

Research on the Innovation and Optimization of Teaching Management in Higher Vocational Colleges Based on Digital Transformation

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Abstract: Digital transformation is reshaping the education ecology of higher vocational colleges. Its core is not a simple technology overlay, but through the deep penetration of data elements, it breaks the structural contradictions in traditional teaching management, such as “information barrier”, “process solidification”, “resource island”, and realizes the fundamental change from “experience driven” to “data driven”, from “decentralized management” to “collaborative governance”. This transformation is not only related to the improvement of management efficiency, but also determines whether vocational education can accurately meet the needs of industrial upgrading and cultivate technical and skilled talents with digital literacy. The digitalization of teaching management is the inevitable trend of the rapid development of information technology and an important content of modern school running. It is necessary to analyze the potential problems in the process of teaching management at this stage, and further strengthen the digitalization construction of school teaching management with the creation of a digital teaching management environment. The following takes the innovative optimization method of teaching management in Higher Vocational Colleges with digital transformation as the research object. For the development of a series of teaching management activities in higher vocational colleges, relying on the construction of a digital management platform, the whole process of management is dynamically supervised, and intelligent, mobile, visual and other technical means are used to provide a strong guarantee for teaching management and improve the level of teaching management in higher vocational colleges.

Keywords: Digital transformation; Higher vocational colleges; Teaching management; Innovation optimization

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1. Introduction

For the teaching management of higher vocational colleges, digital transformation is by no means a simple superposition of technical tools, but the reconstruction of education ecology through data elements to realize the paradigm transition from “experience-driven” to “data-driven”. Its core is to solve the structural

contradiction of traditional management through process reengineering and value reconstruction. Teaching management is the central link and key content of school management. Through certain management means, managers can ensure the development of teaching activities and achieve the training objectives of the school. The development of teaching management in higher vocational colleges can greatly improve the efficiency of school management and provide effective data support for teaching reform by establishing an information and digital management platform to optimize the management means and methods, and taking the digital management platform as the media.

At the level of teaching resources, it is necessary to break the dilemma of “resource island” and build a dynamic evolution of digital resource ecology. By integrating multiple materials such as course videos, virtual simulation projects, and real cases of enterprises, a resource library of “industrial demand—teaching content—skill standards” is formed; Teaching process management needs to realize the transformation from “unified control” to “precise empowerment”. With the help of learning analysis technology, it can capture the multi-dimensional data of students’ classroom interaction, homework submission, training operation and so on, and build a personalized learning portrait.

The decision-making level needs to establish a data-driven governance mechanism. Through the integration of multi-source data such as educational administration, students and workers, school enterprise cooperation, and so on, a quantitative index system such as the health degree of specialty construction and course matching degree is constructed. The essence of digital transformation is “technology-enabled education” rather than “technology-alternative education”. In the process of promotion, teachers’ digital literacy needs to be improved at the same time, so as to avoid falling into the misunderstanding of “valuing technology over ideas”, and finally activate the educational elements through data flow, so as to realize the connotative development of teaching management.

2. Comparative analysis of the advantages of digital transformation of teaching management in higher vocational colleges

Analyzing the situation of teaching management in higher vocational colleges, there are mainly problems of teacher team construction, management system and management mode, which affect the effect of teaching management in higher vocational colleges. From the perspective of the construction of teachers’ team, the problems of an unstable teachers’ team and high mobility still exist, especially for the new teachers. In addition, there is the problem of teacher training. The design and implementation of teaching training are unbalanced, which is mainly reflected in the training frequency, content and effect. The results of teacher training are not included in the scope of evaluation, which leads to a lack of innovation in teachers’ ideas and thoughts and low-quality teachers. The construction of a digital management platform can reasonably allocate teachers’ resources, build a communication bridge for the feedback of teachers’ problems, and provide a special platform for teachers’ continuous learning, which can enhance the effectiveness of teachers’ team construction^[1]. In addition, there are still problems in the management system of teaching management in higher vocational colleges. The implementation of school teaching management needs to take the management standard regulations as the system reference. However, at this stage of higher vocational college management, schools often lack perfect management regulations. Taking the personal safety management of school personnel as an example, the school management regulations do not have corresponding

regulations, so it is difficult to do a good job in school safety management. Under the background of digital transformation, the construction of a digital management platform and the increase of security supervision on encrypted data and private data can effectively improve the effectiveness of security management in higher vocational colleges.

