

Value Connotation, Current Situation, and Path of Digital Transformation of Teaching in Vocational College

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[**Abstract**] The digital transformation of vocational college teaching is an inherent requirement for the digital reform of vocational education in the digital information age. The digital transformation of vocational college teaching can promote data governance in the teaching process, students' independent and personalized learning, the achievement of high-quality teaching evaluation, and the construction of digital school-enterprise teaching resources. In response to the practical needs and difficulties of digital transformation, vocational colleges should strengthen the top-level design of digital teaching, establish a sound operational guarantee mechanism for digital teaching, construct digitalized integrated teaching resources, enhance the digital information literacy of all staff, and take multiple measures to achieve the implementation of digital transformation in vocational college teaching.

[**Key words**] digital transformation; vocational colleges; digital teaching

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1 Introduction

The report of the 20th National Congress of the Communist Party of China proposes to “promote the digitization of education and build the learning-oriented society and country for lifelong learning for all”; the outline of the 14th Five Year Plan proposes to accelerate digital development and build a digital China; “Development Report of Chinese Vocational Education (2012-2022)” points out that China's vocational education should “gather consensus on digital vocational education, practice the concept of digital vocational education, and accelerate digital transformation” and “take digital transformation as an important driving force”. This indicates that in the high-quality development of vocational education in China, digital transformation of education has become a crucial approach. As the core work of vocational colleges, teaching plays a crucial role in this transformation process. Therefore, a correct understanding of the value of digital transformation in teaching, as well as a scientific grasp of its implementation logic and practical path, is crucial for the development of high-level vocational colleges with

Chinese characteristics and high-level professional group construction units.

2 Value connotation of digital transformation of teaching in vocational colleges

2.1 Promoting data governance in the teaching process

With the rapid development of information technology, a large amount of data generated during the teaching process has become valuable resources. Through the digital teaching management platform, automatic recording of data from various stages and the entire process of teaching can be achieved, and the result data of teaching and learning can be automatically generated, achieving refined management and personalized services of the teaching process. Through the analysis of teaching data, statistical analysis and monitoring of teaching and learning behaviors can be carried out, achieving the intelligence and digitization of teaching organization, teaching implementation, teaching management, teaching quality supervision and teaching evaluation, and improving teaching quality and level.

2.2 Promote students' independent and personalized learning

From the perspective of learning habits and cognitive styles of vocational college students, hybrid integrated teaching with digital teaching as the main body can effectively eliminate the pain points of students' low focus and learning enthusiasm under traditional teaching models, promote their independent and personalized learning, and ensure teaching quality in a more effective way. Hybrid integrated teaching mainly focuses on online mobile, autonomous, and ubiquitous learning, supplemented by offline teaching by teachers. The content and methods of online learning need to be selected based on the actual situation of students, while offline classrooms focus on guidance and exploration, consolidating what is learned online and deepening knowledge understanding through communication and discussion.

2.3 Promote the achievement of high-quality teaching evaluation

Through digital transformation, the flow and connectivity among courses, teachers and students are achieved, data sharing and information exchange between different school departments are completed, and a systematic teaching supervision system combining online and offline is carried out. Using course platform data to compare and analyze multi-dimensional factors in courses, the shift of teaching quality evaluation towards diversified evaluation methods such as process and development, the enthusiasm and consciousness of teachers to participate in teaching evaluation diagnosis and improvement, and the systematic, comprehensive, and objective nature of teaching quality evaluation can be promoted.

2.4 Promote the construction of digital school-enterprise teaching resources

The particularity of major setup in vocational colleges determines that digital teaching resources are the key content for vocational college students to master professional skills and knowledge, and understand the job requirements of enterprises. As the main educational goal of vocational colleges is to provide practical and vocational skill training for students, digital teaching resources should be integrated with content and forms closely related to industry practice. These resources can include simulation experimental software, virtual training platforms, industry case analysis, enterprise cooperation projects, etc., presenting abstract principles and theories in vivid and realistic forms can help students understand professional knowledge more intuitively and deeply, and apply it to practical work scenarios.

3 Analysis of the current situation of digital transformation in vocational colleges

3.1 Realistic needs of digital transformation in vocational colleges

The main goal of digital transformation reform is to improve, innovate in, and reshape values. In this process, the dominant value of vocational colleges lies in shaping moral character and cultivating talents with advanced technical abilities. In addition, the core meaning of digital reform lies in the gradual evolution from relying on the division of labor in industrial technology to achieving large-scale effects, and relying on the empowerment of information technology to achieve various effects, thereby achieving improvements in school education and

management.

