

Application and Challenges of Educational Informationization in Teaching Management

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ABSTRACT

In the modern education reform, education informationization is reshaping the teaching management model at an unprecedented speed and depth. With the deep integration of information technology and educational concepts, educational informationization not only provides massive learning resources, advanced teaching tools and convenient communication channels, but also opens the digital transformation in the field of teaching management. However, the wide application of education informationization also brings many challenges, such as the data security, information gap, teacher training and so on. Starting from the impact of education informationization on university management, this paper discusses the challenges and application countermeasures faced by education informationization in teaching management, in order to provide references for promoting the health and sustainable development of education informationization, building the smart campus and improving the educational quality.

KEYWORDS

educational informationization; teaching management; application challenge

Modern education informationization is sweeping the world with a rapid trend, and profoundly changing the paradigm of teaching management. With the rapid development of Internet, big data, artificial intelligence and other technologies, education informationization plays an increasingly important role in teaching management. On the one hand, education informationization enables innovation in teaching management by integrating educational resources, providing personalized learning experience, and improving teaching efficiency, etc., which adds wings for the improvement of teaching quality. On the other hand, the smooth advancement of education informationization also faces many opportunities and challenges such as data security, teacher training, ethical challenges, etc. Exploring the application and challenges of education informationization in teaching management is of great practical significance for promoting the development of teaching management in the direction of intelligence, efficiency and personalization.

1 The Influence of Educational Informationization on Teaching Management in Colleges and Universities

1.1 Clear the Direction of Teaching Reform

As the driving force of teaching management reform in the new era, higher education informationization points out the direction of teaching reform.

First, education informationization promotes the change of educational concepts, breaks the traditional education model through the application of information technology into the teaching process, emphasizes student-centered, and focuses on the cultivation of students' active learning, critical thinking and information technology application abilities.

Second, education informationization promotes the reform of education models. The application of information means, such as online courses, virtual simulation experiments and artificial intelligence-assisted teaching, provides a diversified, personalized and convenient learning experience, breaks through the limitations of time and space, and broadens the teaching channels.

Third, education informationization promotes the reconstruction of the education system and builds an education management system based on data and technology, which enables colleges and universities to realize the information management of the whole process from enrollment, teaching, scientific research to logistics, optimize resource allocation, and improve management efficiency and service level.

Fourth, the integration of education informationization with national strategies and industry development has realized the effective docking with the new development pattern and the layout of disciplines and specialties, and provided a guarantee for the close connection between university teaching management and social needs, so that colleges and universities can timely adjust the professional settings, optimize the course content, and cultivate high-quality and composite talents to adapt to the development of the times. In short, with the innovation of educational concepts, models and systems, higher education informationization provides a fundamental basis for the reform of teaching management in colleges and universities, promotes colleges and universities to actively integrate into the new development pattern, and provides strong support for the construction of high-quality higher education system and national economic and social development.

1.2 Enrich the Carriers of Teaching Management

The vigorous development of education informationization enriches the carriers of university teaching management and injects new vitality into the realization of strict teaching management. On the one hand, with the support of information technology, the data resources of university teaching management can be collected, pooled and shared, which breaks the barriers of different roles in resource development and utilization, promotes the horizontal and vertical coordination of the teaching management system, and enables the main body of teaching management to better adapt to the disciplinary structure and educational objectives.

On the other hand, the application of information technology has promoted the construction of a new model of talent training in higher education, which enables teachers' teaching model innovation, and provides rich teaching management resources for talent training through optimizing the structure of teachers, improving teachers' information literacy and upgrading teachers' teaching evaluation.

In addition, information technology also promotes the construction of the network education community and the integrated information management system, makes the teaching management of colleges and universities fit in with the education informationization, and explores and constructs the system paths that complement each other. Through the comprehensive application of information technology and intelligent technology, the ability of teaching management, decision-making and public service has been enhanced, and a new teaching management model and governance pattern based on "Internet plus" has been formed, which provides solid support for achieving the strict teaching management and the construction of a high-quality higher education system^[1].

2 The Challenges Faced by Educational Informationization in Teaching Management

2.1 Relatively Insufficient Quality of Teaching Management Personnel

Under the background of education informationization, the modernization and intelligentization of teaching management have improved the management level of colleges and universities, but the overall quality of teaching management personnel has not been improved simultaneously, which has hindered the smooth development of the informationization. First of all, some managers do not have a deep understanding of information technology, lack the ability to apply modern information technology, and cannot effectively use relevant technical means to improve work efficiency. At the same time, they are not proficient in the operation of information systems and lack the initiative to learn and update knowledge independently. As a result, they are at a loss when facing new management systems or teaching software and cannot solve problems independently, which reduces the efficiency of management work. Secondly, some teaching administrators lack the necessary innovative thinking, lack enthusiasm for education informationization reform, and only satisfied with step-by-step, which results in lagging management modes, and makes it difficult for them to adapt to the rapid development of informationization. In addition, the relevant personnel lack keen insight and execution when encountering new technologies or new models, and cannot actively promote the effective implementation of information measures. Third, some managers fail to recognize the far-reaching impact of information management on educational equity and resource optimization, only regard information management as a formal task, and lack active participation and responsibility consciousness, which results in information management remaining on the surface. Finally, teaching administrators have weak awareness of information security and insufficient attention to the protection of students' information, which is easy to cause information to be leaked or abused. It not only affects the reputation of colleges and universities, but also damages the rights and interests of students. The low quality of teaching management personnel not only hinders the effective implementation of informationization, but also makes it difficult for information management model to penetrate into all aspects of education and restricts the innovative development of teaching management.

