

# Research and practice of smart campus application system construction in Secondary Vocational Schools

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**Abstract:** with the rapid development of information technology, most secondary vocational schools gradually began to build smart campus on the basis of digital campus, and the use of Internet technology, Internet of things technology and other new technologies to build smart campus can provide more convenience for campus management, teaching activities and learning activities. Therefore, under the background of vocational education reform, secondary vocational schools should integrate the concept of “smart campus” into campus construction, so as to ensure that schools can cultivate applied talents needed by the industry, and then promote the sustainable development of society. Based on this, this paper analyzes the research and practice of the construction of smart campus application system in secondary vocational schools for reference.

**Key words:** secondary vocational school; Smart campus; Application; build

With the rapid development of information technology, smart campus has gradually become an important goal of the construction and development of secondary vocational schools. In order to cultivate high-quality applied talents required by the industry, secondary vocational schools should follow the development trend and attach importance to various information technologies to build smart campus application systems. Through the analysis of various precedents, it is concluded that the application of smart campus system on campus can not only improve the efficiency of school management, but also promote the healthy development of students. It is necessary to Therefore, secondary vocational schools should build smart campus application system to optimize the school management mode, and then improve the educational effect of secondary vocational schools as a whole.

## 1 Connotation of smart campus

Smart campus relies on cloud computing, Internet of things and other information technologies. Its concept is to provide personalized services to teachers and students. At the same time, various application service systems are used to make secondary vocational schools become smart campuses, which can integrate management, school life, scientific research and teaching. Teachers and students' learning, life and work will develop in the direction of intelligence; As the smart campus is constructed by advanced information technology, it can make it more convenient for teachers and students to obtain all kinds of information, and use big data to comprehensively analyze all kinds of data, provide data support for campus management, promote the process of innovation management system in secondary vocational schools, and ultimately ensure the intellectualization of management, education and decision-making. It is necessary to

## 2 Smart campus function module composition

### 2.1 Teaching function module

This functional module is composed of school administration, educational administration and teaching research. The details are as follows: first, in terms of school affairs, in order to meet the needs of school management, most schools can use various smart apps to assist management activities. Through the application of this app, managers or teachers can reasonably arrange daily management work such as class hours and examinations; Secondly, in terms of educational administration, compared with the traditional educational administration system, the smart campus educational administration system can shorten the distance between teachers and students, students and teachers. Therefore, in practical work, teachers can use the smart campus educational administration system to carry out teaching and learning task arrangement, which can not only break through the constraints of time and space and other factors, but also obtain students' learning performance in time. It is necessary to In addition, the system can also provide smooth channels for teachers to exchange teaching experience; Finally, in terms of teaching and research, teaching and research work is a routine and necessary activity to improve the quality of teaching and promote the growth of teachers, while the smart campus system can provide teachers with necessary information and advanced experience support in the process of practical application, so as to ensure that teachers can obtain necessary references in the process of actually carrying out teaching and research work.

### 2.2 Life function

The essence of campus life belongs to micro society, so campus life should be colorful. With the rise of smart campus, the campus living place has become more perfect and convenient. Next, it will be elaborated from the two levels of “culture” and “life”. First of all, at the “cultural” level, secondary vocational schools use the smart campus system to communicate with teachers and students before implementing various teaching plans, and develop appropriate projects and activities through the smart campus with the goal of meeting the

needs of teachers and students. Secondly, “life level”. The most remarkable feature of smart campus is to use a variety of communication technologies to bind students’ personal information and electronic money together, and finally produce an intelligent card. It is necessary toIn addition, the attendance of teachers and students and the housing management personnel can also use the smart campus to verify the real-time information data. At school, students can use a campus smart card in canteens, dormitories, supermarkets, bathrooms, libraries and other places, and then get the corresponding life services. In addition to the above functions, smart campus can also expand some new functions, such as parking space use, mastering students’ daily needs, parents’ communication, etc.

### **3 “Internet +” smart campus basic ability component**

#### **3.1 Wisdom Teaching**

Smart teaching is an important part of smart campus, and it is also the focus of smart campus achievements. The use of smart teaching in secondary vocational schools can change the traditional teaching mode and mode, promote teachers and students to use smart campus to realize online communication, and also develop various forms of teaching activities, such as online course selection, online learning, online testing and online question answering, which can significantly improve the teaching efficiency. It is necessary toIn addition, it can also rely on the smart campus to build a smart classroom, track students’ learning behavior in an all-round way, and recommend learning resources according to their browsing, learning situation and personalized needs, which will help to enhance students’ learning effect.

