

Informatization Strategy of College Education and Teaching Management in the Era of Cloud Computing and Big Data

Weili Wang^{1*}

1.Zhengzhou Shengda University 451191

Abstract: In the era of cloud computing and big data, the rapid development of information technology has brought great challenges and opportunities to college education and teaching management. Cloud computing and big data technology, as important representatives of the current information field, are profoundly changing the way and mode of university education and teaching management. In view of this background, it is particularly important to formulate the corresponding information strategy. With the popularization and maturity of cloud computing technology, colleges and universities can realize resource sharing, flexible computing power, convenient data storage and secure information management through cloud platforms. Big data technology provides universities with the possibility of more in-depth data analysis, personalized teaching and fine management. Therefore, how to make full use of cloud computing and big data technology to promote the informatization level of college education and teaching management has become an urgent problem to be solved.

Keywords: Cloud computing; The era of big data; Higher education; Teaching management informatization

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Introduction:

With the rapid development of cloud computing and big data technology, the informatization of college education and teaching management has become an inevitable trend of college development. Information technology has penetrated into the teaching management field of various colleges and universities, such as the sharing of teaching resources, online homework, examination management, student score management, etc. These information means provide colleges and universities with efficient, convenient and intelligent education and teaching management services, and can also improve students' learning quality and teachers' teaching effect. This paper will start with the analysis of the current application of cloud computing and big data technology, and explore the strategy of informatization in college education and teaching management, in order to provide some useful ideas and suggestions for the construction of college informatization.

1. Characteristics of informatization in college education and teaching management

The informatization of college education and teaching management refers to the digitization and network management of college education and teaching management by means of informatization. Compared with the traditional teaching management mode, the informationization of college education and teaching management reflects the characteristics of digitalization of teaching resources. The informationization of college education and teaching management digitizes traditional teaching resources, realizes resource sharing and digital management, and provides students and teachers with a more convenient way to obtain resources.

College education and teaching management informatization will network traditional classroom teaching, realize distance teaching and online teaching, and provide students and teachers with more flexible teaching methods and time arrangements.

For example, students can access teaching content through online teaching platforms and distance learning courses; Teachers can conduct remote teaching and online course recording through digital teaching platform and video conferencing. College education and teaching management informatization digitizes the teaching process and provides scientific and accurate teaching management decision support for colleges and universities through big data analysis.

2. Requirements and problems of informatization in college education and teaching management

2.1 Requirements for informatization of university education and teaching management

The informatization of education and teaching management in colleges and universities is an inevitable trend in the development of colleges and universities, which has brought new requirements for teaching management in colleges and universities, requiring colleges and universities to digitize teaching resources and realize resource sharing and exchange, so that students and teachers can easily obtain and use teaching resources and improve teaching effect and efficiency. Colleges and universities establish standardized teaching management process and realize the automation of teaching management process by means of information technology.

2.2 Problems existing in informatization of university education and teaching management

The informatization of university education and teaching management plays an important role in improving the efficiency of teaching management, improving the quality of teaching and promoting students' autonomous learning. However, in practice, the informatization of university education and teaching management requires the digital sharing of resources. In reality, there are still many situations in which the digitalization degree of teaching resources among different colleges and departments is different, and the sharing of resources is not smooth enough. There are still some problems in the application of informatization of teaching management in colleges and universities, such as the uneven level of teaching management and the different level of teaching management in different disciplines and specialties, which lead to great differences in teaching results. University education and teaching management information requires students to be able to learn independently, but the ability of students to learn independently is not strong. Because students are not adapted to information-based education, many students are still used to traditional teaching methods, resulting in low efficiency of students and poor education results.