3. Analysis on the innovation direction of teaching management in higher vocational colleges based on digital transformation

3.1. Digitalization of infrastructure construction

In the process of teaching management in higher vocational colleges, in order to better improve management efficiency, the corresponding infrastructure is needed to support management work. The traditional teaching management system mostly adopts a C/S structure and needs to install client software. The development of teaching management depends on the performance of terminal equipment, which has certain limitations and is difficult to adapt to the current complex and changeable teaching management requirements. In this regard, the innovation of teaching management in Higher Vocational Colleges based on digital transformation needs to strengthen the digitization of infrastructure construction, pay more attention to infrastructure construction such as information terminal, network construction and functional classroom construction, build a high-speed network covering inside and outside the campus, and monitor and record the teaching progress and learning situation with the construction of information terminal, so as to provide data support for teaching evaluation better. The construction of a secure data governance system provides protection for the security and privacy of teaching management data, and this teaching reform benefits from the improvement and improvement of school education information infrastructure.

3.2. Digitalization of government affairs

The teaching management of higher vocational colleges needs the implementation of relevant national education policies and the rational allocation of teachers, teaching facilities and other educational resources through the development of government affairs, so as to improve the effect of teaching management while coordinating government affairs. Especially in the digital background, the construction of a digital management platform can provide technical support for the development of teaching management, such as the construction of an information management system, which can be applied to teaching assistance and school functional procedures. Such as personnel management system and enrollment service system, which can provide a special platform for teacher management and student management, and build a more efficient and high-quality management platform for the development of education and teaching activities, so that campus office can be paperless, and the creation of smart campus can ensure the openness and transparency of management information, which is the main direction of teaching management innovation in Higher Vocational Colleges at this stage ^[2].

4. Innovation and optimization method of teaching management in higher vocational colleges based on digital transformation

4.1. Innovating the training mode of teachers

In order to effectively solve the problem of teaching staff construction in higher vocational colleges, it

is necessary to build an information and digital teaching staff training mode, strengthen the training of teachers' digital and information knowledge, so as to help teachers understand the application advantages of digital technology in the teaching process, improve teachers' digital application ability, and gradually deepen teachers' correct understanding of the reform trend of educational modernization. In this regard, for the development of teachers' digital application ability training, the construction of an online training platform can take full account of the reasonable allocation of teachers' time, such as teachers' online training and service platform, which mainly includes four modules of "textbook training, teaching resources, online classroom and online activities". The training content focuses on basic education textbooks and teaching, and takes the real needs of teachers as the core to carry out targeted training. At this time, teachers can selectively watch the training video according to their own teaching problems, and provide a special place for teacher training, which can effectively improve the effect of teacher training. In addition, with the construction of an online training platform, fully considering the time difference of teacher training, with this flexible remote training mode, teachers can participate in training anytime and anywhere, breaking the limitations of offline training in time and space, and better constructing the digital teaching staff in the new era ^[3]. In addition, in this process, it is also necessary to strengthen the training of teachers' digital skills. In order to make teachers better adapt to digital teaching, it is necessary to carry out teachers' information technology training, including the use of online learning platform (making electronic courseware, publishing course content, homework and online evaluation, etc.), the use of teaching management software (course arrangement, student data tracking, etc.), and the training of teachers' digital application ability, so as to better help students master the operation process of digital equipment system, deal with the digital transformation of education and teaching, and serve the improvement of the effectiveness of teaching management in higher vocational colleges.

4.2. Attach importance to the construction of safety management platform

Safety management is the focus of teaching management in higher vocational colleges. The construction and improvement of the school security management platform under the digital background, with the application of digital technology and intelligent systems, has accelerated the pace of intelligent campus construction, plays an important role in campus security management, and can realize the co-construction and sharing of information resources. In this process, for the construction of the student information management system, students' basic personal information, student status management, and score query can be entered into the system, and the face recognition database of the whole school can be established to complete the docking of face information in the school. In this way, in the process of teaching management in higher vocational colleges, we can quickly recognize the school face in abnormal events, understand its specific identity, intervene in the safety management of the school, and provide strong data support for face comparison. In addition, we can also build a campus security monitoring system. According to the monitoring needs of different scenes, we can equip corresponding monitoring equipment, do a good job in scientific layout, especially in the security management of key areas such as the school gate, teaching buildings, laboratories and dormitory areas. We should install high-definition cameras and connect them with the security management platform, which can greatly improve the monitoring of various risk points in the campus and ensure that there is no dead angle in security monitoring. Especially in the development of large-scale activities in higher vocational colleges, the safety problem is extremely critical. Through the construction of

