

Research on the Path of Digital Transformation in Chinese Higher Education

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Abstract: In the era of digital economy, digital transformation is an inevitable choice for higher education to adapt to the future development of education and meet the personalized learning needs of students, a necessary way to improve the quality of talent cultivation in colleges, and an urgent requirement to achieve the connotative development of higher education. With the in-depth promotion and application of information technology in the field of education, the role of technological innovation in transforming the shape of education, expanding educational opportunities and innovating learning styles has become increasingly prominent. The article analyzes the intrinsic implication of digital transformation in the development of Chinese higher education and the current problems, and puts forward the implementation path for the digital development of Chinese higher education in the context of digital transformation. The in-depth promotion and application of information technology in education should be promoted through the development path of building a digital education resource platform based on technology integration, a data-driven education and teaching model as the core, an open sharing education and teaching mechanism, and a service-oriented education management system, so as to accelerate the transformation of education mode, expand educational opportunities, innovate the learning mode, and improve the quality of talent cultivation.

1. Introduction

At present, driven by innovative development and technological progress, a new round of scientific and technological revolution and industrial transformation is accelerating, accompanied by increasing connectivity and the wide application of various devices and digital software, digital transformation is changing society, the labor market and the future form of work [1]. In this process, the importance of education is becoming more and more prominent. The digitalization of education is a response to the development of the digital era and an inevitable choice to promote the modernization of education [2]. The field of modern education based on information technology is undergoing profound changes, which has a profound impact on traditional teaching methods, learning methods and evaluation modes. At present, domestic and foreign research on the practical path of digital transformation in higher education is still in its infancy, and how to promote the digital transformation of higher education is subject to further innovation and exploration. This paper further explores the development law of digital transformation in higher education, and

provides path references for digital transformation of higher education according to the current status of digital transformation in higher education, in order to promote the deep integration of information between education and teaching, so as to help higher education develop in a higher quality [3].

2. The Inherent Meaning of Digital Transformation in Higher Education

2.1. The essential connotation of digital transformation in higher education

The essential connotation of digital transformation in higher education refers to the integration of digital technology with traditional education and the construction of a new learning environment based on the Internet and mobile networks [4]. It is mainly the following three aspects.

First, digital transformation makes higher education more flexible and personalized. Through the application of digital technology, students can choose the content and mode of learning according to their own interests and needs, and are no longer limited to the traditional classroom teaching mode. At the same time, digital transformation can also provide more diverse learning resources and tools to meet students' different learning styles and needs. This kind of personalized learning can better stimulate students' interest and motivation in learning and enhance the learning effect.

Second, digital transformation promotes innovation and cooperation in higher education. Through the application of digital technology, colleges and universities can carry out online courses, virtual laboratories, remote cooperation and other innovative teaching modes, which breaks the time and space limitations of traditional education and provides students with broader learning opportunities and resources. At the same time, digital transformation can also promote cooperation and exchange between universities. Through online platforms and tools, universities can share teaching resources, carry out joint research projects, strengthen the training and exchange of faculty, and improve the overall level of education.

Third, digital transformation makes higher education more intelligent and data-driven. Through the application of digital technology, colleges and universities can collect and analyze students' learning data, understand their learning habits, interests and abilities, and provide a scientific basis for personalized education. At the same time, digital transformation can also make use of artificial intelligence and big data technology to develop intelligent education systems and learning aids, provide personalized learning recommendations and feedback, and help students better master knowledge and improve their learning results. Digital transformation provides an important opportunity and support for the intelligent development of higher education.

2.2. The basic features of digital transformation in higher education

The basic features of digital transformation in higher education refer to the process of higher education institutions using advanced information technology means for teaching, management and service in the digital era. It is mainly in the following three aspects.

First, the transformation of teaching mode. The traditional teaching mode is mainly based on face-to-face teaching, and students need to go to the campus to attend classes, while after the digital transformation, teaching can be carried out through online platforms, and students can receive education through the Internet anytime and anywhere. This transformation makes education more flexible and convenient.

Second, sharing and opening up educational resources. Under the traditional education model, educational resources are mainly provided within universities, while after the digital transformation, higher education resources can be shared and opened through the Internet. This means that students can choose suitable learning contents from high-quality educational resources worldwide, which

improves the effective use of educational resources and the freedom of learning.

