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Research on the Role of Digital Education in Sustainable Development

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ABSTRACT

Driven by the digital wave, the transformation of digital education is becoming the only way for the innovation and development of colleges and universities. Digital education in colleges and universities not only refers to the digitalization of educational tools, but also to the multi-level teaching system digitalization of education, teaching, management and resource utilization. Based on this, by analyzing the current situation of digital development and problems in domestic universities, summarizing relevant experience, we put forward the diversified summary of digital education and teaching forms to summarize the feedback of improving digital classroom teaching. This article referred to approximately 80 relevant literature. These documents cover multiple aspects such as digital education, educational management innovation, and digital teaching models in universities, ensuring the comprehensiveness and depth of the research. Priority should be given to research results published within the past 5 years to ensure the timeliness and relevance of research conclusions. Literature is directly related to digital education and innovative development in universities, with a focus on research on educational tools, teaching methods, management models, and resource utilization. Including research results from both domestic and international sources, in order to compare the development of digital education under different cultural backgrounds. case analysis and comparative demonstration to explore the path of innovative education management of higher education and put forward some suggestions.

INTRODUCTION

Education digital development, mainly refers to the background in the new era and conditions, the fundamental change of education digital ecosystem, around khalid ents tasks and goals, using the innovation of digital technology and increasingly rich data elements, with the help of digital technology to carry out cognitive change, values, ability to improve the people of educational activities.

However, there are still many problems in the construction of educational concepts, educational content, educational means, educational effects and other aspects that are adapted to the digital age, and the difficulties, blockage points and pain points need to be further solved. Therefore, the improvement of education level is related to the future destiny of the country, related to the long-term peace and stability of the country, and related to the cohesion and centripetal force of the nation. Accelerating the digitalization of education and using digital technology to empower and empower education will surely contribute to the high-quality development of education in China. In this regard, we must deeply understand the great significance of the digital development of education from a strategic height and a political height.

LITERATURE REVIEW

Education digital is developed on the basis of education informatization, network, the study of education digital development has been mature, academia on development present situation, practice path, the technology, fu,

international comparison, framework and methodology, process research, education development bottleneck, system guarantee, teaching material change and so on the thorough discussion, at the same time on how to strengthen the demand drive, deepen the fusion innovation can assign, build a new pattern of digital development, promote the education digital strategy action, create a new situation education digital all-round, three-dimensional research.

Biao (2021) in the digital education, based on big data and intelligent scene application of education change and actual combat, the basic theory of intelligent education, the construction of intelligent learning environment, intelligent education system architecture, the development of intelligent education strategy and landing path, practical application of intelligent education has carried on the three-depth analysis, and the outbreak era of digital education has carried on the comprehensive analysis.

Jing (2023) the digital fu can high quality development from the education technology system, education organization system, environmental space, behavior practice level, analyzes the digital fu can problems and the challenges of high quality education development, on the basis of analyzing the goal and development path, share the “problem drive + vision lead, system evolution, innovation breakthrough, value assessment + iterative optimization” experience.

Huikang (2023) “exploration and research of digital education” in the form of case sharing from digital innovation, classroom digital practice, training digital development, management service digital fu, etc., to

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higher vocational education how to use digital fusion innovation, optimize education management, improve the education management level is a certain exploration. Shiyuan (2022) Research on the Development Strategy of Educational Informatization and Viscous Classroom takes online education under the Internet model as the research object, explores the new pattern, new method and new trend of higher education development under the Internet mode, and explores the blueprint and path of educational reform in the digital era from the perspective of ecology. The above achievements have laid a good foundation for our study of education digitalization, but the boundary between education digitalization and education intelligence has not yet been clarified.

The New technology revolution: global digital education in action to the United States, Britain, Germany, France and other nine countries of digital education as the research object, from the international perspective analyzes the comprehensive challenge in the new technology revolution, the focus of the digital strategy and education policy orientation, and on this basis put forward “actively promote the depth of digital technology and education integration, enhance the level of digital intelligence, create a large number of leading talents will be one of the important direction of Chinas future education development”.

