



Higher Education Digital Platform Development: Challenges and Recommendations

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Abstract. The integration of digital technology and education has changed the traditional way of education and become an important breakthrough in shaping a new advantage of education development in China. To build a strong education country, the leading one is higher education, so the construction of digital platform in higher education has made certain achievements in recent years, but there are still challenges such as insufficient platform popularization, lack of subject literacy, insufficient technical maturity and imperfect system construction. To address this, multiple parties should work together to build a perfect digital governance mechanism for higher education, improve institutional construction, incentivize the implementation of policies by all subjects, improve the digital literacy of teachers and students in higher education, and realize platform technological innovation and synergy, so as to jointly promote the construction of digital platforms in higher education. Digital technology empowers higher education, promotes the high-quality development of higher education, and provides a strong guarantee for the realization of Chinese-style education modernization.

Keywords: higher education, digital platform, institution building

1 Introduction

In presiding over the fifth collective study session of the Political Bureau of the CPC Central Committee, President Xi pointed out that "the digitization of education is an important breakthrough for China to open up a new track of education development and shape a new advantage in education development." [1] President Xi's important exposition has profoundly revealed the key role of education digitization, and pointed out the direction and path for grasping the opportunity of the new round of scientific and technological revolution and the deepening development of industrial change, and building a strong educational country. At present, Chinese higher education has entered the stage of popularization, and the high-quality development of higher education has become the theme of the times. The construction of digital platforms and digital technology-enabled teaching practice activities, iterating the traditional education model, has become an important initiative in the digital construction of higher educa-

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tion. Promoting the construction of higher education digital platform is conducive to the modernization and development of Chinese education, and is of great significance to the construction of a strong socialist education country with Chinese characteristics. Therefore, the challenges arising in the development of the higher education digital platform at this stage should be deeply analyzed, and the problems arising in the process should be proactively solved to promote the construction of the higher education digitalization system.

2 Background to the Development of Digital Platforms in Higher Education

At present, China's higher education has entered the stage of popularization, and the high-quality development of higher education has become the theme of the times. The report of the 20th Party Congress puts forward "promoting the digitization of education" [2], and the reform of higher education digitization has been deepened, and the proportion of teachers using blended teaching in colleges and universities has been increased from 34.8% before the epidemic to 84.2%, and a whole set of digital development plans for higher education with Chinese characteristics, including concepts, technologies, standards, methods and evaluations, etc., has basically been formed. Higher education digital development program.

In recent years, the Ministry of Education has supported the construction of more than 30 public online course platforms and technology platforms for comprehensive and specialized higher education, providing strong support for the digital reform and high-quality development of higher education. In addition, many enterprises and organizations (including the self-research teams of digital platforms in some universities) have also launched higher education digital teaching platforms that serve the whole process of teaching and learning for teachers and students in universities. Although different platforms have similarities and differences in functions and features, they have obvious advantages and potentials compared with traditional teaching methods in terms of teaching effect, learning experience, and accessibility and richness of educational resources^[3]. Currently, the integration of digital technology with teaching elements has developed a new curriculum model (as shown in figure 1).

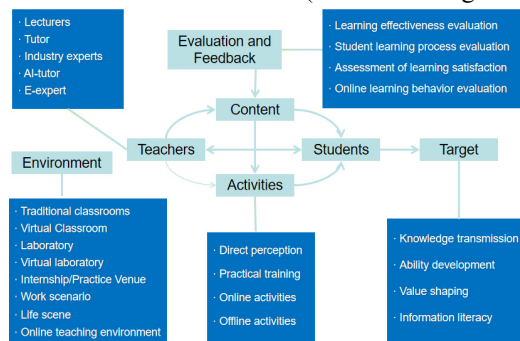


Fig. 1. Digital teaching mode diagram

Behind the construction of the higher education digital platform is a series of guidelines and policies. 2010, the Chinese government promulgated the "National Medium- and Long-Term Education Reform and Development Plan (2010-2020)"^[4], which puts forward the overall construction goal of "strengthening the development and application of high-quality educational resources and strengthening the application of information technology". In 2013, Zhanyuan Du, Vice Minister of Education of China, put forward in his article "The Deep Integration of Information Technology and Education - A New Beginning for China's Education Informatization" that the work of education informatization should be organized in terms of the requirements of the goals of education and teaching and the needs of the learners, and with the goal of promoting the application of information technology in education and teaching and the changes of the mode of teaching and the mode of learning. Education informatization work. The leading national policy and the endogenous development of the education system has quietly formed a synergy, which sowed the seeds of the development of domestic higher education digitization.

