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Theoretical Origins, Challenges, and Solutions for Digital Empowerment in the Governance System of Tourism Vocational Education

Mengjun Wang

Shandong Institute of Commerce and Technology, Jinan, Shandong 250000

Project: "Theoretical Origins, Challenges, and Solutions of Digital Empowerment in the Governance System of Tourism Vocational Education" — a 2023 branch research project of the China Vocational and Technical Education Society (Project No.: ZJ2023A012, Principal Investigator: Wang Mengjun).

Abstract: The Chinese government places high importance on the digital transformation of tourism vocational education, providing multifaceted support and safeguards in areas such as policy guidance and support, infrastructure development, innovation in application scenarios, talent cultivation and enhancement, demonstration projects and base construction, cross-departmental collaboration and resource sharing, as well as security assurance and risk management. These efforts aim to advance tourism vocational education in step with the times and cultivate tourism professionals who meet the requirements of the new era. This paper traces the theoretical origins of digitally empowered governance systems in tourism vocational education across six dimensions. It also identifies several challenges in the practice of digitally empowering these governance systems: difficulties in integrating technological applications with teaching practices, imbalances in educational resources and the digital divide, adaptability challenges in teachers' digital literacy and teaching methods, and insufficient policy support and institutional development. Based on these findings, practical optimization pathways are proposed, including innovating educational concepts and systems, constructing a digitally empowered educational ecosystem, and promoting the deep integration of digital technology and education.

Keywords: tourism vocational education governance system; tourism vocational education; digital transformation of vocational education;

In 2022, the Ministry of Education proposed the implementation of a digital education strategy, emphasizing the active development of "Internet + Education" and accelerating the digital transformation and intelligent upgrading of education. Efforts include building a national public service platform for education governance, establishing a national smart education platform for vocational education,

and continuously enhancing capabilities in data governance, administrative services, and collaborative supervision. The "14th Five-Year Plan for National Informatization" explicitly calls for establishing and improving a standardized and orderly digital development governance system, promoting lifelong digital education, constructing a high-quality education support system, and fostering a favorable digital



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ecosystem. The "Notice on Strengthening Collaborative Innovation in 5G + Smart Tourism" by the Ministry of Industry and Information Technology and the Ministry of Culture and Tourism" encourages vocational tourism education institutions to leverage technologies such as 5G, big data, and artificial intelligence to innovate tourism management, optimize tourism resources, and improve education quality and administrative efficiency. It also advocates for cross-departmental, cross-industry, and cross-sector collaboration to promote resource sharing and cooperation, facilitating the digital transformation of vocational tourism education through the establishment of collaborative mechanisms. The "Implementation Plan for the Industry-Education Integration Empowerment and Enhancement Action in Vocational Education (2023–2025)" sets the goal of cultivating over 10,000 industry-education integrated enterprises by 2025, highlighting the application and promotion of digital technologies in vocational education. Additionally, the Ministry of Education's "Notice on Accelerating the Reform of Key Tasks in Modern Vocational Education System Construction" explicitly outlines tasks such as building benchmark informatization schools for vocational education and establishing demonstrative virtual simulation training bases, providing guidance for empowering a new digital ecosystem in vocational education.

1. Theoretical Origins of Digital Empowerment in Tourism Vocational Education

Constructing a theoretical framework for digitally empowered educational governance requires a comprehensive consideration of multiple theoretical perspectives.

1.1 Digital Transformation Theory

The theory of digital transformation has gradually developed and matured alongside the advancement and application of information technology. Scholars such as George Westerman, Didier Bonnet, and Andrew McAfee argue that digital transformation is not merely the adoption of technology, but a comprehensive strategy involving business models, organizational structures, and corporate culture. Michael Porter and James Heppelmann proposed theories on how smart, connected products are transforming the economy, emphasizing how digital technologies are reshaping the creation and delivery of value in products and

services. In their research, Jeanne G. Harris and Vinay Couto explored the impact of digital transformation on business operations and decision-making ^[1]. The work of these scholars and practitioners forms the foundation of digital transformation theory.

