

An Analysis of the Path of Digital Transformation of Knowledge in Higher Education

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Abstract: The strategy of education digitization must be adapted to meet the challenge of the digital age and achieve the goal of education modernization. With the extensive use and deepening of information technology in the field of education, the progress of technology has made more and more obvious contributions to promoting the transformation of educational forms, expanding educational opportunities, redefining the campus environment, and optimizing learning methods. At present, global research on the digital reform of university education is still in its infancy, and more innovative thinking is needed to guide its development direction. It is foreseeable that the digital transformation of universities will revolutionize the education system, make education suitable for everyone, and make education fairer, higher quality, and more inclusive, thus improving the quality of higher education.

Keywords: Higher education; Digitalization; Paths

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1. The significance of digital transformation of education for the development of higher education

With the advance of digital transformation, higher education has made positive contributions to improving the quality of teaching. Digital technology not only broadens teaching means but also enriches teaching resources to meet students' personalized teaching needs. The change in teaching form makes the teaching process more vivid, effectively stimulating the student's interest in learning and improving the teaching quality ^[1].

Secondly, digital transformation cultivates the ability for innovation. Digital transformation promotes continuous innovation in higher education, which is conducive to enhancing students' innovative abilities. By combining online and offline teaching methods, students can be exposed to a wide range of knowledge in various fields and learn across disciplines, thus enhancing their innovative ability and comprehensive quality.

Thirdly, digital transformation can enhance educational equity. The promotion of digital transformation in the field of education can effectively improve educational equity. The use of online platforms and distance education has broken through geographical and time constraints and provided more people with higher education opportunities ^[2]. Especially for remote areas and disadvantaged groups, digital transformation can

improve the distribution of educational resources, thus promoting educational equity.

2. The path of digital transformation of higher education knowledge

2.1. Using knowledge to represent virtual characteristics to promote digital development

With the development of digitalization, the expression of knowledge has gradually changed from paper books to virtual digital. Through the virtualization of knowledge, the gap between people's understanding of knowledge can be reduced and the new knowledge authority can be redefined. In other words, the virtualization of knowledge helps to promote the digitization process of higher education textbooks. The digitization of knowledge in higher education is not a distant goal, but rather a practical future trend, especially now that electronic textbooks are beginning to replace some paper versions ^[3]. This initiative not only improves the mobility and efficiency of higher education but also provides a strong boost to talent cultivation and collaboration in the field of higher education. To realize the digitization of higher education knowledge, preparations must be made in the following three aspects.

First, the digitization cognition in the construction of higher education knowledge should be enhanced. This includes two aspects: one is to improve the digital understanding of textbook writers, that is, to strengthen their digital understanding in the writing process; the second is to strengthen the cultivation of digital concepts for textbook users, including teachers and students ^[4]. Specifically, both teachers and students should gradually get used to learning without paper books and make use of digital resources such as electronic devices and specialized reading tools to acquire knowledge ^[5].

Second, strengthen the basic conditions of digitization of higher education textbooks. This basic condition is mainly composed of a technical support system. To realize the digitization of higher education textbooks, the corresponding technical support system should be established, and specialized talents should be hired to study how to construct and implement these systems. Meanwhile, professional publishing houses should be relied on to promote digital textbooks ^[6]. For example, to realize the digitalization of higher education textbooks, the corresponding network equipment must be acquired so that digital teaching can be implemented, and there must be a matching textbook digitization technology, to ensure the possibility of real-time and convenient access to textbooks. In addition, it is necessary to promote the publishing house to carry out digital textbook distribution activities based on clear property rights ^[7].

Thirdly, research and development of electronic learning methods for higher education teaching materials. To make the teaching content of higher education intelligent and applied to the actual environment, the first step is to introduce it into the university classroom. This is one of the key links in the training of advanced intellectuals, it also constitutes the ideal venue for implementing these contents ^[8]. Therefore, it is a very challenging task to integrate this kind of information technology into the school curriculum system. First, actively promote the research of experimental information technology teaching methods, and study successful cases to guide the innovation process. Secondly, each school should be used as a basic platform to carry out in-depth discussions and application of this technology. Each school has its own unique historical background and unique school style, so when looking for new teaching strategies, it is necessary to make full use of its advantages, including teachers, and identify which are the most basic and most characteristic content elements to better highlight the characteristics of the program ^[9].

2.2. Enhancing pedagogy organizational cohesion with knowledge commonality

In this digital age, the development of the discipline follows the principle of combining universality and uniqueness. This transformation represents a new form of knowledge that is distinct from traditional universal

knowledge. For those who use it, commonality can break through the constraints of time and place, making knowledge widely understood and applied. As far as the research and development of the existing higher education institutions are concerned, various types of educational institutions have their respective fields of application, so information imbalance is easy to occur among them^[10]. By enhancing the publicity of knowledge, the interaction and cooperation among the various institutions can be enhanced, thus promoting their synergies. To harness the public nature of knowledge to strengthen higher education, the following three steps can be taken.

First, it is essential to maintain a broader perspective and layout. Higher education institutions should recognize that the digital shift is an irreversible process of progress, and in the process lead it into new territories^[11]. This open perspective requires not only an international perspective but also an understanding that knowledge-sharing is blurring national boundaries so that more advanced approaches to digital exploration can be learned from other developed countries. As far as digital transformation is concerned, China should establish an alliance of universities based on digitalization^[12]. Secondly, it is necessary to take a long-term view of organizational interactions. While digitalization can improve knowledge sharing, it also brings unavoidable challenges. Although higher education institutions will face a series of problems when they have the potential to grow, they must make it clear that digital reform is not a fantasy, it depends on the development of a solid infrastructure, especially a high degree of information technology development.

