Research on Innovation of University Smart Campus Informatization Construction from the Perspective of Big Data

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Keywords: Big data, Smart campus, Informatization

Abstract: The network technology in modern society is more and more developed, which has an important impact on all walks of life. With the continuous progress and development of many industries, a large number of big data resources began to be borrowed and shared, which brought many new challenges and opportunities to the education of colleges and universities. From the perspective of big data, it is necessary to give full play to the information system of smart campus in colleges and universities, so that it can play an active role in the smart campus of colleges and universities. In addition to the big data technology itself, university administrators should also pay attention to emerging technology elements such as cloud computing technology and Internet of Things platform, and use these elements to provide technical support for the construction of smart campus. On the basis of analyzing the informationization of smart campus, this paper analyzes the structure of smart campus in universities and the significance brought by big data, hoping to promote the continuous innovation of the informationization construction of smart campus in universities from the perspective of big data.

1. Introduction

The arrival of the era of big data has brought great impact on people's life, which makes big data applied in the development of various industries. With the continuous progress and development of many industries, a large number of big data resources have begun to be borrowed and shared, which brings many new challenges and opportunities to the education of colleges and universities [1]. According to the actual situation at this stage, the premise of building a smart campus in Colleges and universities is to adapt to the development trend of big data background and apply big data technology to various teaching activities in Colleges and universities. With the emergence of smart campus, all kinds of data also show a blowout growth, which brings great obstacles to the development of colleges and universities, and affects the construction of smart campus. In the process of the construction of modern educational technology team in Colleges and universities, in the process of promoting the smart campus, combining with the actual work needs, the informatization construction of smart campus can improve all kinds of information management, at the same time, effectively monitor all kinds of work, improve the efficiency of work, let the campus enter the intelligent state, and improve the efficiency of various work [2-3]. In the current construction of modern educational technology team in Colleges and universities, the construction of intelligent campus informatization according to the actual work needs can effectively optimize various information management, realize all-round monitoring of all kinds of work, improve work efficiency, and promote all colleges and universities to enter the intelligent state immediately [4].

As an advanced form of university informatization, smart campus is a further promotion of digital campus. It uses the emerging information technology to perceive the physical environment of the campus, so as to intelligently identify the work, study and individual characteristics of teachers and students, connect the digital space and physical space of the school, and create a convenient, comfortable, intelligent and open educational and living environment for teachers and students [5]. From the perspective of big data, it is necessary to give full play to the role of University intelligent campus information system, so that it can play a positive role in the smart campus of colleges and universities [6]. Education departments and university administrators should pay enough attention to various problems existing in the construction of smart campus, and take

  DOI: 10.25236/icatpe.2020.127

targeted measures to solve these problems, introduce new technologies to colleges and universities, and cultivate a group of high-quality talents, so as to create a high-quality smart campus [7]. Based on the analysis of smart campus informatization, this paper analyzes the structure of University smart campus and the significance of big data from the perspective of big data, hoping to promote the continuous innovation of University smart campus informatization construction from the perspective of big data.

2. The Influence of Big Data on Campus Information Construction

2.1 Provide Information Technology Support

In the 21st century, with the rapid development of information technology, people's life, work and learning gradually enter the information mode, and the era of big data has led the pace of life of contemporary people. In the context of big data, computer technology has a direct impact on the construction of university campus. Campus information construction should not only innovate teaching, but also start from campus management. As a smart campus, it is necessary to analyze a large number of unstructured morphological data to form intelligent teaching and management. This puts forward higher requirements for data processing speed, data analysis ability, data acquisition, and the realization of complex data types. Big data is a set of data that can not be captured and managed by conventional tools or software. They must have new processing mode to have strong decision-making power, process optimization power and insight. Colleges and universities mainly bear the responsibility and task of cultivating and managing students. They can process information with the help of relevant tools in the construction of management informatization, realize the effectiveness of student management and education, standardize various service behaviors, and realize the purpose of Education [8]. Under the background of big data, information resources open up wider channels for the full use of digital information technology. Therefore, in the comprehensive management, colleges and universities should establish the big data thinking, conduct comprehensive and in-depth research on its related technologies, and stimulate its potential resource utilization value to the greatest extent. In the design of big data, its design concept makes the relevance between the data gradually enhanced. Through the use of data and the information obtained in the analysis, automatic analysis and deeper mining can be carried out.

2.2 Innovating Teaching Management Mode

Under the concept of big data, colleges and universities can reasonably, orderly and efficiently integrate and summarize data, comprehensively analyze and differentiate data, and provide technical support and decision-making guidance for intelligent campus information construction, so that colleges and universities can develop steadily in the direction of intelligence. In actual construction, big data is the core, which includes application platforms such as data management, storage, calculation, analysis and processing. It is the hub connecting all parts of smart campus, which can provide data protection. Under the background of big data, the construction of smart campus should apply some advanced technologies, such as data mining and cloud computing, and build a perfect data exchange platform to better integrate data. When the concept of big data is introduced, it can greatly improve the solidified management thinking in the past and revitalize the traditional teaching management methods in schools. Flexible application of data integration analysis and mining technology can help colleges and universities to efficiently apply management schemes in practical teaching management, and then adapt to teaching needs and requirements, and meet the requirements of development and progress in today's era [9]. In the era of big data, the construction of smart campus not only focuses on improving the service level and teaching level, but also improves the efficiency of colleges and universities through resource sharing. Under the background of big data era, the construction of smart campus is reflected in all aspects. How to improve the reuse rate of teaching data resources and improve the teaching level of colleges and universities will have a direct impact on the teaching management of colleges and universities.