Digital technologies can alter how organizations operate, enhancing both efficiency and effectiveness. In the governance of education, digital transformation involves educational information systems, online learning platforms, and data-driven decision-making, aiming to optimize the allocation of educational resources, improve the quality of educational services, and enhance the efficiency of educational management through technological means.

1.2 Educational Informatization Theory

Educational informatization emphasizes the application of information technology in the education system, including the digitization of educational content, the electrification of teaching processes, and the informatization of educational management. From the development of audiovisual education to the era of Educational Informatization 2.0, communication theories such as audiovisual education theory, communication studies, multimedia learning cognitive theory, and constructivist learning theory form the foundation of educational informatization. Nan Guonong is one of the key promoters of educational technology in China. He proposed the research areas and development directions of educational technology and conducted in-depth exploration of the practice and theory of educational informatization. Under the theoretical framework of applications in the field of educational technology, digital empowerment of educational governance means leveraging information technology to enhance the accessibility, participation, and personalization of education ^[2].

1.3 Knowledge Management Theory

Knowledge management theory focuses on the effective acquisition, storage, sharing, and application of knowledge and information. In educational governance, this theory guides how to manage and utilize educational knowledge assets through digital means, fostering knowledge innovation and dissemination, and enhancing the intelligence level of the education system.

1.4 System Theory

Systems theory provides a comprehensive perspective

for analyzing and understanding the complexity of educational governance. In the digital context, the education system is regarded as an open and dynamic information system. The application of digital technologies can facilitate better coordination and management of various components within the education system, making it more adaptable to rapidly changing societal needs.

1.5 Governance Theory

Governance theory emphasizes the participation and collaboration of multiple stakeholders, as well as interaction and negotiation throughout the policy formulation and implementation processes. Digital empowerment of educational governance can foster cooperation and dialogue among the government, schools, enterprises, and other social stakeholders by establishing more open and inclusive platforms^[3].

1.6 Innovation Diffusion Theory

Innovation Diffusion Theory explores how new ideas, products, and technologies spread and are adopted within society. The application and promotion of digital technology in educational governance can be viewed as an innovation. This theory helps to understand and facilitate the diffusion process of digital technology in the field of education.

1.7 Change Management Theory

Change management theory focuses on the processes and strategies of organizational change. In the digital transformation of educational governance, this theory provides frameworks and tools for managing change, reducing resistance, and ensuring successful implementation.

Building upon the aforementioned theoretical foundation, the theoretical origins of digitally empowered governance systems in tourism vocational education can be explored from the following dimensions:

(1) Technological Development and Educational Innovation

With the rapid advancement of information technology, particularly the maturation of internet, big data, and artificial intelligence, the education sector has begun exploring how to leverage these technologies to innovate educational models and enhance teaching quality. For tourism vocational education, the application of digital technologies

enables the simulation of real-world tourism scenarios and provides immersive learning experiences, thereby better cultivating students' professional skills and innovative capabilities.

(2) Industry Demand and Educational Adaptability

The rapid development and continuous evolution of the tourism industry have raised new demands for talent. Tourism vocational education must closely follow industry trends and promptly adjust its content and methods. Digital empowerment can make tourism vocational education more flexible and adaptable, enabling it to respond swiftly to industry needs and cultivate tourism professionals equipped with modern technical skills.

(3) Optimization of Educational Resource Allocation

Optimizing the allocation of educational resources is key to improving education quality and efficiency. Digital technology can facilitate the digitization and networking of educational resources, breaking geographical and temporal barriers to enable the sharing and optimal distribution of these resources. In tourism vocational education, this means that high-quality teaching content and practical training resources can be more widely shared, enhancing the utilization efficiency of educational resources.

(4) Modernization of Education Management

The modernization of educational management requires administrators to utilize modern information technology to enhance management capabilities and service quality. Digitally empowering tourism vocational education enables refined, intelligent, and personalized educational management. Through data analysis and intelligent decision-making support, it improves the scientific rigor and effectiveness of educational management.