China education science research institute released “the Chinese wisdom education development report (2023): towards China education digital transformation towards wisdom education”, expounds the understanding of wisdom education and value pursuit, analysis of wisdom education development course and path, build wisdom education evaluation index system, measure wisdom education development index, put forward the future development key problems, and strengthen the development of wisdom education strategy, promote digital education mode change, promote building wisdom

lifelong learning system, the data can assign education innovation practice, deepen the wisdom education international exchanges and cooperation, etc.

In the education digital transformation, artificial intelligence, block chain and robot how to assign “, we from the perspective of technology landing analyzes the opportunities and challenges of the current education digital transformation, put forward the strategic significance of education digital transformation, put forward the strategic idea of education digital transformation, and from the data management, basic connection, education evaluation, ecological cultivation discusses the specific path of the education digital transformation.

The author uses the Cite Space literature combing method to sort out the research hotspot and context of the development of education digitalization in the academic circle in the past five years (Figure 1). The research results show that: First of all, digital transformation is a necessary stage of education from traditional education mode to education digitalization and intelligence, and the academic circle conducts a wide range of research on digital transformation. Secondly, since the launch of online education with COVID-19, especially after the country proposed the implementation of digital education strategy, the research in this field has become more and more in-depth, including the current situation, practice, challenges and prospects of the research. Among them, there is an in-depth analysis from connotation feature analysis to practice evolution, from logical framework construction to the exploration of technology enabling path, from the reform of talent cultivation mode to the improvement of digital literacy, from data-driven to digital governance, from model construction to technical ethics. Thirdly, the overall research shows more macro analysis, more current situation and problem analysis, and less future prospects; more consensus summary, and less targeted analysis based on specific disciplines.

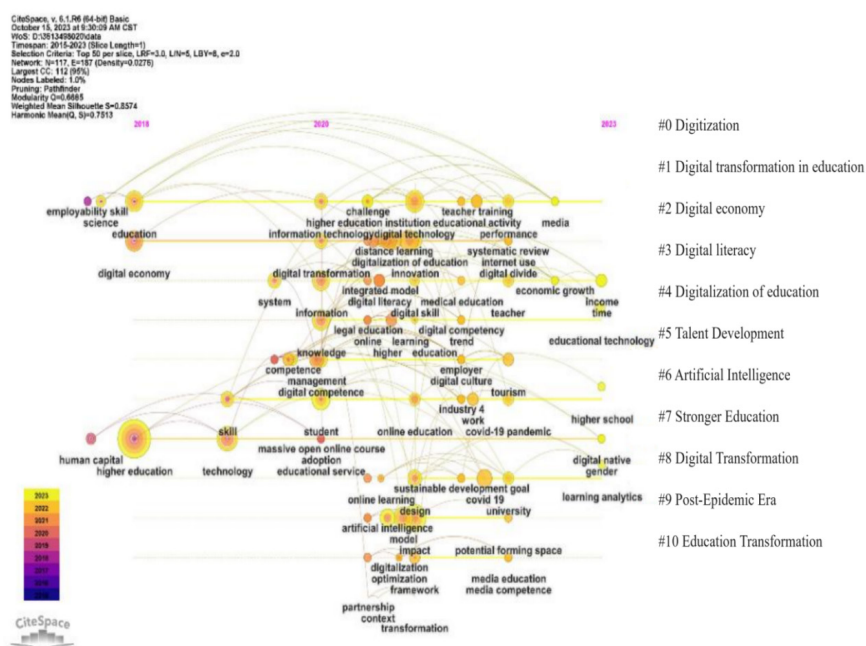


Figure 1: Research hotspot and trend analysis of education digital development based on Cite Space.