Third, improvements in teaching assessment and learning support. While traditional teaching assessment is mainly based on examinations, after digital transformation, teaching assessment can be carried out through online quizzes and homework submissions, etc., so that students can learn and communicate better.

3. Analysis of the Dilemma of Digital Transformation in Higher Education

3.1. Lack of complete technical support

Digital transformation is an inevitable trend in the development of higher education, however, at present, digital transformation is still facing some problems in terms of technical support [5]. First of all, higher education institutions often face a lack of technical infrastructure in the process of digital transformation. The network environment and hardware equipment in many schools are not perfect and cannot meet the needs of digital education. Second, digital transformation lacks the support of professional and technical talents. Although the application of digital technology in the field of education has been relatively mature, there is a lack of professional technical talents in higher education institutions, which cannot make full use of digital technology to improve the quality of education and teaching. Finally, digital transformation faces the challenge of technological renewal. With the continuous development of science and technology, higher education institutions must constantly keep up with the latest digital technology to adapt to the ever-changing technological environment. However, due to financial and resource constraints, many higher education institutions are unable to update their technological equipment in a timely manner, resulting in the process of digital transformation being hindered.

3.2. Weak degree of integration and innovation

Although the application of digital technology in higher education has made some progress in recent years, there is still the problem that the degree of integration and innovation is not deep. First of all, some colleges and universities in the process of digital transformation still have the traditional teaching mode of fixation, for the application of digital technology is not active, which leads to the monotonous teaching mode, the students' learning mode and teachers' teaching methods cannot be effectively changed and innovated. Second, the degree of integration of educational resources is insufficient. Although some colleges and universities have opened online courses, these courses are often simply transferring the traditional courses to the online platform, and do not make full use of the advantages brought by digital technology. Finally, colleges and universities have insufficient knowledge and ability to apply digital technology. Some teachers have low understanding and application ability of digital technology, lack of correct understanding of digital transformation, and the investment and support of the university in the process of digital transformation is also relatively insufficient, resulting in the application of digital technology is limited to a certain extent.

3.3. Insufficient degree of open sharing

In the traditional education model, the transmission of knowledge mainly relies on face-to-face communication between teachers and students, and the circulation of information is limited by time and space. In the context of digital transformation, the Internet and new technologies can be used to break the restrictions of time and space and realize the sharing and opening of educational resources. However, in the current process of digital transformation in higher education, there are still some

problems with the insufficient degree of open sharing. Some colleges and universities and educational institutions still hold a conservative attitude towards the sharing of educational resources, and there is a certain degree of closure. This leads to the waste of educational resources and duplication of construction, and fails to give full play to the advantages of digital transformation. In addition, in terms of the interoperability of educational platforms and resources. Numerous educational platforms and resource libraries currently exist, but their interconnection and sharing are not smooth. This brings certain troubles to students and teachers in using and accessing educational resources, and also limits the sharing and utilization efficiency of educational resources.

3.4. Backwardness of the current teaching mode

The backwardness of the current teaching mode is mainly manifested in the following aspects. First of all, the traditional face-to-face teaching mode can no longer meet the educational needs of today's information age. In the era of digital transformation, students need more interaction and participation, while the one-way teaching mode of traditional classroom teaching will limit the development of students' dispersive thinking and the enhancement of innovation ability. Secondly, the traditional teaching mode has certain limitations in resource sharing. In traditional teaching, teachers and students often have limited learning resources and can only rely on textbooks and teachers' lectures. However, with the popularization of the Internet and the development of digital technology, students can access richer and more diverse learning resources through the Internet. Finally, the traditional teaching mode lacks personalized and differentiated teaching methods. Each student's learning habits, learning style and learning progress are different, but the traditional teaching mode often fails to meet the needs of students' personalized learning.

