

# Research on the Management Application of Smart Campus Card

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**Abstract:** The construction of digital intelligent campus has been paid more and more attention. The application of campus card can not only bring convenience to teachers' teaching and students' learning, but also simplify complex things, reflecting the important practical value of campus card.

**Keywords:** Wisdom; Campus card; Management application; Research

## 1. Introduction

At present, the degree of social informatization is getting higher and higher. In the field of higher education in China, informationization has made rapid development, and has gradually entered a mature period, and the level of application of informationization has steadily increased. In colleges and universities, education, teaching, student management and other businesses rely more and more on information technology, which requires comprehensive information technology to provide protection. Digital information acquisition is a basic project, which needs to be realized by campus card. Therefore, campus card is an important part of digital campus. Campus card has become an important tool to strengthen basic management in Colleges and universities. It relies on campus network and is widely used in library, attendance, access control, computer room, consumption and other fields. By using the campus card system, the school can simplify the management procedure, strengthen the management and improve the service level. Campus card provides guarantee for students' study and life, and data support for school management and decision-making.

In the current classroom management in Colleges and universities, most of the information is released through bulletin boards, short messages and teacher's notification to the monitor. Clubs occupy classrooms by blackboard indicating when there will be a meeting. Teachers take attendance statistics by calling names in class. In the era of big data on the Internet, there are some problems such as inaccurate sending and positioning of information, opaque and asymmetric information, inefficient communication and so on. Therefore, it is necessary and feasible to develop an intelligent classroom management system based on campus one-card system. This project aims at realizing the electronic, networked and intelligent management of campus classroom through this system, and improving the efficiency of classroom management.

## 2. Campus Card System Framework

The overall design of the system uses the campus network to realize network communication, and establishes several local area networks to connect with the Internet, and the campus network to connect various subsystems. The terminal connects each system, and each subsystem can connect several card readers by using middleware. The data information read by the card reader is transmitted to the management and data processing server. Middleware and general interface can realize the connection between RFID hardware equipment and campus application program. The design and implementation of the overall scheme should meet the following requirements: reading and writing data information is mainly accomplished by middleware, then filtering, checking and analysis are carried out, and the data information is stored in the data processor. After data storage, it becomes the complete data that can be extracted at any time.

Consumption module. This module is mainly based on the campus consumption, mainly including campus canteen, supermarket, and other consumer behavior design, to achieve convenient and fast one-card consumption services. The main function of the information management system is to realize the basic operation functions of the campus card, such as registration, cancellation, recharge, transaction and so on. It also includes the functions of the loss management of the campus card, repairing and de-hanging.

Campus attendance management module. Campus attendance management can realize attendance and signature of students, teachers and staff. The cardholder's identity is identified and authenticated by the attendance machine, and then the statistical tables are analyzed according to the attendance results of the cardholder by the attendance machine, and the statistical tables can be printed out.

Access control management module. The access control management module is to confirm the identity of the personnel entering the campus. If it is a student, it can enter the library, student dormitory, experimental training room and other places smoothly. The main modules of

access control management are: students, through their own campus card to open the door, enter the dormitory, enter the library and other special places; administrators, use the authority of the card to open the access control, so that students can enter and leave freely; dormitories and librarians, etc. through regular setting or manual operation to close the door; access control alarm system, such as access control alarm system to monitor. If the card is unrecognized, the entrance guard alarm system will issue an alarm sound and notify the administrator directly.

Computer room management module. This module realizes the management of student information confirmation, computer time and computer cost, and improves the efficiency of computer room managers. The computer management module includes three identities: computer room manager and operator.

Personnel and students. Three identities set their rights respectively: computer room managers can add basic information and data such as users, delete users, on-duty teacher management, students on-line, settlement, etc. Operators can register students, recharge accounts, on-duty teacher work records; students can modify the login password, check on-line records, check on-line status, balance query. In addition, there are books management module, student status module, performance module, management module, etc.

### **3. The Management and Application of Campus Card in Classroom Learning**

If the student user only studies on his own, after login to the main page, he can inquire and predict the classroom according to the time and classroom. First click on the search in the lower right corner, and then select the time from the calendar for the search. The red color in the search result indicates busy. Click on the spare classroom that you can reserve, and pop up the time and classroom that you can reserve. If it is correct, confirm it. Student users need to use the classroom in a specified period of time, and swipe a card when entering or leaving the classroom. If the user enters the empty classroom, swipe the card to turn on the power supply and light. The last one who left turned off the power and light when swiping the card. As a teacher's user, the use of one-card can open and close multimedia devices, thus ending the past era of using multimedia keys. If teachers or student users need to occupy the classroom, they need to send an application to the Educational Administration Department. The Educational Administration Department audits the classroom according to users' needs. After the auditing, the booked classroom can no longer accept the reservation.

#### **3.1. Defects of traditional campus card**

The utilization efficiency is not high. Due to the limited financial resources of the school itself, most universities

choose third-party service institutions to build, which are subject to technological and financial constraints. As a result, once such cooperative institutions have operational problems in financial or technological level, it will affect the normal use of campus card system, which undoubtedly restricts the operation of the system to a certain extent. In addition, the use of campus cards is also limited, usually only used in the campus, when students leave school, it will lose its role, lack of continuity of use, waste resources. Secondly, it causes confusion in management. In order to meet the needs of the application of one-card system, most schools have set up special institutions to manage it. Although this way is conducive to strengthening management, there are many conflicts with the existing management mode in the actual work process, which also brings a lot of challenges to the management of campus card. How to realize the centralized management of one-card system and effectively avoid inter-departmental conflicts is an urgent problem to be solved.

### **4. Development and Application Management of Campus Card**

First, to form a unified management platform. In the aspects of teaching management and logistics service, the construction of integrated management platform is conducive to the standardization of information construction, and lays the foundation for the construction of large data collection, analysis and sharing. Second, connect the card system directly with the bank. With my authorization, deposits in bank cards can be transferred to campus cards automatically to meet various consumption needs on campus. At the same time, relying on one-card to collect all kinds of fees and realize digital fees, which can effectively solve the problem of difficult collection and inconvenient management of fees. Third, the establishment of integrated school management information system. Connect the card system with the campus management system to realize the integration of the card data and the related database of the school management information system. With the help of one-card system, the basic data is collected, stored and transmitted, and the background system comprehensively analyses and processes the received data to create big information data, which provides comprehensive information service and basis for decision-making of various departments, avoids decision-making errors caused by incomplete information, and thus comprehensively improves the level of school management.

### **5. Concluding Remarks**

"Digital Intelligent Campus" is bound to become the trend of the development of colleges and universities. Campus card is a good way to promote the formation of digital campus. The establishment and use of campus

card management system bring convenience to students' study and life, improve the efficiency of school management, reduce workload, improve accuracy and work efficiency by using information technology. At the same time, make rational and effective use of the functions of the system to provide a scientific basis for some policy decisions of the school. The formulation of school policies is more scientific to ensure that students can make achievements in school and contribute to society.

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