From an external perspective, the demand for industrial digitization is becoming increasingly urgent, especially with the effective promotion of a series of digital transformation actions. The digital economy has become a key driving force for stable economic growth, effectively supporting the development of the economy and society. In this context, vocational education, as an important component of society, urgently needs to actively engage in digital transformation. On the other hand, vocational education, as one of the most closely integrated types of education with the market, is the main channel for cultivating technical and skilled talents. It needs to actively adapt to the changes in talent demand caused by industrial digital transformation and actively cultivate digital talents that meet the needs of social development. From an internal perspective, with the vigorous development of Chinese vocational education in recent years, the scale of vocational colleges has gradually expanded, forcing them to innovate in talent training models to cope with the development of the digital era.

3.2 Realistic difficulties of digital transformation in vocational colleges

Research surveys indicate that vocational colleges in China are actively attempting digital transformation under the guidance and support of national policies. However, in this process, vocational colleges also face some challenges: inadequate infrastructure and systems and lack of guarantee limit the transformation process; lack of internal transformation motivation limits digital information literacy and abilities of teachers and students; the integration of technology and teaching is difficult, and digital technology has not been fully integrated into teaching practice, which has affected the effectiveness and quality of teaching; the insufficient depth and validity of data-driven management and services have constrained the modernization of management and service levels. The Action Plan for Education Informatization 2.0 requires colleges and universities to integrate various educational resource platforms and support systems, improve the information literacy of teachers and students, and promote the expansion of technology application to ability quality. This is the goal of digital transformation in vocational colleges.

4 Promotion path of digital transformation in vocational colleges

4.1 Strengthen the top-level design of digital teaching

As an important executor of digital transformation, vocational colleges should closely follow the guidance and support of national policy, and optimize the top-level design of digital transformation. First, vocational colleges should actively explore solutions to problems, promote digital education practices, and improve the practicality of educational organizations in accordance with the principles of “problem-driven, demand-driven, application-oriented, and service-oriented”. “Dual drive” refers to analyzing the pain points and actual needs of digital transformation in schools, and developing targeted solutions. “Dual orientation” refers to the development of short-, medium- and long-term plans for digital transformation in a hierarchical and classified manner, guided by the target application scope and different service groups, and the rational determination of implementation plans and goals for digital transformation. It is recommended to prioritize the construction of high-level professional groups and their courses for digital transformation and upgrading.

Second, vocational colleges should break time and space constraints of digital transformation in teaching, and achieve “three aspects” education, including all staff, all process, and all aspects. In this way, a strong atmosphere of full participation can be created and all faculties can be encouraged to invest in the digital transformation of education and teaching. The digital transformation and development of education and teaching should be integrated throughout the entire process of students before, during, and after class, and into various aspects of teaching and practical activities, rooted in the overall development of the school’s connotation.

4.2 Establish a sound operational guarantee mechanism for digital teaching

The digital transformation of teaching in vocational colleges is a systematic and complex process, which requires the collaborative implementation and participation of multiple stakeholders. First, vocational colleges must

adhere to the transformation concept of government leadership, institutional participation, social participation, and multi-party collaboration, give full play to the leading and organizational leadership roles of education administrative management departments such as the National Vocational Education Guidance Committee and the National Industry Vocational Education Group, and achieve linkage work among various departments to ensure the efficient organization and implementation of digital transformation in teaching.

Second, vocational colleges should establish a leading group for the construction of digital transformation in education and teaching. The group members should include school leaders, staff involved in information technology, academic affairs, and quality supervision, and relevant department heads. Collective training should be provided to the group members. The leading group for the construction of digital transformation in education and teaching is responsible for the organization, implementation, supervision, and assessment of digital transformation in education throughout the process, evaluating and reviewing the progress and effectiveness of digital transformation. The construction and implementation plan will be scientifically formulated by members of the expert group both inside and outside the school, transforming a series of theoretical understanding of the digitalization of teaching in vocational colleges into a policy system with obvious collective action appeal and binding force. The key and difficult points of each sub-project will be detailed, and the school's human and material resources will be coordinated in terms of funding budget, technical support, etc.. At the same time, groups in information technology department should be established to timely collect and analyze information on the digital transformation process of each department, in order to better achieve supervision and management functions. Efforts will be made to innovate in the supply and management methods of digital vocational education systems, create stakeholders related to teaching digitization, fully unleash potential, and create a favorable environment for teaching productivity.

Third, vocational colleges should conduct in-depth research and development on the application and management strategies of teaching data. This measure should include data collection, storage, analysis and display, as well as security protection. The detailed division of labor among business departments, information technology departments, and teaching units in the process of data collection, application, and management should be clarified to avoid confusion in the management system. In addition, it is necessary to ensure the integrity, real-time, security, and accuracy of data in order to provide solid and reliable data support for schools, achieve the goals of data governance, data education, reasonable evaluation, and scientific decision-making, promote the digital transformation of education and teaching, and improve the level of school management.

4.3 Construct digitalized integrated teaching resources

The widespread innovative and integrated application of digital technology in the economy and society has brought both opportunities and corresponding challenges for digital transformation in the field of education. In the field of vocational education, optimizing digital teaching resources and promoting the intelligent upgrading of infrastructure are the key to achieving digital transformation. However, the digital development of vocational education does not rely solely on the support of social resources, and the construction of campus resources is equally crucial. In order to achieve the digital transformation of vocational education, it is necessary to fully leverage the advantages of school-enterprise cooperation and jointly build and operate the promotion of the digital development in vocational education.

