

A unified identity authentication platform for intelligent education

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Abstract. The construction and application of smart campus is an inevitable stage in the information construction of education system. The construction of smart campus is to promote teachers and students to improve the level of application of information technology as soon as possible, promote school teaching reform, promote quality education, promote the modernization of teaching means, and comprehensively improve the modern management level of the school, It plays an important role in strengthening the communication between schools and the outside world.

Keywords: Intelligent education, information technology, Platform.

1 Introduction

With the continuous acceleration of the construction of educational informatization in the campus and the introduction of various policies of the new college entrance examination reform [1], all these pose a very severe challenge to school education“. The emergence of new teaching requirements such as shift system and "layered teaching" not only changes the teaching methods on campus, but also brings higher requirements for all aspects of campus management and service. Only through the integration of modern information technology and every link of school teaching, teaching research and management, can we gather complex and changeable information, make unified decisions, change the traditional teaching mode and greatly improve the utilization efficiency of educational resources [2].

2 Necessity of the project

Smart campus construction is a basic, long-term and complex system project of Futian District school. It is an overall and strategic work and an important part of the sustainable development of schools in the district. Its internal construction level is an important symbol of the overall school running level [3], school image and status of the school. Shaping and reconstructing campus intelligent culture must be based on local characteristics [4]. Through the education management system, we will bring

teachers a simple and practical information access port of education cloud platform, so as to truly implement the construction of education cloud platform.

The construction of smart campus application system is to build various campus application support platforms and information service systems by using the network infrastructure of campus networks in the area, and establish a campus application system of virtual campus to realize digital learning and digital management. Under the information service-oriented architecture, the integration of process and content is realized on the basis of computing resource integration [5], information integration and application integration. Through task driven and process scheduling control, it can effectively coordinate the internal personnel and resource allocation of each school in the area. It can effectively improve the teaching, scientific research, management, living standards and operation efficiency. In terms of long-term application and service, establish a perfect information management and operation mechanism to comprehensively improve the informatization level of schools in the region.

In order to better solve many problems and challenges, the education industry solutions are demand-oriented and service-oriented to build the overall architecture system of smart campus. Through information service, resources, data, information and application processes are integrated in a service-based manner to make them interrelated, data sharing and accommodation, and effectively coordinate personnel and resources through organization and business process reengineering, so as to improve the overall efficiency of teaching, scientific research, management, office and learning. So as to realize the close combination of it and business and meet personalized needs [6]. At the same time, its rapid response ability can flexibly respond to various demand changes and support educational reform and innovation.

3 Unified identity authentication platform

3.1 Overview of unified identity authentication platform

Based on LDAP technology, Futian District unified identity authentication platform realizes the unified user identity authentication and authority control system in the campus network, effectively organizes and manages user identity information and system control information by using directory service, provides efficient and secure directory access, and provides unified identity authentication and authority control support for all application systems. It supports RADIUS protocol and can meet the authentication requirements of VPN, network access authentication and other network devices.

3.2 Structure of unified identity authentication platform

Authorization management is a key application. This module can record the permission change process made by all users in the log, and provide the corresponding query function as the basis for future audit. Identity authentication service is an important part of user identity authentication system and a bridge between the system and other application systems. It provides a consistent security

program interface for the application system, so as to realize unified user identity authentication.

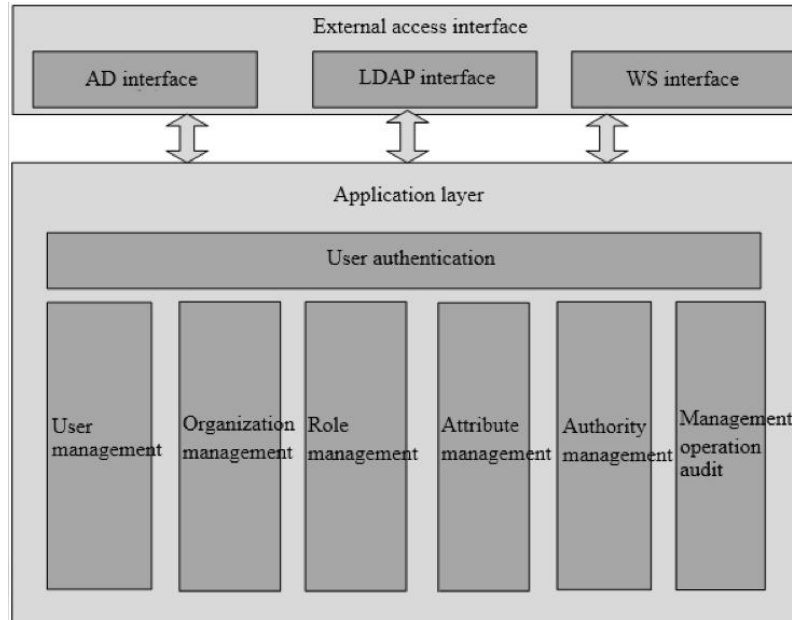


Fig. 1. Structure of unified identity authentication platform

The user management of schools in Futian district is centralized on the unified identity authentication platform. The application system no longer needs to manage user information. The user information required by the application system is completely from the unified identity platform in Futian District. In principle, the user basic information data in the unified authentication user database is required to be relatively complete, The user basic information data of each application system is a subset of the system user database. The identity authentication of each application system is centralized on the unified identity authentication platform of Futian District, and the application system does not need to verify the user's identity. The function authority control of each application system is uniformly realized by the unified identity authentication platform. The application system no longer needs to manage the user's function authority, but uses the authority management tool provided by the unified identity authentication platform for unified management. What the application system needs to manage is the user's data authority.