MATERIALS AND METHODS

Management opinions and development of digital education

Management opinions on the current digital education

The author searched the relevant literature on the research role of digital education in sustainable development from CNKI, Wanfang, VIP and other databases, such as “Research on the digital development mechanism and implementation path of college education”, “research on the development countermeasures of digital transformation of vocational education” and other relevant literature. It is concluded that in recent years, China’s digital construction has achieved some results, and the education system has undergone major changes. However, there are also a series of complex challenges. These challenges involve not only the internal management and resource allocation of universities but also the aspects of education policy, social factors, and technology application. First, we should clarify the overall development mechanism of digital education, which can not only fully promote the transformation of digital education, but also improve the quality of education and teaching effect, and ensure the sustainable development of digital education. Second, after the mechanism is confirmed, the specific implementation path should also be implemented as soon as possible. Firstly, a digital education resource platform should be established to provide free or cheap digital education resources; secondly, improve relevant data privacy laws and regulations to conduct regular security review and monitoring; then establish strict quality standards and evaluation mechanism to supervise and improve the quality of digital education; finally, digital education training programs should be provided to improve teachers digital education ability.

The Importance and development of digital education transformation

The digital transformation of education is especially important, especially that of higher education. The importance of the digital transformation of education is reflected in many aspects. First, it can improve the quality and efficiency of teaching. Through the application of digital technology, universities can better manage and allocate educational resources while providing more personalized learning opportunities for students. Secondly, digital education helps to expand the scope of teaching and make education more equal. In addition, digital education can also help promote global cooperation and knowledge dissemination, as well as scientific research and social development. This paper defines the concept of digitalization in university education so as to better understand the core characteristics and implementation status of digital transformation in universities. At the same time, through the analysis of the existing digital transformation cases of higher education, the implementation mechanism and resource management

experience of digital education are summarized, and the specific implementation path is put forward in order to promote the sustainable development of digital education and provide more choices for the future development of college education.

The concept and significance of digitization in college education

The concept of digitalization in college education

The author uses the literature research method and comparative demonstration method and combined with the research status at home and abroad to study and sort out 30 literature, and believes that the digitalization of university education is a multi-dimensional education reform through the wide application of information and communication technology and other digital tools. This transformation includes, but is not limited to, online education, virtual education resources, learning management system, distance teaching, mixed teaching and other forms. The core goal of college education digitization is to optimize the education and teaching environment, improve the quality of teaching and student participation, and provide more flexible and personalized learning opportunities. It is a revolutionary challenge to the traditional college education model, bringing college education into the digital age through technology-driven and innovative education methods. The concept diagram of education digitization is shown in Figure 2.

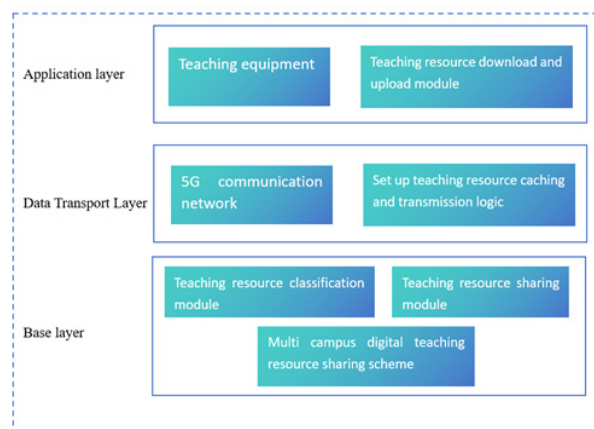


Figure 2: Concept diagram of education digitization

Significance of digitization of college education

The impact of digitization on college education is not only reflected in providing new teaching tools and resources, but also in profoundly changing the education ecosystem and teaching methods. First of all, digital education has broadened the learning path and provided students with rich learning resources. Online courses, distance education, and virtual labs enable students to access more courses that they are interested in themselves. Second, digital tools provide more personalized learning opportunities. Students can choose the learning content according to their own learning progress and needs, which helps to improve the learning efficiency. Third, digital education has increased student participation.