4. Development Path of Digital Transformation in Higher Education

4.1. Build a digital education resource platform based on technology integration

The National Education Conference proposed "to build a ubiquitous and accessible, intelligent and convenient, fair and high-quality education service system to meet the people's growing demand for quality education". This requires that higher education should focus on the goal of "facing everyone, adapting to personalized learning, and improving the quality of talent cultivation", digitally convert all kinds of educational resources, and provide learners with high-quality learning resources and services. In this process, it is necessary to apply various means of information technology, integrate diversified teaching resources, as well as cooperate among diversified learning modes, ultimately forming an open, shared and interconnected education system. Therefore, the digital transformation of higher education first needs to build an open, shared and interconnected digital education resources platform, with digital education resources platform as the carrier, integration of various teaching resources and convergence and sharing [6]. At the same time, it is also necessary to build a complete technical support system, technical support and management of hardware and software involved in platform construction, to ensure that the platform construction and application of safe and efficient.

4.2. Construct data-driven education teaching mode change as the core

The data-driven teaching mode refers to the use of big data, artificial intelligence and other technologies to carry out data collection, data analysis and data prediction of the teaching process, so as to provide personalized learning services for students, improve their learning ability and innovation ability, and realize their personalized development [7]. Under the background of digital

transformation, the new generation of information technology represented by big data, artificial intelligence, Internet of Things and other technologies has penetrated into teaching activities [8], and has changed the teaching and learning methods while helping colleges and universities to improve teaching efficiency and quality. The new generation of information technology represented by big data provides technical guarantee for the digital transformation of higher education, and through the collection, storage and analysis of massive data such as learner behavior and learning results, it can provide personalized learning services for learners and improve students' learning ability and innovation ability. The digital transformation of higher education is not only a transformation of the education concept, education model and education management to digitalization, but also an inevitable choice for realizing the change of education and teaching mode in colleges and universities [9].

4.3. Constructing the change of education and teaching mechanism characterized by openness and sharing

Educational teaching mechanism change refers to the need to adapt to the requirements of the development of higher education in the new era, in order to realize the high-quality development of higher education, it is necessary to carry out changes in the organization and management of education and teaching, the allocation of resources, the provision of services and other aspects of the operational mechanism of education and teaching. At present, in the practice of digital transformation in Chinese higher education, the construction of digital resource platforms is mainly dominated by schools, while the construction of public service platforms is mainly led by the government. Under this model, the degree of sharing of digital resources within the university is not high, and some universities cannot even protect the rights and interests of teachers and students in the use of digital learning resources. In the "double first-class" construction, the digital transformation of colleges and universities is mainly promoted by the schools themselves, lack of deep cooperation with social capital, and the funds needed for digital transformation mainly come from the school's input, and lack of effective incentives for the community to open and share. Therefore, in order to promote the digital transformation of higher education, it is necessary to build a change in education and teaching mechanism characterized by openness and sharing, form a model of building and sharing digital education resources between colleges and universities, society, enterprises and the government, so as to promote the high-quality development of higher education.

4.4. Constructing service supply-oriented changes in the education governance system

From the perspective of the education governance system, the digital transformation of higher education should realize the transformation from "management" to "service", and it is necessary to build a service supply-oriented education governance system. The education governance system is a process of collaborative governance among the government, schools, society and other multiple subjects, and is a dynamic system of democratic participation, coordination and cooperation among multiple subjects. In the context of the new round of scientific and technological revolution and industrial change, the traditional education governance model can no longer adapt to the requirements of the digital transformation of higher education [10]. Based on this, to build a service supply-oriented education governance system, we should actively promote the collaborative governance of the government, colleges and universities, society and other multiple subjects, in order to promote the effective performance of the government's duties, colleges and universities to improve the vitality and quality of school running, and the society's participation in the education governance capacity and level, and to promote the realization of the new form of education that "everyone learns, can learn everywhere, and can learn at all times". The new form of education can

be realized everywhere and at all times.

5. Conclusion

Digital transformation of higher education is a necessary way to realize high-quality development. In today's information age, the continuous progress and application of digital technology have brought unprecedented opportunities and challenges to higher education. In the process of digital transformation in higher education, it is necessary to take the enhancement of digital literacy as an important goal, the promotion of changes in teaching mode as a core task, the realization of open sharing as an important direction, and the promotion of service supply-oriented as a fundamental requirement. In order to adapt to this transformation, we need to build a digital education resource platform based on technological integration, a data-driven education and teaching model, an education and teaching mechanism characterized by openness and sharing, and a service-oriented education governance system. At the same time, the government, colleges and universities, enterprises and other subjects need to work closely together to promote the smooth progress of the digital transformation in higher education.

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