the safety management platform, the whole process of large-scale activities is dynamically supervised, and remote viewing of the monitoring screen is supported, which can realize the early warning of safety risks and enhance the ability of emergency response to risks, so as to ensure the safety of personnel in Colleges and improve the effect of safety management in Higher Vocational Colleges ^[4]. In addition, for students' private information, secret data, etc., the management of Higher Vocational Colleges under the digital background needs to regularly update the system access rights, and do a good job in data backup and recovery, so as to avoid data loss or theft, which can further improve the effectiveness of safety management in higher vocational colleges, which is the top priority of teaching management in higher vocational colleges.

4.3. Building an integrated project teaching platform

The teaching management of Higher Vocational Colleges Based on digital transformation can build an integrated project teaching platform with the help of artificial intelligence, which can be used for teaching interaction and resource management, provide teaching support such as live teaching, course recording and playback, whiteboard interaction for professional courses, and dynamically track the progress of classroom teaching and students' learning, which can provide data support for the breakthrough of key and difficult knowledge, making classroom teaching more personalized and effective. At the same time, with the help of its intelligent management and data analysis functions, it can better reasonably allocate school resources, achieve intelligent course scheduling and automatic settlement of financial data, and provide technical support for teaching management in higher vocational colleges. In addition, with the help of the enrollment and publicity support function of the integrated project teaching platform, small programs can be developed for enrollment, or campus websites can be established, which can provide assistance for the development of school management. In addition, it is also necessary to apply it to the quantitative assessment of moral education, build a three-level management system of moral education, and implement moral education at all levels, from school leaders to moral education teaching and research groups, and then to class moral education, so as to ensure that the overall pace of moral education in schools is consistent, and better create a good moral education atmosphere in Higher Vocational Colleges ^[5]. Accordingly, it is also necessary to do a good job in the quantitative assessment of moral education. The quantitative assessment of moral education in the digital and information environment can provide assistance for the development of the regular management of the school. With the help of the integrated project teaching management platform, the implementation scheme of the quantitative assessment of moral education is automatically summarized, and the assessment results are calculated in real time to provide data support for the development of school management.

4.4. Construction of innovation and entrepreneurship education platform

In order to improve the quality of talent training, teaching management in higher vocational colleges also needs to cooperate with enterprises to build an innovation and entrepreneurship education platform, which can promote the integration of production and education, and fully integrate school education with social education. In this process, higher vocational colleges need to build an innovation and entrepreneurship service platform, which can provide students with online service guidance in the whole process of project incubation, team management, resource docking and so on, guide students to carry out real production and operation and innovation and entrepreneurship operation while participating in innovation and

entrepreneurship project activities, and promote students to experience the learning process of entrepreneurial capital raising, enterprise management, human resource management, industry and commerce, and tax law in entrepreneurship, marketing and financial management, enterprise culture and market development and construction in the process of team expansion training, so as to better help students expand the channels of professional talent training while starting a business, ensure that students can combine professional theoretical knowledge with practical development in the process of entrepreneurship, and provide innovative and entrepreneurial services for students of different majors. Full support can effectively improve the teaching management effect of Higher Vocational Colleges and promote the continuous deepening of school-enterprise cooperation ^[6].

5. Conclusion

To sum up, the innovation of teaching management in Higher Vocational Colleges based on digital transformation needs to pay attention to the digitization of infrastructure construction, the digitization of government affairs, and the digitization of teaching support. Through the setting of diversified information management systems and the construction of management platforms, it can provide technical support for the development of teaching management, improve the management effect, and cultivate compound talents for the development of modern society. The significance of digital transformation for higher vocational teaching management lies in activating the innovation vitality of all links of education through the flow of data elements. The key to its success is not the advancement of technology, but whether it can adhere to the “original intention of educating people”—it is necessary to avoid the misunderstanding of “technology first” and prevent data monitoring from dissimulating into a management tool; We should also continue to improve the digital literacy of teachers and students to ensure that technology application always serves the improvement of talent training quality. Only in this way can digital transformation truly become the “accelerator” for the high-quality development of higher vocational education.

Disclosure statement

The author declares no conflict of interest.

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