In the authority management system, the hierarchical authorization mode is adopted, that is, the management authority of an application system is granted to the application system administrator by the Futian District unified identity authentication platform, and the administrator of the application system manages and sets the use authority of all users of the system. The ownership limit data is centrally stored by the unified identity authentication platform.

4 Platform application function

It provides a comprehensive content management function, which can collect, edit and manage the content of various data types and formats scattered internally for users to share. The system provides manual collection, online submission and application program interface output for information collection, and completes the editing, proofreading and review of information according to the defined data maintenance process. In the whole workflow of data collection, editing, proofreading and audit, the system strictly controls the security, and establishes a perfect audit mechanism and tamper proof mechanism.

Through unified monitoring and management, the system operation and operation of the portal platform can be monitored. Including: detailed operation monitoring of permission allocation, detailed operation monitoring of user management, detailed information monitoring of information click, etc. Monitoring management not only records the operator's account, IP, operation time and other information, but also provides query and statistics pages for administrators to monitor and audit.

Provides a panel template based on XML / XSL technology, which defines different window shells, styles, layouts, etc. The system presets templates of various styles and layouts, and can be modified according to the requirements of each school. Users can choose different published templates according to their usage habits to quickly form a neat and beautiful personalized interface.

The portal provides a public component for voting. Each department can create and publish its own voting. It supports multiple voting types such as single choice, multiple choice, question and answer, etc. It can be set to real name voting and anonymous voting. It can also prohibit repeated voting according to IP to effectively prevent repeated voting cheating and make voting more fair and transparent.

The tag provides the location where the user records the reading information, quickly find the location of the last browsing in the next browsing, and save it on the network. The required information can be obtained on different machines.

5 Project innovation

Web based presentation capability. The user's access interface adopts Web mode. As long as the user's client has IE browser, it can access all applications and data in the portal, including management and customization of user interface.

Single sign on. Realize single sign on access to various types of application systems. Single sign on supports user name / password mode by default, and provides the login mode of digital certificate. Provide flexible and extensible authentication interface and support standard identity authentication technologies such as LDAP and database.

Share knowledge within schools within Futian District. It makes it easier for faculty and students to publish content on the portal site. Teachers can integrate their personal portal into the portal site of the teaching and research group, which enables them to share knowledge with teachers of other grades in other schools. Teachers can

publish documents and best practices to the public view of their personal site for use and reference by other teachers and students in various schools.

Application integration. It has portal integration function, provides unified and standardized interfaces, integrates various services and applications, realizes seamless access and integration across data, applications and platforms, and provides fast, flexible and personalized comprehensive information services for all kinds of users.

Document management. Using the document management function provided by the portal, complete the process functions such as document generation, management, release and approval, and realize the comprehensive management of documents on the campus network. The unstructured storage mechanism is used to save documents, and the classification and indexing mechanism are used to improve the performance of access.

Search engine. Establish campus search engines in Futian District to provide users from schools with a tool to search document content and document attributes according to the keywords entered by users. And the update of the search results of the keyword can be subscribed by user-defined email notification or RSS.

Realize the permission control of content. The information in the portal can be given permissions to browse, publish and modify according to the user's role. Various permissions of information can be managed in a modular way. The use permissions of different modules on the same page can be flexibly defined. For example, for a document, you can limit which schools can access, who can access, and who can't. You can also implement more detailed permission control.

Personalized customization. Provide personalized content customization function and interface form, provide directly usable view templates suitable for school, department and role functions, and customize by dragging, pulling and dragging through the web-based management interface. Allow users to create their own personal information internal site, customize the content of the site and publish their own shared information. Other users can enter the personal site from various channels and view the content.

Rapid deployment and flexible expansion capability. The system shall provide ready to use portal applications. By providing flexible deployment options, it can support distributed architecture and the best portal features: it can support servers, database servers, search and retrieval functions combined with distributed work servers and multiple web front ends, so that users can expand appropriately according to capacity needs.

6 Conclusion

In order to complete the construction of smart campus with high quality and promote the modernization and informatization of education in our university, this construction plan is formulated in combination with the actual situation of the University. The plan adheres to the construction principle of "unified planning, paying equal attention to both software and hardware, highlighting application, step-by-step implementation and point to area", takes the overall development plan of the school and modern

educational ideas and theories as the guidance, and focuses on the construction of intelligent application service system, so as to continuously improve the application service level of smart campus in the fields of environmental construction, teaching and management Gradually build our school into a leading smart school among similar schools in the region step by step

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