In July 2021, the Ministry of Education issued the "Guiding Opinions on Promoting the Construction of New Educational Infrastructure to Build a High-Quality Educational Support System", which put forward the need to take the first constructive step in the digital transformation of education by iteratively upgrading, updating and improving, and continuing to build digital platforms for higher education^[5].

With the progress of science and technology and the growth of the digital talent team, the construction of the higher education digital system is constantly improving. The construction of the higher education digitization platform is an inevitable demand for the development of the digital era and an important initiative for building a strong educational country, which is conducive to promoting the further development of higher education.

3 Status and Challenges of Higher Education Digital Platforms

At this stage, the development of China's higher education digital platform has made certain achievements, differentiated platforms to meet the needs of different user groups, but the platform construction as a whole is still in its infancy, and the specific use and governance of higher education digital platforms in colleges and universities are still in the exploratory stage, and higher education digital platforms are still faced with a number of challenges in the specific use of higher education digital platforms.

3.1 Classification and Features of Higher Education Digital Platforms

According to functional division, the current higher education digital platforms in China are mainly divided into the following five categories: 1) Open course platforms represented by China University MOOC (Mucue) and Wisdom Tree Network (Zhi Zhi). 2) New smart teaching solution platforms represented by Rain Classroom, which help teachers freely select and customize teaching resources according to teaching

needs, including courseware, exercises, experiments, etc. (3) Online classroom management platform represented by Classroom Pie, which is designed to help teachers conveniently manage their classes and deal with students' homework. (4) Professional teaching platforms for vertical classrooms represented by u-platform and easy cloud classroom, which are famous for their professionalism. (5) Comprehensive platforms represented by Superstar Learning Channel. This kind of platform integrates the functions of multiple platforms, and simultaneously realizes the teaching needs of online courses and classroom management.

At present, the higher education digital platform has the following characteristics: 1) strong public attributes and outstanding service capabilities. 2) Low functional overlap, promoting combined teaching. 3) Realization of resource integration and facilitation of content delivery.

3.2 Challenges in the Development of Digital Platforms for Higher Education

Lack of Platform Penetration

Although driven by policy, the Ministry of Education has supported the construction of more than 30 public online course platforms and technology platforms for comprehensive and specialized higher education, and has comprehensively promoted the use of higher education digital platforms. However, at present, the higher education digital platform has not yet realized the full coverage of colleges and universities. On the one hand, for the regions with relatively backward level of science and technology, it is difficult to use the higher education digital platform, and they do not yet have the conditions such as equipment and technology to use the platform. On the other hand, some college administrators do not pay enough attention to the requirement of higher education digitalization, neglecting the construction of supporting facilities for higher education digital platform, or lack of understanding of higher education digital platform, which leads to a more conservative attitude, and did not really carry out the construction and promotion of higher education digital platform, which hinders the promotion and use of higher education digital platform.

Lack of Literacy Among Platform Users

The digital platform for higher education is essentially a process of integrating curriculum resources, improving the level of educational quality, and facilitating teaching and learning through digital technology. This requires that the participants of the platform, i.e. college teachers and students, have a high level of digital literacy. However, in the process of real use, some college teachers are influenced by traditional teaching ideas and teaching habits, and they lack a correct understanding of the use of higher education digital platforms, thus treating higher education digital platforms with a negative attitude. Some students have insufficient digital literacy, lack the awareness of active learning and systematic learning in the learning process, are distracted, have low learning efficiency, and the quality of learning needs to be improved. In the digital era, improving digital literacy has become a mandatory course for the subjects of higher

education, and teachers and students of colleges and universities need to establish a good cooperative relationship for platform use, and jointly cope with the opportunities and challenges of the digital era.