Second, it is essential to enhance the exchange of ideas. This is not only to adapt to the changing needs of digitalization but also to meet the institutional development requirements of higher education. Digitization involves the exchange of information, which lays the foundation for the improvement of research. Therefore, awareness of exchange must be enhanced, starting with groups such as higher education societies and academic journals, to understand the importance of sharing knowledge and the new opportunities for growth that such sharing can provide. Second, take advantage of the digital revolution to build a digital higher education institute. This newly established college is not only the need of various organizations of higher education but also the demand for the construction of digital higher education disciplines. By setting up such a digital higher education institute, it is possible to learn from the experience of other academic organizations in fields such as sociology, economics, and natural sciences, and to be supported by sufficient resources such as research equipment, funding, data, and so on^[13].

Third, the concept of community must be strengthened. This is the biological term for a way of life in which there is some relationship between two independent entities. Because of the knowledge-sharing nature of higher education, the differences between the various institutions are weakened, thus removing their doubts and forming a tight-knit whole. This knowledge-sharing foundation provides the same research background for all institutions and reduces the information gap between them. Enhancing commensal awareness involves two aspects: first, recognizing the power of the organization as a whole and understanding its ability to create synergies on complex problems in the field of practice; the second is to clarify one's role and function, to understand one's place in the overall organizational system and its impact. In this knowledge-sharing environment, each organization should give full play to its strengths, rather than lose its self-recognition by joining the collective.

2.3. Expand the digital space of education with knowledge diffusion

With the change in knowledge generation mode and the advancement of the digitization process, the diffusion of knowledge in the digital age is becoming more and more obvious. Firstly, the decentralization of knowledge is manifested by the diversification of its forms, which means that it goes beyond the limitation of a single course or book. Second, it also reflects a broader way of thinking, based on the complexity of knowledge production. Moreover, the age of intelligent technology is seen as a new stage in understanding the world in

terms of complex thinking. In this digital age, the role of knowledge creator has shifted from one-way to multi-dimensional, and the forms of knowledge have become more diverse, thus expanding the scope of knowledge and increasing the possibility that everyone, anywhere, anytime can learn knowledge ^[14]. At the same time, the expansion of the community of knowledge creators helps bridge the gap between theoretical research and practical applications and promotes interdisciplinary research through novel ways. As far as the challenges of higher education are concerned, digitalization offers an opportunity to solve the dilemmas, which are mainly manifested in three aspects as follows.

First, the digital transformation of education can improve the research field and optimize the spatial scope of the university curriculum structure. Since the establishment of higher education theory, scholars have discussed the path selection of various construction methods such as traditional or contemporary and pragmatism or interdisciplinary integration. When these concepts are integrated into the teaching environment of the university, their influence may transcend the existing knowledge framework and help promote the possibility of new learning methods and models. In addition, according to the current situation of education, it is also a necessary measure to expand the relevant topics involved to meet the needs of the information age, which is not only reflected in the support of national policies. For example, a series of relevant regulations issued by the Ministry of Education on new infrastructure is also reflected in concrete actions at the practical level, such as demonstration projects like the Northwest Telecommunications Engineering School of South China Normal University and Hubei Industrial Science and Technology University. Therefore, there is every reason to believe that with the help of information technology, higher education reform will be further deepened and more opportunities for innovation will be opened up.

Second, by expanding the scope of evaluation in higher education, how the digital transformation of education has increased its complexity and diversity can be seen. Such decentralized knowledge needs to be judged in a space that includes multiple participants and integrates diverse content. Defining research objectives, innovative methodological approaches and a unique theoretical framework form the key basis for the establishment of the discipline. On the one hand, distributed knowledge should be used to promote the basic research of higher education, to lead scholars to explore the question of “what is a discipline”, and deeply discuss the limits and boundaries of the combination of higher education and technology, to enhance their cognitive ability while emphasizing the logic of science and technology. On the other hand, the psychological effects of discipline evaluation should also be emphasized. Some researchers have pointed out that social disparities exist only when there is a hierarchy of differences. In the period of digitization of education, it is also necessary to pay attention to the personal and psychosocial pressure that may be caused by evaluation in the process of promoting basic research in higher education ^[15]. Although the large-scale application of technology in the evaluation of higher pedagogy disciplines helps refine the evaluation criteria, it is also easy to cause the fear of numbers among groups or individuals, which further intensifies the unnecessary competition among different disciplines. To deal with this problem properly, the public’s social understanding of the subject evaluation should be guided to broaden their psychological acceptance of the evaluation results.

The digital transformation of education helps promote the research and construction of digital university education theory. According to the discipline division principles of educational science, such as basic discipline, sub-discipline, and interdisciplinary, the educational theory system of the university is established. Because of the extensive and pluralism of information communication, it makes the discipline construction in this field more abundant and full of vitality. In the process of promoting the construction of digital higher education theory, it is necessary to pay attention to its positioning. The digital higher education theory should be based on the traditional educational concept, and always regard the all-round development of humanity as the core value,

to avoid the potential risks caused by excessive digitalization. In addition, the development path of digital higher education theory must also be discussed in depth. As an emerging field of knowledge, its disciplinary development route is full of unknowns and diversity, so scholars must adopt a flexible attitude, be innovative, and find a unique path to disciplinary development.

Disclosure statement

The author declares no conflict of interest.

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