Implementation of Smart Campus Platform under Big Data Background

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Abstract: Under the background of rapid development of information data, the emergence of big data provides more convenience for study, work and life. The intelligent campus platform relying on information technology such as big data can give full play to the advantages of big data, promote the modernization of campus with the help of network platform, and lay the foundation for the improvement of teaching management level and the expansion of teaching resources, this paper focuses on the analysis of the various functions of the smart campus platform and the core technical content of the construction of the smart campus platform, including big data technology, cloud computing technology and Internet of Things technology, etc., combined with the actual needs of the current smart campus platform construction, the platform implementation strategy is proposed, hoping to provide some references for the construction of the smart campus platform, and then provide intelligent services for school teaching, teaching management, etc, to improve the efficiency of school management.

Keywords: Big data; Smart campus; Implementation strategy

At present, the internal management matters of the school are increasing, and the management data is becoming larger and larger. In order to improve the convenience and scientificity of data and information processing, it is necessary to establish a smart campus platform on the basis of the original information management platform, and realize data information through big data technology At the same time, teaching systems and school management systems can be built in the smart campus platform, which can realize information sharing between multiple departments, provide effective data support for the development of teaching management.

1. Functional Requirements of Smart Campus Platform

1.1 Operability

The information data in the campus mainly includes various information of teachers and students, scientific research data, educational affairs, finance, etc. The content of these data is directly related to the smooth development of various work on the campus. When building a smart campus platform, it needs to have strong operability. To ensure that it can effectively enhance the experience of teachers and students.

1.2 Data compatibility

Compared with the traditional information management platform, the smart campus needs to break the information limitations between different departments in the school, ensure the effective transmission of various data, and realize the instant sharing of information. Due to the huge data information and rich types, the smart campus also needs Strong compatibility and integrity can realize the construction of an efficient management model.

Intelligent service

Smart campus is not a simple upgrade and function expansion based on the existing information management platform, but uses cloud computing, Internet of Things and other technical means to realize the informatization of the campus and ensure the information and data inside the campus Security, therefore, the smart campus platform needs to provide smart services for various activities and work within the campus. For example, the campus card can integrate multiple businesses, it can better meet the actual needs of teachers and students [1].

2. Technical Analysis of Smart Campus Platform Construction under the Background of Big Data

2.1 Big Data Technology

The analysis of data information by big data technology is far beyond conventional data analysis software, and it has more advantages in processing speed and accuracy. It can realize the comprehensive analysis and integration of data information in a relatively short period of time, so as to provide comprehensive reference information for managers and campus management decisions.

2.2 Cloud Computing Technology

Cloud computing technology is to decompose big data and conduct in-depth analysis with the support of different servers. It can calculate the results in a relatively short time to meet the various needs of users. During the construction of the smart campus platform, Cloud computing technology can adjust the coordination of data and information, which is more conducive to the construction of smart campus. At present, the cloud computing technology in the construction of smart campus can realize the functions of transmitting information and data to users, building a supervision system, etc., to ensure that the managers of the smart campus platform can integrate various resources to achieve comprehensive management.

2.3 Internet of Things Technology

In the application process of Internet of Things technology, sensors are mainly used to establish connections between different systems, which can make the smart campus platform have positioning and supervision functions. The Internet of Things technology is mainly composed of sensors, embedded systems, and nanotechnology. The sensors can convert digital signals, while the embedded system can integrate the software and hardware of the platform and related technologies together for the smart campus. Platform construction provides physical support [2].

3. Implementation Strategy of Smart Campus Platform under Big Data Background

3.1 Establish a good network environment

In order to ensure the effective application of the smart campus platform and give full play to its functions, it is necessary to improve the network system inside the campus so that teachers and students can use the wireless network to access the smart campus platform at any time. The wireless network needs to meet the requirements of comprehensive coverage, including teaching buildings, Office areas, playgrounds and public areas, etc., at the same time, the network in each area needs sufficient capacity. At the same time, the access to the wireless network also needs to be controlled in a variety of ways. Access rights can be divided through the identity authentication function, thus improving the efficiency of the smart campus platform.

3.2 Information data storage

The smart campus platform built under the background of big data, when reading data, the main method is to read files. In order to realize the storage of information data, the data files need to be uploaded. This storage mode will take up a certain amount of time. Therefore, when building the smart campus platform, the information data storage mode can be optimized, and the HDFS cluster can be used to upload files. At the same time, the uploaded files can be uniformly placed on the address of the proxy user to control access rights [3].

3.3 Information data calculation

Data computing is one of the main functions of the smart campus platform. It is usually presented in the form of an independent system. It will not be interfered by other software during the calculation process. When building the smart campus platform, in order to realize the function of data computing, It can be designed using code and programming.

3.4 Ensure rich information of big data

For the construction of the smart campus platform, the advantages of information technology such as big data are obvious. Teachers can use the smart campus platform to optimize and improve the teaching process, and gradually improve the teaching mode, and part of the management work in the campus can also be achieved through the smart campus platform. For this reason, the school needs to ensure that the smart campus platform has diversified and sufficient data information, which can be based on the actual situation of the current campus work, with the support of big data technology, gradually improve the smart campus management platform. On the one hand, it is necessary to clarify the index value of the construction data. On the other hand, it is necessary to scientifically design the smart campus platform construction plan. Through the analysis of data information, the current The education situation and smart campus management are counted and analyzed to avoid conflicts in the application of

the smart campus platform.

3.5 Determine the Function Module of Smart Campus Platform

While realizing the integration of various resources, the smart campus platform also needs to have an independent innovation service platform. This service platform can provide teachers and students with sufficient teaching resources in daily teaching and assist the development of teaching work, especially when teachers are applying It should make full use of the functions of the platform to realize the innovation of teaching links. For example, teachers can apply for the construction of students' electronic files, record a series of data contents such as students' attendance, study and school performance. In addition, the smart campus platform also needs to have service functions, including the tripartite interaction of teachers, students and parents. Teachers can publish relevant content about family education on the platform, and parents can also communicate with teachers on the platform to view students' electronic files [4].

3.6 Specific construction content

In the specific construction of the smart campus platform, it is necessary to set up three ports for teachers, students and platform management respectively. The ports for teachers and students support the mobile terminal and pc terminal. After logging in, teachers can use the online teaching system and learning resources in the smart campus platform to improve the teaching process. Teachers need to have the right to access student files and can modify and update them, in order to enhance the value of the smart campus platform in teaching work, the teaching and research team can focus on developing the teaching method library and teaching resource library, and students can complete various tasks assigned by teachers on the platform. In addition, the main managers of various departments of the school can use the smart campus platform to complete the relevant work of the department [5].

Concluding remarks: In short, at this stage, informatization construction has become the main content of campus management and campus construction. Combined with the actual situation of current campus management and teaching work, it is necessary to establish a smart campus platform on the basis of the information management system, which can not only achieve The basic optimization of education management can also effectively improve the work efficiency of education management. In the process of building a smart campus platform, it is necessary to clarify the multiple functions that the platform needs to have, ensure that the design and construction of the smart campus platform can meet the needs of teachers and students, and at the same time give full play to the advantages of big data technology, cloud computing technology and Internet of Things technology, and continue to build and optimize the smart campus platform, while promoting campus modernization, Realize the improvement of education management level.

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