Construction and Operation of Digital Campus System Platform in Guangxi Polytechnic of Construction

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ABSTRACT

The digital campus is the advanced information technology on campus for all hardware and software resources were fully digitally. This article mainly aiming at existing question of our school digital campus to put forward a solution that builds a unified identity authentication platform which once you have logged in, you can switch to all platforms without password. And this paper focuses on the principles, contents and expected effects of our digital campus construction.

KEYWORDS

Digital campus; platform construction; unified identity; system integration component.

INTRODUCTION

With the transition from higher education to popularization, the number of college students is increasing rapidly, and the requirements of honesty education, quality education, individualized teaching and individualized training need to increase the details of student management. Student information management has entered the era of big data [1-2]. The construction of digital campus is the effective use of information technology in the campus, and the construction of digital campus has become a measure of school quality and the overall level of signs [3]. In addition, with the continuous improvement of network infrastructure and the arrival of the era of big data, the pace of digital campus construction in Colleges and universities is accelerating, which puts forward new requirements for the information management of College Students work [4-5]. In this situation, to conform to the trend of development of information technology, the Guangxi Polytechnic of Construction is keeping up with the pace of development of information technology. At the same time, Guangxi Polytechnic of Construction combined with their own development needs, the management information construction of students in the school has carried out a new exploration and design.

DEVELOPMENT STATUS AND EXISTING PROBLEMS OF DIGITAL CAMPUS

After several years of digital campus construction, our hospital hardware facilities
have been more complete. There are more and more application systems on campus. With the basic business application system, it can meet the information needs of management personnel, teachers and students basically. However, the software, hardware and implementation technologies adopted by different application systems are different, the information is repeated and inconsistent, and the data cannot be shared. So that each part of the business system is relatively isolated, the system cannot achieve a unified access to information and identity authentication, and business systems cannot achieve integration. Campus information construction resources cannot be effectively utilized, resulting in the use of digital campus generally and a lot of problems [6-8]. On the other hand, because of the heterogeneity between these old application systems, only the traditional point to point traditional data connection method can be used to realize the conversation between systems, and the data association and exchange sharing [9-10].

**Existing problems**

But every application system has its own user management, authentication [11], authorization and other functions, which brings the following questions:

1) Each application system manages a set of databases. Independent identity authentication system implements identity authentication, which caused a lot of redundant construction and waste.

2) When user’s access different application systems, they need to be verified by different systems, which requires multiple input validation information to log on. It increases the possibility of user password leakage, and forces users to remember the user name and password of each system, which brings a lot of trouble to users.

3) Each application system has authentication and authorization to the user. The system administrator needs to maintain the authorization security of multiple systems, and the modification progress of the policy cannot keep up with the change of policy, thus reducing the work efficiency.

4) Unified analysis of the application of all users cannot be achieved.

To solve the above problems, it is urgent to build a unified identity authentication platform that can achieve unified management of user authentication information, unified user authentication and unified authorization [12].

**CONTENT OF DIGITAL CAMPUS CONSTRUCTION**

The construction of digital campus should follow the guiding principle of overall planning, step-by-step implementation, and promoting construction by using resources and sharing resources [13]. The construction of digital campus is a long and complex process, and the promotion process mainly includes the planning, implementation and evaluation of informatization. The implementation of digital including campus network infrastructure, the construction of content system support and application platform of information standard, unified identity authentication platform, information portal and data center, and information security system, information standard and management standard of information security [14].

The construction of digital campus mainly includes two parts: software and hardware. From the point of application, the construction of digital campus is divided into functional part and nonfunctional construction. For hardware, our hospital...
facilities are more perfect. Software is an important prerequisite for the construction of digital campus. At present, our company is working with a high-tech company of Nanning which is engaged in campus network construction, application software and network set as one of the high-tech companies, and research and development of relevant software to ensure the stable operation of the System University the stable operation of the system. The main contents of the construction include the following parts:

The construction of basic service platform

The construction of basic service platform includes installation, deployment and function debugging of public data management, unified information portal and unified authentication platform installation.

Public data management platform is a platform for unified management of data resources and implementation of data exchange of application services. Through data center, digital campus data sharing can be realized. And the data center data can provide deep mining which is an important basis for data analysis and decision support. Data center platform also provides data cleaning and integration functions, cleaning redundant data. At the same time, the exchange of data can be cleaned, converted, loaded into storage and other data exchange services. Besides, it can clean, transform, load and store data exchange services, which can maintain data consistency, integrity and effectiveness without affecting the operation of each business system.

