time for the construction of educational informatization. According to Professor Guonong Nan's [2] point of view, the development stage of China's educational informatization can be divided into three periods: embryonic start (1980s-late 1990s), initial development (2000 -2009) and in-depth development (2010 -2020), which is consistent with the social development process since China's reform and opening up.

## 1. Initial Stage of Germination

The construction of educational informatization in our country began with Comrade Deng Xiaoping's speech at the National Conference on Education in April 1978. He proposed to use the more advanced media communication and application forms at that time to develop educational undertakings, which aroused people's extensive attention to audio-visual education. Limited by the technical means of information dissemination at that time, television and radio could only be used as the main means of supplementary education, and the early construction of educational informatization could only be limited to the field of "audio-visual education".

After entering the 1980s, the education of computer foundation began to unfold point by point and face by face. From 1982, when computer elective courses were piloted in secondary schools attached to several universities in Beijing, computer education has been a key area of educational informatization construction for 15 years. The coverage of computer education has also experienced a gradual expansion and deepening process from point to surface, from middle school to primary school to high school. In order to improve the quality of computer education, the Ministry of Education has set up various organizations related to computer education and launched various studies related to computer education. The early computer education in our country was mainly aimed at the basic education level in economically developed areas, which was decided by the high cost of computer equipment purchase and the basic conditions for large-scale promotion in the whole society. "Computer Education" was renamed as "Information Technology Education" in the

later period, and its rise is the basic feature of the initial stage of education informatization in our country [2].

In the long period when computer education has been popularized throughout the country, the construction of audio-visual education is also proceeding simultaneously. With the application of other information dissemination technologies, satellite TV is required to be applied to audio-visual education activities, which also provides guidelines for the construction of modern distance education in the late 1990s. In December 1997, the Ministry of Education issued a Notice on Issues Related to Distance Education in Colleges and Universities, officially opening up a new field of education informatization in China. Subsequently, the Ministry of Education has made clear in the form of documents a series of policies, objectives, tasks and implementation paths to promote the development of modern distance education. In the Action Plan for Revitalizing Education for the 21st Century, the State Council proposed "implementing the" Modern Distance Education Project ",forming an open education network and constructing a lifelong learning system". In March 1999, the Ministry of Education approved Tsinghua University, Beijing University of Posts and Telecommunications, Zhejiang University, Hunan University and the Central Radio and Television University to start the first batch of pilot universities for modern distance education, officially opening the prelude to construction.

In June 1999, the State Council of the CPC Central Committee promulgated the document "Decision on Deepening Education Reform and Promoting Quality Education in an All-round Way". The document proposes to "vigorously improve the level of modernization of educational technology and the level of educational informatization", "continue to improve diversified audio-visual education and computer-aided teaching", "use modern distance education networks to provide lifelong learning opportunities for members of society and provide education suitable for local needs in rural and remote areas". For the first time, the document puts forward the concept of "education informatization", which marks the beginning of the initial development stage of China's education informatization construction.

## **2. The Initial Stage of Development**

The policy changes worth paying attention to during this period are that the application of network technology has enabled the country to start to have better ways and means to solve and improve the educational injustice caused by economic and historical reasons. The country has tried its best to narrow the gap in educational conditions in various regions by means of policy inclination and special fund support, which has played a positive role in promoting the process of educational modernization in our country. The construction of modern distance education based on network constitutes the basic feature of the early development stage of education informatization in our country, namely the rise of network education [2].

At the same time, "education informatization" as a special term for information construction in the field of education began to appear frequently in national policy documents, and new system contents were formed and established on this basis. In July 2001, the Ministry of Education put forward in the Tenth Five-Year Plan of the National Education, "Facing the challenges of the future, we will strive to achieve major breakthroughs in the construction of a lifelong education system, modernization of educational means and educational informatization", which declared that educational informatization has been included in the national key construction projects. Shortly thereafter, the Education Management Information Standards (Part I: School Management Information Standards) and the Basic Education Teaching Resources Metadata Specification CELTS-42 were successively launched. The State Council approved the Ministry of Education's "2003-2007 Action Plan for Revitalizing Education" and explicitly listed the construction of educational informatization as one of the six major educational projects. In May 2006, the "National Informatization Development Strategy 2006-2020" was released, and education informatization was promoted to the level of national informatization construction. With the continuous expansion and enrichment of the connotation and construction system of educational informatization construction,

it has become a reality that educational informatization has entered a period of in-depth development.

### **3. In-Depth Development Stage**

After entering the period of in-depth development, the construction of educational informatization has shown the following characteristics.

#### **3.1 Participating Organizations Are More Diversified**

During this period, the construction of educational informatization was no longer confined to education departments, and the participating organizations showed obvious characteristics of diversification. In May 2010, the Ministry of Education, the Ministry of Human Resources and Social Security and the Ministry of Finance jointly issued "Opinions on the Implementation of the National Model School Construction Plan for the Reform and Development of Secondary Vocational Education". In October 2012, nine ministries and commissions, including the Ministry of Education, the National Development and Reform Commission, the Ministry of Finance and the Ministry of Industry and Information Technology, issued "Notice on Accelerating the Current Key Work of Education Informatization". In November 2014, the Ministry of Education, the Ministry of Finance, the National Development and Reform Commission, the Ministry of Industry and Information Technology and the People's Bank of China jointly issued the "Implementation Plan for Building an Effective Mechanism to Expand the Coverage of High-quality Education Resources by Means of Information Technology ..." and more and more institutions participated in the specific affairs of education information construction. This shows that the country has fully realized that the informatization construction in the field of education cannot be separated from the national informatization construction system. The sound operation of the education system needs more supporting policies from the administrative departments, such as funding mechanism, system reform, basic information environment construction, etc. The joint participation of multiple departments can provide a strong guarantee for the smooth implementation of educational informatization and the realization of phased objectives. The construction of educational informatization has begun to embark on a new development road that is more open and diversified.