Lack of Platform Technology Maturity

In the process of use, the higher education digital platform needs to have good performance such as fast page response time and high IIS connection number to meet the needs of a large number of users accessing the platform. However, in actual use, due to the insufficiency of platform technology and limited data processing capability, problems such as platform page lagging, failure to load, or even platform unresponsiveness and crash occur from time to time, causing great inconvenience to platform users. In the process of online teaching and examination, it is difficult to circumvent the problem of students utilizing platform loopholes for academic cheating, which causes inconvenience to the teaching work^[6]. In addition, due to the independent operation of the platforms, the overlap of functions is low, and it is impossible to realize the interconnection of information, forming a "data island", which improves the difficulty of information managers such as college teachers, and reduces the efficiency of their work^[7]. At the same time, it also brings privacy problems such as data leakage^[8]. The immaturity of the platform's technology creates a negative experience, which greatly affects the development of higher education digitization and the promotion of the platform's use.

Institutional Development Still Needs to be Improved

The construction of higher education digitization platforms has been progressively carried out under the guidance of policies, but the construction of related systems still needs to be improved. In the actual implementation process, at the national level, the top-level design is relatively late, lack of macro development strategic objectives and plans, and insufficient incentives for each participant in the higher education digital platform, which is not conducive to the improvement of its enthusiasm^[9]. At the departmental level, the support and supervision of the promotion and use of the higher education digital platform is unclear in terms of the division of powers and responsibilities and the distribution of benefits, and there is a lack of leading departments specifically responsible for the construction of the higher education digital platform, which makes it difficult to form a systematic norm. At the individual level, there is a lack of talents to guide the specific construction work under the guidance of the current policy, insufficient training for the main body of the platform, and a lack of institutional guarantee for the delivery of talents for the construction of higher education digital platform^[10]. The difference between digital teaching and traditional teaching methods requires a stronger guarantee at the institutional level to promote the construction and promotion of the use of higher education digital platform.

4 Recommendations for the Development of Digital Platforms in Higher Education

The steady development of digitalization in higher education must be achieved with a sound digital governance mechanism and transformation framework for higher education teaching (as shown in figure 2). Digital governance in higher education is a comprehensive process that includes policy formulation, implementation, regulation, and evaluation, covering various stakeholders and aspects of the management and optimization of digital resources and services in higher education. The teaching of higher education is also a complex system that includes elements such as institutions, majors, courses and teaching, teachers, students, and teaching quality assurance systems. These elements interact with each other and are also influenced by external factors such as society, politics, economy, and technology.

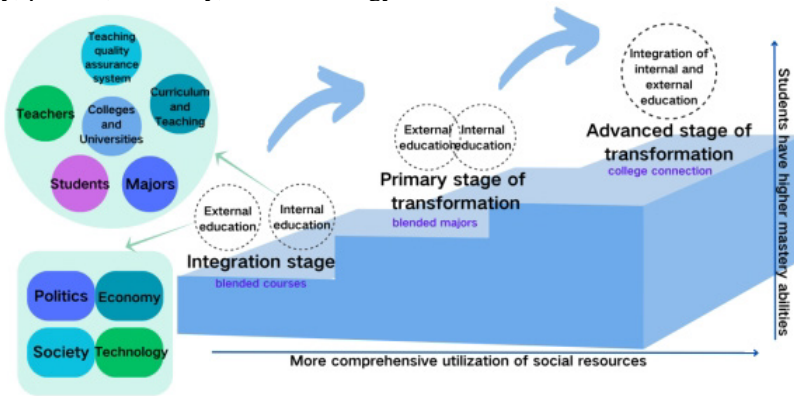


Fig. 2. Framework for Digital Transformation of Higher Education Teaching

Faced with the constantly changing environment of higher education governance, all stakeholders in higher education governance should keep up with the times, cultivate digital governance thinking, improve digital governance capabilities, clarify the advantages of digital governance in higher education, and actively participate in the practice of digital governance in higher education.

4.1 Institutional Design and Planning

At the level of macro national strategic layout, education authorities need to formulate strategic planning and top-level design for digital governance of higher education according to the current actual situation and future development trend, clearly define the development direction, strategic path and core tasks of digital governance of higher education, specify long-term and short-term goals, implement overall planning and timely dynamic adjustment, and build a forward-looking action framework for digital governance of higher education on the basis of unified standards. Construct a forward-looking action framework for the digital governance of higher education on the basis of unified standards. To formulate differentiated special policy documents on

digital governance of higher education according to the characteristics of different regions and colleges and universities, and make efforts to promote the balanced development of higher education resources among regions. And participate in allocating necessary resources, including financial funds, technical support and talent training, to support the effective implementation of digital governance in higher education.