(5) Promotion of the Lifelong Learning Concept

With the accelerating pace of knowledge renewal, lifelong learning has become essential. Digital technology offers flexible and diverse learning methods as well as convenient pathways for tourism vocational education, enabling in-service tourism professionals to continuously acquire new knowledge and skills to meet the demands of career development.

(6) Educational Equity and Popularization

Digital empowerment helps narrow the educational gap and enhance educational equity. Through online education platforms and virtual simulation training

bases, tourism vocational education can reach broader regions and demographics. Particularly for remote areas and disadvantaged groups, digital technology provides opportunities to access high-quality vocational education.

2. Challenges Facing the Digital Empowerment of Governance Systems in Tourism Vocational Education

The practice of digitally empowering the governance system of tourism vocational education plays a significant role in advancing educational modernization and improving the quality of education. However, it also faces certain challenges in practice, which require collaborative efforts from the government, educational institutions, teachers, and various sectors of society to drive innovation and cooperation.

2.1 The Integration of Technology Applications with Teaching Practices Presents A Prominent Challenge.

Technological and hardware upgrades are underway, but effectively integrating modern educational technology into curriculum design and teaching methods to align with the characteristics and demands of tourism vocational education remains a challenge. There is a lack of in-depth application exploration and the development of high-quality teaching models. The utilization of digital technologies and equipment, such as digital twins and virtual simulations, remains low, leading to the wastage of digital resources in vocational education ^[4].

2.2 The Uneven Distribution of Educational Resources and the Digital Divide Are Also Significant Factors Constraining the Development of Vocational Tourism Education.

Disparities in economic conditions, infrastructure, and teaching resources have led to an uneven distribution of educational resources across different regions and schools. This not only hinders the improvement of education quality but also exacerbates social inequality. Therefore, it is essential for the government and all sectors of society to collaborate, increase investment in educational informatization, promote balanced allocation of educational resources, and bridge the digital divide.

2.3 The Adaptability Challenge Between Teachers' Digital Literacy and Teaching Methodologies Also Represents a Current Issue in Tourism Vocational Education.

Strengthen in-service training and professional

development for teachers, providing more learning and practice opportunities to help them improve digital literacy, master new teaching skills, and meet the demands of digital instruction.

2.4 Inadequate Policy Support and Institutional Development Remain Key Factors Constraining the Advancement of Tourism Vocational Education.

The government needs to introduce more policies to support educational informatization, strengthen institutional development, and provide a favorable policy environment and institutional guarantees for the digital transformation of vocational education in tourism. This includes, but is not limited to, offering financial support, establishing relevant standards and regulations, and setting up evaluation and supervision mechanisms.

2.5 Privacy and Data Protection Issues Have Become Prominent.

Digital education may introduce new issues such as privacy and data protection, while also potentially exposing children to harmful content. As technology and service providers collect and manage increasing amounts of information on behalf of schools and educational institutions, much of this data falls outside the direct control of educational bodies, raising concerns about misuse or privacy breaches ^[5].

3. Innovative Pathways for Digital Empowerment in Tourism Vocational Education Governance

3.1 Innovative Education Concepts and Systems

With the rapid advancement of digital technology, educational philosophies continue to innovate and evolve. In the digital-empowered governance system of tourism vocational education, innovating educational concepts and systems is a crucial component.

First, innovative educational concepts entail breaking away from traditional teaching methods and mindsets, emphasizing the cultivation of students' innovative capabilities and practical skills. In vocational education in the digital era, students need to possess innovative literacy and problem-solving abilities, and the concept of innovative education is precisely proposed to foster these competencies.

Furthermore, an innovative education system also entails integrating various resources and teaching

methods to build an open and flexible educational environment. The application of digital technology offers more possibilities for education, enabling diverse teaching approaches such as personalized instruction, distance learning, and practical teaching. This ensures that students can receive effective education across different scenarios.