3. Informatization strategy of college education and teaching management in the era of cloud computing and big data

3.1 Ensure the practicability and operability of the education and teaching management system

In the era of cloud computing and big data, colleges and universities need to ensure the practicability of education and teaching management system, which means that the system can truly meet the needs of college education and teaching management and provide useful functions and services for teachers and students. Colleges and universities should have in-depth communication with teachers and students to understand their needs and expectations, and make system customization according to the actual situation. The functions of the system should be targeted and practical, able to solve practical teaching management problems, improve teaching effect and learning experience, colleges and universities should also cooperate with the industry, learn from advanced education and teaching management experience and technology, to ensure the practicability and foresight of the system. Colleges and universities need to ensure the operability of the education and teaching management system, which means that the use and operation process of the system is simple and convenient, and users can easily get started and use the system flexibly. Colleges and universities should pay attention to the interface design and user experience of the system to ensure that the interface is concise and clear, and the operation process is reasonable and easy to understand.

The system should provide easy to operate function entry and operation guidance to help users quickly grasp the use of the system, universities should also provide a full range of training and technical support to help users solve the problems and confusion in the use process, improve user satisfaction and system operability. Colleges and universities should also pay attention to the stability and security of the system. The information system may face problems such as network failure, hardware failure and data leakage during operation. Colleges and universities need to take corresponding measures to ensure the stability and security of the system. This includes the establishment of a sound system backup and recovery mechanism, regular security vulnerability scanning and protection measures to ensure the normal operation of the system and the security of user data. Education and teaching management system needs to integrate with student management system, library system, laboratory management system and other systems to realize information sharing and circulation.

3.2 Pay attention to the collection and sorting of basic information

In order to realize efficient, convenient and intelligent education and teaching management services, colleges and universities need to formulate effective information strategies. When formulating strategies, colleges and universities need to pay attention to the collection and arrangement of teaching resources. Teaching resources are the important foundation to support teaching activities, including teaching materials, course design, teaching videos, teaching cases and so on. Colleges and universities can establish a unified teaching resource library and online course platform to collect all kinds of teaching resources, digitize them and sort them out. At the same time, through cloud computing technology, these resources are stored in the cloud to achieve resource sharing and access at any time, students and teachers can easily obtain and use teaching resources, and teachers can carry out personalized teaching design according to the needs of students. Colleges and universities need to pay attention to the collection and sorting of the information of students and teachers, students and teachers are the main body of education and teaching activities, and understanding their information is crucial for teaching management.

Through cloud computing and big data technology, the information is analyzed and excavated to discover students' learning characteristics and problems, as well as teachers' teaching advantages and shortcomings, so as to provide a scientific basis for teaching management decision-making. Universities also need to pay attention to the information security and privacy protection of students and teachers, establish a compliant data management mechanism, and ensure the security and confidentiality of students' and teachers' personal information. In addition, colleges and universities also need to pay attention to the collection and sorting of information in the teaching process. Information about the teaching process includes classroom interactions, student performance, assignment submissions, test scores, etc. Colleges and universities can collect students' learning and teachers' teaching data through teaching management system, online homework platform, examination management system and other tools.

3.3 Strengthen the maintenance of education and teaching management system and the construction of security protection system

Education and teaching management system is an important infrastructure supporting university teaching management, which needs to be maintained and updated in time. Colleges and universities can establish a special system maintenance team, responsible for regularly checking the operating status and performance of the system, and timely repair the loopholes and failures in the system, colleges and universities should also establish a system backup and recovery mechanism to ensure the security and integrity of system data.

Colleges and universities can take various measures to strengthen the security of the system, such as establishing a strong firewall, encrypting sensitive data, setting up strict permission management, and implementing security audits. At the same time, colleges and universities should also strengthen the security education and training of system users, improve their information security awareness and skills, and avoid human operation of security loopholes. Universities should also work with relevant departments or enterprises to establish information security compliance frameworks and mechanisms.

Closing remarks

In summary, the informatization of college education and teaching management in the era of cloud computing and big data is an inevitable trend of college development, and also an important means to improve the efficiency and quality of teaching management. When formulating education and teaching management informatization strategies, colleges and universities need to pay attention to the practicability and operability of education and teaching management systems. Through effective informatization strategies, colleges and universities can give full play to the advantages of cloud computing and big data, improve the level and effect of teaching management, and provide students and teachers with better education and teaching experience.

References:

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