At the meso level of the overall planning of higher education development, local governments should actively guide the joint governance and cooperation of multiple subjects, clarify the responsibilities and relationships of each subject, establish a comprehensive quality assessment system for higher education digitization on the basis of national macro policies and the current situation of higher education digitization in the region, regularly assess the quality of education and the effect of technology application, and adjust and optimize the relevant policies and resource allocation according to the results of the assessment. optimize relevant policies and resource allocation.

4.2 Implementation and Innovation in Higher Education

As the micro-body of higher education digitization, colleges and universities are important parts of the construction and implementation of the digital governance system of higher education. Strengthening the construction of digital infrastructure and the construction of the higher education digital talent guarantee system is the top priority for the digitalization of higher education in colleges and universities. Colleges and universities should increase the investment and construction of campus network and other infrastructure, optimize the management of digital professionals in the introduction, training, selection and appointment, and provide a potential development environment for digital professionals. At the same time, organizing digital training for teachers and students at the right time to meet various needs and different course demands, and providing strong technical and human resources support for the digital governance of higher education. ^[11]

College teachers, as the direct subject of the implementation of higher education digitization, should establish the concept of lifelong learning, pay attention to the latest developments in the field of education science and technology, combine the development of the times and technological changes to change the concept of education^[12], cultivate digital literacy, fully understand the important role of digital technology in teaching, combine the characteristics of different disciplines with the possible innovative application of digital technology, and proactively integrate digital technology into the management of teaching and learning. Specifically, the digital teaching ability structure of university teachers is shown in the figure 3.

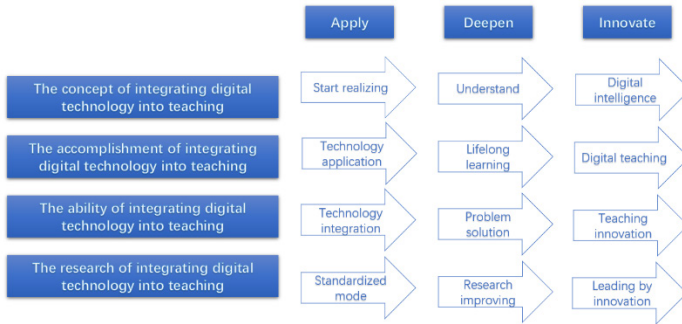


Fig. 3. The Structure of Digital Teaching Ability of College Teachers

4.3 Platform Development and Collaboration

The development and construction of higher education digital platform is the key to improving the quality of digital higher education resources, expanding the coverage of educational resources and improving the efficiency of digital teaching system. As the carrier and important support for digital governance of higher education, the platform should, on the basis of following the macro-strategy, give full play to the adaptability of technology and moderate innovation, provide user-friendly interface design and functional differentiation of different user groups, and provide rich educational resources and course contents while taking into account the functions of submitting assignments, class check-in, course review, user feedback, and so on. While providing rich educational resources and course contents, it should also take into account the functions of submitting assignments, class check-in, course review, user feedback, etc. It encourages the integration of contents and functions among platforms, provides more specialized subject resources support for teachers and students of various majors, and strives to realize the sharing of functions and resources on a unified platform, and then promotes the sustainable development of the digital governance of higher education.

5 Conclusions

The digitization of higher education is a necessary path for China to build an educational powerhouse. Led by the goal of realizing the modernization of Chinese-style education and supported by relevant policies, the construction of higher education digital platforms has achieved stage-by-stage results and changed the traditional teaching methods. Higher education digital platforms with different functions can meet the needs of different groups of teachers and students and effectively integrate curriculum resources. In the process of the development of higher education digitalization, facing the challenges of insufficient platform popularity, lack of subject literacy, insufficient technological maturity, and imperfect system construction, only by taking multiple parallel actions to build a perfect higher education digital governance mechanism, through improving system construction, incentivizing the implementation of

policies by all subjects, improving the digital literacy of college teachers and students, and realizing platform technological innovation and synergy, can we comprehensively promote the higher education digital platform development, we can give full play to the role of digital technology in promoting the high-quality development of higher education, grasp the innovative opportunities for the development of higher education in the era of digitization, and provide strong support for the realization of the modernization of Chinese-style education and the construction of a strong socialist education country with Chinese characteristics.

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