The establishment of innovative educational concepts and systems requires the joint efforts of educational institutions and enterprises. Educational institutions can reform teaching content and methods by introducing novel teaching concepts and models; enterprises can also provide practical opportunities and industry resources to promote the integration of practical and theoretical education.

3.2 Building a Digitally Empowered Education Ecosystem

Digitally empowered education ecosystem refers to the integration of digital technology with teaching, management, assessment, and other aspects of education, forming a mutually supportive and organically interconnected holistic system. In this ecosystem, digital technology is no longer an isolated tool but intertwines with and mutually reinforces all facets of education, collectively supporting educational quality and outcomes.

First, building a digitally empowered education ecosystem requires a unified digital platform that can integrate various educational resources, including teaching content, teaching methods, teaching assessment tools, etc., making the sharing and flow of teaching resources more convenient. Through this platform, teachers and students can access the educational resources they need anytime and anywhere, achieving personalization and differentiation of teaching content.

Secondly, it is necessary to establish an effective teaching and learning interaction mechanism. By leveraging digital technology, various online learning tools and platforms should be developed to enable real-time interaction and feedback between teachers and students. Through this interaction mechanism, teachers can better understand students' learning needs and progress, promptly adjust teaching methods and content, and enhance teaching effectiveness.

Additionally, it is necessary to include teaching evaluation and management modules. Digital

technology can help establish a more scientific and objective evaluation system, providing comprehensive and accurate assessment of students' learning progress, thereby offering a basis for teaching improvements. At the same time, digital technology can assist schools in building more efficient management systems, enabling the rational allocation and utilization of educational resources, and enhancing both the quality and efficiency of education.

3.3 Promoting the Deep Integration of Digital Technology and Tourism Vocational Education

First, strengthen the construction of the teaching workforce and enhance teachers' ability to apply information technology. Teachers are the critical link in the integration of digital technology and education. Only when teachers possess the capability for digital teaching can they better guide students in digital learning.

Secondly, strengthen the digitalization of educational resources. Build online education platforms and virtual simulation training systems to provide students with more convenient and immersive learning resources. Integrate VR technology deeply with tourism-related course offerings, practical training sessions, and experiential teaching, optimizing teaching scenarios, updating teaching models, and enhancing the teaching environment^[6].

Once again, establish a risk management approach for privacy and data protection. Robust privacy and data protection measures not only address the objective risks associated with the digital transformation of education but also foster trust in the use of data and artificial intelligence within educational contexts.

Meanwhile, it is essential to strengthen collaboration between schools and enterprises as well as social resources. By partnering with tourism industry companies and introducing practical cases, students' practical skills and employment competitiveness can be enhanced. This approach ensures that education remains aligned with industry needs and makes learning more effective for students.

Conclusion

The digitalization trend in the governance system of tourism vocational education is not only a current development need but also an inevitable direction for future educational reform and development. Only by

continuously keeping pace with digital technology and exploring the deep integration of the education governance system with digital tools can we better address the challenges in educational development and promote the advancement of education in a more scientific, efficient, and equitable direction.

References

- [1] G Westerman, D Bonnet, A McAfee. Leading Digital: Turning Technology into Business Transformation[J]. www.abbeys.com.au, 2014.
- [2] Ministry of Education. (2018). Education Informatization 2.0 Action Plan [Z]. No. 6 [2018] of the Department of Science and Technology.
- [3] Qiu Miaomiao, Yao Zhiyou. Understanding and Reflection on the Governance System of Graduate Education in Universities from the Perspective of Systems Thinking[J]. Academic Degrees & Graduate Education, 2023, (08): 29-36.
- [4] Gao Ming, Huang Xiaorong. Promoting High-Quality Development of Vocational Education Through Digital Transformation[J]. Special Research, 2023, (09): 39-47.
- [5] China Education Information Network. How to Build an Efficient Digital Education Ecosystem. 2024, (03)
- [6] Wang Ge, Dong Guangzhi. Application of VR Technology in Tourism Management Teaching[J]. Contemporary Tourism, 2021, (05): 86-88.