The information portal platform is at the top level of the digital campus architecture, which provides different information services for both the public and the teachers and students. It is the window of centralized display of information in digital campus, and the only public access to access digital campus. It is the service platform of human-computer interaction between digital campus users and application systems.

Unified identity authentication system is an important part of digital campus platform, mainly to achieve the unified management of users, user rights control and security. Electronic identity authentication system provides centralized authentication service for each system, unified management, which can improve the security of digital campus platform and ensure the stability of digital campus development. Through the unified data center, the identity of the user authentication system can provide centralized identity management for the user to ensure the uniqueness, authenticity, integrity and confidentiality of user identity. At the same time, it can establish complete identity trust relationship for information access system. Users achieve single authentication through unified information portal single sign on, which avoiding multiple login and repeated investment.

Academic management system, unified repair and complaint platform installation and deployment

Student management system includes financial management, student records management system, awards management system, management system, student disciplinary literacy integral management system, management system, wireless call party. Through the improvement of the upgrading of academic management system, in order to facilitate students to complete their own reward and punishment, help loan work, access to progress, check the discipline / reward situation. At the same time, it is
convenient for the administrative staff to review the application filled by the students, check the progress of the application, and inquire the statistics and so on. Wireless naming based on GPS positioning function and face recognition, teachers can randomly start the name of the class during the course. Students sign in the prescribed time, improve the students in Vocational Colleges late leave early class phenomenon.

**Parent service platform, leadership analysis platform, mobile service platform installation and deployment**

Through the establishment of parents' service platform, parents can understand the students in school awards, funding, performance, discipline, curriculum arrangements, examination arrangements and school professional and department profiles at any time and check the students' school dynamics. The system also provides parent problem counseling area to facilitate interaction between schools and parents. Schools also provide questionnaires to collect information for parents of students.

The leadership analysis platform can realize four major statistical functions. First, it can provide the corresponding statistical query function for the leader according to the selected business management module. Second, it can achieve student details statistics and statistics on age and educational background of full-time Counselors. Finally, it can real-time statistics on the management of each department.

Further promotion of campus digital platform, but also must face the mobile client. In the mobile service platform set up a mobile portal, mobile console, mobile announcement, an overview of the campus service, mobile news, mobile query, students pay inquiry.

**Unified repair and complaint platform**

The installation of unified repair and complaint platform has the following functions. It can be implemented according to department and project classification repair, and automatically extract the contact way of the repair person. Access to personal information function: in the same page column display and things have done, consulting feedback records, looking at the current repair items processing progress process. Score the completed items. Department Administrator processing function: On the same page, the columns are displayed and the items have been done. The repair information can be answered, transferred to the department, assigned to the department staff, record the progress of the process of processing. Information can be disclosed or not disclosed. Maintain the maintenance project of the department. Public feedback: displays all the processing settings for public information. Command and control function: according to the Department, according to the time for data statistics, view a department a certain period of repair information completion, scoring situation.

**Integration with existing systems**

At present, the school has built a relatively complete campus network, and already has some application system services. It can be said that a large number of digital resources have been accumulated. Therefore, the digital campus construction cannot abandon the existing system reconstruction. We can make full use of existing resources. Through the existing application system and the integration of new application system and unified data standards, data sharing is realized to reduce the
cost of development and maintenance. At the same time, on the basis of existing functions, the digital campus system with perfect function and high maintenance efficiency has been gradually established.

SUMMARY AND PROSPECT

The construction of digital campus not only can realize the informatization of campus teaching and management, but also can effectively improve the overall school running. At the same time, it can effectively improve the overall school running and scientific research ability, is a manifestation of the overall competitiveness of the school. The construction of digital campus platform includes school teaching and management of students most of the content, is conducive to improve the strength and effect of student management, management status and accurately grasp the ideological trends of college students, improve the pertinence and effectiveness of the management of University students. Educational administrators can get rid of a large amount of repetitive labor, so that they have more time to carry out other student management work. Using the powerful data processing ability of the information system can carry out the important work, improve the work efficiency and reduce the management cost. At the same time, it helps to coordinate the various departments, improve the level of business operations. Digital campus will create a more efficient and convenient campus life for school teachers and students.

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REFERENCES