#### **3.2 To Promote the Field of More Complete, Further Strengthen Organizational Support**

In the initial stage and the initial stage of development, the main content of education informatization construction is generally only aimed at a certain sub domain, and the organizational form to ensure the promotion of work is generally to set up a special leading group, center or committee. For example, in January 1984, the State Education Commission set up the "National Computer Education Test Center for Secondary Schools" to promote computer education. Its promotion organization is affiliated to the Ministry of Education. Its promotion task is relatively clear and single. Its implementation can only be completed by a single line of the education system, and its cycle is relatively long.

After entering the stage of in-depth development, the global construction of educational informatization has become the only task for it to push forward. The organizational form to ensure its advancement has also been further strengthened. The responsibilities and tasks of all levels of government in the process of advancement have also been more clearly and carefully divided. In August 2011, the Ministry of Education Information Leading Group was established, headed by Yuan Guiren, Minister of Education, with an Education Information Promotion Office to be responsible for the promotion of education information. The establishment of the leading group provides the most powerful guarantee in organizational form for further implementing the education informatization policy and speeding up the construction process of education informatization. The implementation results of the construction policies in each sub domain of education informatization will be fed back and improved under the supervision and management of this group. Moreover, the Ten-Year Development Plan for Education Informatization (2011-2020), issued by the Ministry of Education in March 2012, also clearly points out that "governments at all levels are the main

responsibility bodies of education informatization, and education informatization should be promoted mainly by provincial governments"[3]. This directive has clearly defined the responsibilities of all levels of government in the process of promoting the construction of educational informatization, and it is an obvious manifestation of the organizational form to strengthen its protection.

### **3.3 The Construction form is More Detailed**

Compared with the past, the construction of educational informatization pays more attention to phased planning, inspection, summary and revision. The construction scope of various technical specification systems is continuously expanded and completed, and the overall construction content presents more refined features. In March 2012, the Ministry of Education issued the "Ten-Year Development Plan for Education Informatization (2011-2020)", in June 2016, the Ministry of Education issued the "13th Five-Year Plan for Education Informatization", which has issued the key points of annual education informatization work every year since 2014, and in August 2013, the Ministry of Education has established a monthly report on education informatization work and a monthly video scheduling system. From the above series of measures, it can be seen that the Ministry of Education plans and decomposes the construction work of education informatization according to the cycle length of ten years, five years, every year and every month, which not only establishes the medium and long-term development goals and tasks, but also strengthens the construction effect in each small cycle and makes appropriate adjustments in the specific implementation process. This kind of construction thought has guaranteed the education informationization development process to be leisurely and orderly.

Secondly, as an independent information construction engineering system, education informatization is constantly expanding and enriching its content, and the internal technical specification system is constantly improving and optimizing. Among them, a series of special projects such as the construction and application of educational public service platform, the construction of national top-quality open courses, the construction of "three links and two platforms", the co-construction and sharing of digital resources in vocational schools, the investment mechanism of educational resources construction, and the exploration and establishment of application principles are all detailed manifestations in specific application and construction fields. In addition, the introduction of relevant technical specification systems, such as the norms and standards for the construction of school management information, the principles for the review of digital educational resources on the national public service platform for educational resources, procedures and evaluation index systems has also ensured the effectiveness of relevant construction and application in detail.

### **3.4 The Goal of Educational Informatization Construction is Clearer and More Magnificent**

With the continuous acceleration of the construction process, its goal has gradually departed from the early thought of "building to solve a certain educational development problem" and the long-term outlook is clearer and grander. From "striving to build a lifelong education system" to "strengthening the construction of a lifelong learning network and service platform"[4], and to Xi Jinping's construction expectation of "building a networked, digital, personalized and lifelong education system" at the international education informatization conference, this has redefined the original meaning of the word "education"-educational activities are no longer limited by places, times and places; Education is no longer "forcing or guiding the educated to accept specific knowledge, rules, information, skills, techniques, etc."[5], with more emphasis on the active learning of the educated; Personal learning media is no longer limited to books, learning interests can be met to the greatest extent, and learning period extends from youth to life ..., all of which will profoundly affect and change the development process of individuals and the running situation of the whole society. During this period, the construction paid more attention to the learning experience, methods and forms, which has made full progress compared with the past.

#### **4. Concluding Remarks**

History always goes forward. As far as the construction of educational informatization is concerned, it includes not only the evolution and upgrading of information technology itself, but also the continuous subversion of applied ecology in the educational field. No matter how the focus of educational informatization changes, "development" will be its eternal theme and this benefit will eventually feed back to education.

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