Through the mobile terminal, teachers and students can process and obtain information in real time, and students can learn anytime and anywhere. As far as management is concerned, managers can obtain information more conveniently and ensure communication efficiency. In this process, we should also pay attention to smart campus safety design.

3. Innovation of University Smart Campus Informatization Construction under the Background of Big Data

3.1 Meet the Needs of Educational Informatization

Using database system for work and study has become an inevitable trend in the development of colleges and universities. The database system contains a large amount of data information and data content, and teachers and staff can query and count the required knowledge in the database system. In the construction of smart campus, data can provide powerful support for all aspects of education, and all kinds of things can be digitized as much as possible. Only in this way can the application value and forecasting function of big data be fully reflected. Under the background of big data, using data mining and data analysis technology, we can realize unlimited time and space learning mode, such as learning through network platform, and sharing data resources through resource sharing. Under the background of the new era, informationization has become the vane of education, and all aspects are full of expectations for educational informationization. Therefore, in the construction of smart campus, relevant parties should clearly recognize this point, so as to achieve the ideal construction effect in the end. With the big data platform, the teaching and management of colleges and universities have gradually become more transparent, and the novel teaching mode can attract more students' attention. Smart campus construction is committed to a more personalized service management concept, which brings different teaching and management concepts to college teachers and students through more advanced sensing technology.

3.2 Improve the Ability of Big Data Integration and Application

Smart campus is conducive to promoting the sustainable development of schools, but in order to give full play to its role, relevant staff should have good data collection and analysis capabilities. Big data technology can not only help teachers and students in data statistics, but also use this technology to analyze and process data. Compared with traditional data analysis methods, this method is more efficient. Using big data technology, on the one hand, it can meet the needs of deep mining of data that cannot be completed by traditional data architecture, and can analyze and process different types of data scientifically and effectively in a short time. On the other hand, by using big data to analyze students' learning styles and study habits, students' future development direction and suitable work types and fields can be known, thus realizing the optimal management of education.

Big data for the construction of smart campus not only increases the use of information technology in smart campus, but also changes the traditional management mode of smart campus and provides data reference for smart campus. Figure 1 shows the breakdown of complexity factors in education management.

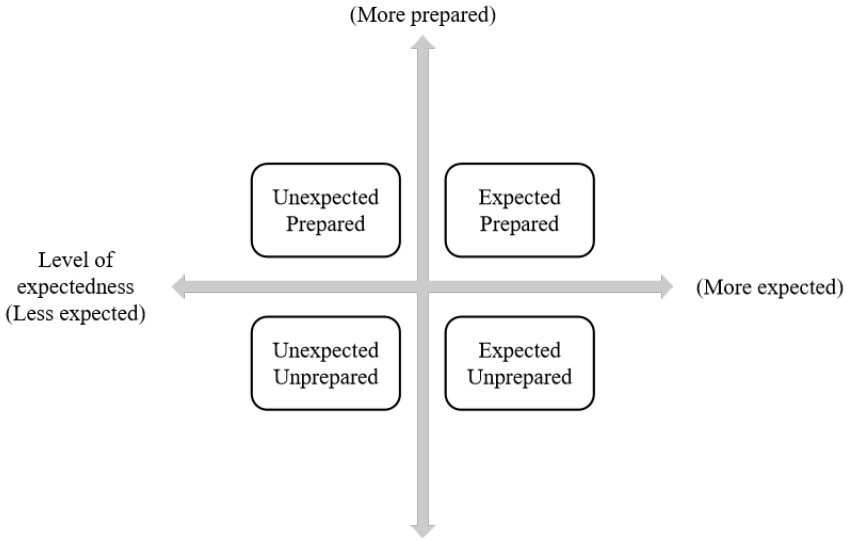

Fig.1 Classification of Problem Complexity Factors in Education Management

With the continuous development of society, information technology has brought great influence to various industries, especially in the big data environment, the superiority of data has been fully demonstrated, and its value has become more prominent. Establishing an efficient intelligent campus information system can give full play to the value of all kinds of information, monitor the abnormal situation in the work in time, and take effective measures to avoid risks. At the same time, it can also improve the effectiveness of management work with the help of the value of big data, and give full play to the effectiveness and role of information technology [10]. In the process of actual construction, we must first ensure that the modern educational technology team has a very perfect self-leadership system. Therefore, we should strengthen the construction of campus network and multimedia teaching, optimize all the work from reality, and increase the public's attention to information construction in the process of building the leadership system.

4. Conclusions

Under the background of big data, information resource management is the primary work of building smart campus, which has a direct impact on the construction of information-based university management system. Big data has become an important trend in the development of the new era, and its rational application in the construction of smart campus can further optimize the construction mode and effectively strengthen the teaching management effect of schools. Under the intelligent decision-making and comprehensive analysis of Internet big data technology, the informatization construction of smart campus can not only promote the education and teaching of smart campus to be more scientific and intelligent, but also have a positive impact on the intelligent management and service of schools. Intelligent decision-making and in-depth analysis based on big data will definitely make the construction of smart campus in colleges and universities take a new step, and the use of big data technology will also greatly facilitate the education and management of schools. Under the background of the continuous development of society, the informatization construction in colleges and universities has become an inevitable requirement at present, which is an inevitable trend of the development of colleges and universities and an inevitable stage of social development. With its potential value and technical characteristics, big data is bound to show its “wisdom” in colleges and universities, making it an important driving force for the rapid development of “smart campus” in colleges and universities.

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