2.2 Low Quality of Teaching Management Software Platforms

The problem of low quality of teaching management software platforms in education informationization has affected the efficiency and effect of teaching management. Specifically, first, the design of many teaching management software platforms is not humanized enough, and the interface is complex and the operation is inconvenient, resulting in users needing to spend a lot of time to get familiar with and adapt to them. This kind of non-smooth user experience reduces the promotion and application value of the software, and makes many college teachers and students less active in using the information platforms. Second, the functional modules of the software are not perfect, and some platforms even lack basic important modules such as attendance, performance management, and learning situation analysis. As a result, teachers cannot fully obtain the required information and data in the process of teaching management, which affects the scientific nature and accuracy of teaching decisions. Third, some platforms also have stability problems in data processing and transmission. System lag, data loss, and even crashes occur from time to time, which seriously affect the smoothness and continuity of the teaching process and result in a decline in trust of teachers and students. In addition to the shortcomings at the technical level, the quality of after-sales services of teaching management software platforms is also uneven, and the support provided by many manufacturers is not timely or professional enough, which

makes it difficult to solve problems in practical application of the software quickly, and increases the work burden and management pressure of teachers ^[2].

3 The Innovative Application Paths of Education Informationization in Teaching Management

3.1 Improve the Quality of teaching Management Personnel

In order to improve the overall quality of teaching management personnel and promote the process of education informationization, comprehensive measures should be taken from the aspects of technical training, thinking expansion, responsibility awareness and safety awareness. First of all, in terms of technical ability training, colleges and universities need to establish a long-term systematic training mechanism to teach basic operations, guide managers to master the core principles and practical application value of information technology, and encourage them to improve their technological control ability through repeated practices and active explorations. At the same time, colleges and universities should also provide flexible learning platforms and supporting environments to give managers the opportunity to update their knowledge and cultivate their self-learning habits and enthusiasm. In daily work, the assessment mechanism should be introduced to urge managers to independently deal with technical problems, and improve their operational proficiency and technical application ability, thus achieving the improvement of management efficiency. Secondly, in order to stimulate the creative thinking of management personnel, colleges and universities should carry out special discussions and exchange activities for informationization reform, actively create an atmosphere of thinking collision, help personnel to broaden their horizons, and enhance their sensitivity and recognition of informationization education reform. At the same time, the innovation reward mechanism should be established to encourage those who show creativity in management methods, so that they can generate positive internal drive in promoting the implementation of informationization, and no longer be limited to the traditional management model. Finally, the strengthening of security awareness is also an indispensable part of information management. Colleges and universities should regularly organize security training, and take the protection of student information as a part of the assessment, in order to remind managers to always remember the importance of information security. Through simulation exercises and the optimization of security management process, managers can quickly make correct judgments and take appropriate preventive measures when facing potential information leakage risks. In addition, a supervision mechanism should be established to strictly manage the information processing process to ensure that information management is always in a safe and controllable state. It is thus clear that the introduction of information technology not only helps to protect the rights and interests of students, but also helps to improve the management image of colleges and universities.

3.2 Improve the Quality of Teaching Management Software

In order to improve the quality of teaching management software platforms and promote the effective application of education informationization, firstly, humanity design of teaching management software should be strengthened. Developers need to deeply understand the actual scenarios when teachers and students use these platforms, and start from the experience of teachers and students, simplify the operation process, optimize the interface layout, enhance the intuitiveness of the interface and the convenience of operations, so that the teaching cost and adaptation difficulty can be reduced, and teachers and students can easily use them. At the same

time, the function modules of the platform should be improved. Each teaching management software should set up core modules covering attendance, performance management, learning analysis, etc., to ensure that teachers can obtain comprehensive and accurate teaching information, thus improving the scientific nature of teaching management and the accuracy of decision-making, and meeting the basic needs of teaching. Secondly, the platform should improve the stability and security of data processing and transmission. Through the optimization of the system architecture and the improvement of the technical support, it can avoid frequent problems such as delays, data loss or system crash, and maintain the continuity of the system and the smoothness of teaching. Certainly, only the technical optimization is not enough to comprehensively improve the use of teaching management software, and the after-sales service quality can not be ignored. In order to ensure that teachers can receive timely and professional support when they encounter problems, software suppliers should provide comprehensive technical support and rapid response mechanisms to assist teachers to solve problems in the shortest possible time and reduce the management burden and technical troubles of teachers^[3]. Finally, in view of the problems of inconsistent quality of current teaching management software and difficult communication of data, education departments should issue unified technical standards and evaluation systems, so as to regulate the market, promote the data interconnection, avoid information islands, and lay a good foundation for the in-depth and long-term development of education informationization.

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