Online discussion, virtual teamwork and interactive learning resources motivate students and promote deep learning. In addition, digital technology has improved the quality of education. Through data analysis and student feedback, colleges and universities can better understand the needs of students and adjust their teaching methods in time to ensure that education and teaching are fully supported. Digital education has also driven the innovation in academic research. Researchers can more easily access and share data and cooperate online, thus facilitating cross-field collaboration and research outcomes. In addition, digital education can promote the effective use of educational resources and reduce the cost of printing and distribution, which helps universities to manage resources more effectively and improve the efficiency of resource utilization.

RESULTS AND DISCUSSION

The problem of the diversification of digital education

Firstly, we analyze the deficiencies in the field of digital education in China through the literature analysis; and then discuss the problems of digital education in the current situation. First, the cognitive level of digital education is not high and the educational concept of “people-oriented” is ignored; second, the low utilization rate of digital application system and the combination of theory and practice; third, the digital literacy of teachers is generally low and the ecological environment for students to love learning. The paper discusses the method of curriculum optimization, and makes suggestions through comprehensive comparative analysis.

Problems existing in the digital transformation of vocational education

First, the cognitive level of digital education is not high. At present, many leaders and information managers of schools have a one-sided understanding of digital campus. They regard digital campus as the establishment of digital system and the use of digital software, and do not have a deep understanding of the purpose and significance of digital campus construction. In the process of digital campus construction, putting the cart before the horse, paying too much attention to the construction of digital equipment, and ignoring the management and education functions in the digital construction. At the same time, due to the lack of understanding of digital campus, the lack of attention and the outdated management concept, the lack of effective organization and system planning in the construction process. Second, the utilization rate of the digital application system is low. Before the construction of the digital campus, many schools had already built their campus networks. When using the campus network, each department of the school already has their own information system and database. However, it is difficult to ensure the timely sharing and synchronous update of information between the information systems and databases of different software companies, thus resulting

in information islands. Effective application and real-time sharing of information cannot be realized, which greatly reduces the utilization rate of the application system. Third, teachers digital literacy is generally low. With the acceleration of the global digital transformation, peoples living, learning and working methods are also constantly changing, and the improvement of teachers digital literacy has also become one of the strategies for the reform and development of vocational education. Teachers digital literacy mainly includes digital teaching ability, digital network security awareness, innovative application ability and so on. At present, teachers in vocational colleges generally have low digital literacy. Fourth, the digital teaching evaluation system is not perfect and the digital transformation teacher training is not in place. First of all, digital education and teaching resources have the characteristics of personalization and diversification, and the formulation of evaluation standards has become the current difficulty. Secondly, digital teaching methods require teachers to master the knowledge and skills of relevant information technology, and the improvement of teachers evaluation ability, the objectivity and accuracy of evaluation are also urgent problems to be solved. Finally, digital teaching needs the support of computer hardware, software, network and more; school administrators and professional teachers lack relevant technical training, Greatly reduce the promotion and application effect of digital campus. For teachers, due to the lack of mastery of computer knowledge and technology, their use of information technology in the process of education and teaching teaching motivation will be insufficient. With the rapid development of information technology, some school administrators and professional teachers fail to adapt to the update and iteration of information technology, which hinders the pace of digital transformation of education.

The digital transformation of higher education exists

First of all, we should adhere to the people-oriented education concept. Efficient education should take “moral education” as the fundamental task. Under the concept of digital management, colleges and universities should build a “diversified” teaching mode, which should first adhere to the people-oriented education concept. College teachers attach importance to the status of students subjectivity and respect students teaching subjectivity in teaching. The teaching design and teaching activities are developed around students to enhance students enthusiasm and initiative in learning. Secondly, the integrated teaching mode of “digital education” and “theory and practice” should be constructed. In teaching, we should not only pay attention to the study of students theoretical knowledge, but also strengthen the cultivation of students practical ability. In teaching, through the construction of a teaching mode combining “digital education” and “theoretical practice”, we should attach equal importance to theory and practical teaching,

strengthen the cultivation of students practical ability, and cultivate students professional skills and social participation ability. Finally, the use of digital environment to create a university health education ecology. With the help of intelligent technology, the sharing of teaching resources is realized in teaching. Using intelligent technology, open corresponding professional courses, innovate professional teaching forms, expand students vision in teaching, realize the understanding and learning of new knowledge in the digital environment, and enrich students knowledge system.