First, vocational colleges should construct software and hardware facilities that meet the needs of professional teaching. Given the particularity of vocational education, algorithm factories, data systems, intelligent teaching assistants, intelligent learning partners, and other teaching applications corresponding to each profession should all become necessary technologies to support vocational education. In addition, it is necessary to create an information-based teaching venue that supports interactive feedback, high-definition live streaming recording and other teaching methods, achieve full coverage of campus wireless networks, and build a new type of data center and

digital library.

Second, vocational colleges should provide course teaching resources that meet the individual development needs of students. Online resources should be provided in a “directory style” manner initially, all resources should be listed in the form of a directory, and digital methods should be used to systematically design and reconstruct the teaching process and learning resources, so that students can choose learning content according to their own learning situation at any time, fully realizing personalized teaching and hierarchical cultivation. In addition, in order to better realize the transformation of “three aspects” (all staff, all process, and all aspects) of digital teaching, it is necessary to have a teaching platform of “Internet plus + big data + artificial intelligence” to better realize the functions of teaching interaction, evaluation and supervision, and thus help the development and upgrading of modern vocational practice teaching system.

4.4 Enhance the digital information literacy of all staff

Influenced by traditional teaching concepts, vocational colleges often appear to be one-sided in the process of digital transformation, which requires us to make comprehensive and in-depth adjustments and changes to the concepts, policies, and resources of vocational colleges. The leadership of vocational colleges needs to have sharp insight and forward-looking management thinking, and be able to examine the current situation and grasp trends. Efforts and resources from all parties should be coordinated to regulate at the macro level, stimulate the enthusiasm of teachers, and actively expand the dimensions of digital education resources. In addition, diversified measures need to be taken to promote the development of digital education, ensure the smooth implementation of subject education informatization, and thereby improve the quality of education services in vocational colleges, and meet the new needs of vocational education in the digital era.

From a teaching perspective, teachers are the main body of vocational colleges to cultivate “intelligent+” technical skill talents. Therefore, the first step is to provide systematic digital training for teachers and build a teacher team in the digital era. First, vocational colleges should adhere to goal-orientation and enhance the internal drive of teachers in digital transformation. The development department of vocational college teachers should focus on the transformation focus and difficulties proposed by the expert leaders of the school, combine them with the majors and contents taught by each teaching, and organize targeted training projects to improve the systematic and accurate training of teachers, rather than blindly conducting large-scale training for all teachers in the school. Second, vocational colleges must adhere to practice-orientation, enhance teachers’ digital application abilities through concrete practice, encourage them to apply theoretical training content to real classrooms, and enhance their practical knowledge and teaching wisdom.

As recipients of digital transformation in teaching, students can intuitively experience the changes brought by teaching innovation. But if they simply accept without making changes, the effectiveness of teaching innovation will be negligible. Therefore, in order to motivate students to actively adapt to the changes in the digital era, we should incorporate their digital literacy into important indicators for cultivating core competencies in vocational education. This aims to cultivate students to develop good habits of using information technology for digital learning, thereby comprehensively improving their information literacy and information technology professional ability. In this process, we particularly emphasize the cultivation of innovative technological skills that students need in the digital age, including abilities in thinking, information search, comprehensive analysis of information, and information exchange and utilization. In this way, students can not only master solid professional abilities and vocational skills, but also possess sustainable lifelong learning abilities, thereby better adapting to and leading the development trend of the digital age.

5 Conclusion

As the core part of system engineering of the digital transformation in vocational education, and a key practical scenario for the deep integration of information technology and vocational education, the high-quality development

of digital teaching in vocational colleges is urgent. Vocational colleges should keenly seize the opportunities of digital transformation in education, actively promote the deepening and improvement of teaching digitization, adhere to the new concept of digital transformation in teaching guided by policies and “three aspects” education, strengthen the top-level design of digital teaching, establish a sound operational guarantee mechanism for digital teaching, construct digitalized integrated teaching resources, enhance the digital information literacy of all staff, and continuously improve relevant mechanisms. Besides, vocational colleges should actively utilize the new generation of information technology to systematically innovate in teaching platforms, resources, and models, actively explore teaching plans of digital transformation with vocational education characteristics, advanced concepts, scientific methods, significant input-output benefits, which are easy for replication and promotion, in order to promote the comprehensive improvement of teaching quality in vocational colleges and provide strong support for cultivating more high-quality technical and skilled talents who meet the needs of the digital era. In this regard, this article attempts to use the digital transformation of teaching in vocational colleges as an example, in order to seek the reflection and research of the education community’s commitment to the digital transformation of education, and further promote the sound and perfect theoretical system of China’s digital transformation in education.

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