Diversified curriculum optimization method of digital education

Diversify the digital education and teaching forms

Digital tools such as information software, video teaching and interactive games of Shivo whiteboard are used to set the situation. Through situational teaching, students can more intuitively understand the practical application and effect of the knowledge they have learned, so as to stimulate their interest and enthusiasm in learning. At the same time, situational teaching emphasizes the dominant position of students, and allows students to actually operate and participate to help them better master knowledge and skills and improve their practical ability. In the process of situational teaching, students need to try to solve problems through thinking, which helps to develop problem-solving ability. Situational teaching method can not only guide students to learn good emotions and values such as caring for others and respecting others through context setting and role-playing, but also enable students to participate in the classroom more actively, so as to enhance the teaching effect.”Those who know are better than those who know well, and those who know well are better than those who know well.”American educator Bruner also believes that the best stimulation of learning is the hobby of the material. The power of hobbies in learning is huge. Teachers should fully understand the characteristics and interests of students, explore the knowledge background, interesting cases and hobby factors in the textbook, fully stimulate students desire for knowledge and interest in learning, give play to the main initiative, and achieve the purpose of “teaching through fun”. With the help of digital technology, students can feel the interactive integration information of audio-visual integration and pictures, understand the background related to teaching in multimedia courseware, and listen to the content related to classroom teaching. This new mode of information acquisition can change the single and boring teaching method, and make it easier for students to understand knowledge, so as to generate interest and hobbies in learning, actively acquire knowledge, stimulate the desire to express themselves, and then achieve the classroom interaction between teachers and students.

Summarize the feedback of improving digital classroom teaching

In the context of digital education, teachers can use

digital tools, such as online classroom, video conference, chat room, and social media platforms, to communicate with students in real time to understand their difficulties in the learning process and help them solve, and use the feedback platform to understand students learning strategies, learning progress and learning results. According to the feedback information, teachers can make necessary adjustments to the original teaching methods to meet the needs of students. Using the feedback application, teachers can collect information about students homework, test scores, homework feedback, and timely track students learning progress and effect. All these can help teachers to better understand the learning characteristics, existing deficiencies and learning advantages of each student, and to put forward targeted suggestions on their learning status. Paying attention to digital classroom teaching feedback is of great guiding significance for the improvement of students learning effect and teaching quality.

CONCLUSION

To sum up, we should correctly realize the role of digital education in the sustainable development, and realize the importance of digital education in today's information age. This paper discusses the related issues of digital education, and gives relevant suggestions. At present, the domestic digital education is imminent, which requires the country, the government and universities to jointly develop digital education. On the one hand, to comprehensively optimize the digital education management of colleges and universities, it is necessary to innovate the teaching management mode of education and comprehensively promote the digital transformation of teaching; on the other hand, to further enhance the construction and application ability of teachers digital teaching resource database and the ability of digital teaching research. Through a series of digital teaching ability training methods, build diversified, personalized, and high-level education teaching and scientific research ability; finally, the digital system and mechanism should be improved to ensure the orderly development of digital transformation. In a word, digital education is the key to promote the overall improvement of the internal governance level of colleges and universities, and is an important means of “changing the track and overtaking” in the field of education in China. Constantly improve the digital education management level of vocational education, apply the latest and most cutting-edge information technology more reasonably to the process of education and teaching, realize the high-quality development of vocational education, and then improve the level of talent training.

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