#### **3.2 Smart office**

Smart office mainly refers to the application of information technology to realize automatic tracking and processing, which does not need too many people to intervene to some extent. For example, the application of automated filing system in archives management can not only change the traditional mode of archives management, but also improve the stability and systematicness of archives management. In the office management of secondary vocational schools, schools should pay attention to the development of their own education management system, such as the application of OA management system. At the same time, to ensure the safety and stability of the management system, financial management should increase capital investment, and earnestly urge the stable promotion of the intelligent management system. It is necessary to

### **4 Key points of “Internet +” smart campus platform construction**

#### **4.1 Shared data center platform**

The shared data center is a unified teacher-student service and information resource management platform. It can handle all kinds of information data in a unified way. At the same time, on this platform, it can not only exchange information, but also make information sharing intelligent. Therefore, smart campus is an important basis for realizing data sharing in smart campus and providing deep-seated data mining and data analysis. Therefore, secondary vocational schools need to build an information sharing platform based on the public data center, and build a campus data center platform on this basis, which is convenient for schools to exchange and share different types of information and data, and also can ensure the consistency and accuracy of various materials. Therefore, in order to effectively apply the smart campus system, we need to build a unified database platform to ensure that the data in the database is updated in time. It is necessary to

#### **4.2 Unified identity authentication platform**

Secondary vocational schools use the smart campus system to establish a unified identity authentication platform, which is convenient for the unified management and authority control of students. Therefore, in the construction of smart campus, the most critical link is authentication. By applying unified authentication in various management systems, the security of smart campus system can be improved. Therefore, when building smart campus application system in secondary vocational schools, a unified centralized authentication technical standard should be built to provide a unified user management interface, which is convenient for the school to uniformly manage user qualifications and truly achieve centralized authentication. In addition, the system can provide unified authentication and authorization to all users. Users can use a unified portal site for single sign on, so as to avoid repeated investment on the whole. To this end, the school can start from the following points: first, build a unified and perfect user identity data center to provide necessary support for identity information management and maximize the authenticity and confidentiality of user information. It is necessary toSecondly, provide a unified identity authentication system and build a scientific and systematic identity trust relationship.

#### **4.3 Air smart campus platform**

The air smart campus can organically integrate various information services and information systems, and use 5g network, Wi Fi communication network and other technologies to provide wireless intelligent campus services to teachers and students. Teachers and students will not be restricted by time and space and other factors. Through mobile phones and other mobile devices, they can view the

required information and data anytime and anywhere, timely grasp the situation of secondary vocational schools, handle the work well, and do a good job in management, teaching, learning and other activities, so as to achieve the goals of instant messaging, communication and interaction. In addition, the air smart campus platform can provide new service channels for students, teachers and parents. Therefore, when building a smart campus platform based on the Internet +, we should handle the key point of the air smart campus platform well, so as to promote the healthy development of students. It is necessary to

## **5 Application strategy of smart campus platform in Secondary Vocational Schools**

### **5.1 Build professional databases and teams**

Nowadays, the construction of smart campus in secondary vocational schools cannot be separated from the support of database, which can lay a solid foundation for the development of smart campus construction. In order to promote the construction process of smart campus, we can start from the following points: first, based on big data, we should efficiently integrate the data needed for the construction of smart campus, so as to optimize the structure of the school. For example, secondary vocational schools can use hive Hadoop cluster to explore high-value data for management to make decisions. Secondly, we should actively build platforms for resource management, management services, and online teaching to promote the realization of multi-level, personalized, intelligent, and comprehensive smart campus. It is necessary to In addition, when building a smart campus management platform, the school needs to comprehensively analyze the experience between teachers and students, so as to improve the effect of smart campus construction.

### **5.2 Set up intelligent teaching and intelligent supervision system**

Since the construction of smart campus in our university started relatively late and the construction process was not fast enough, in order to accelerate the informatization construction process of the “double excellence” project in Liaoning Province, in addition to making good use of the policies and guidelines of the higher authorities, the university should increase the investment in material, financial and human resources. The details are as follows: first of all, we should use teaching resources to build an intelligent teaching system, so that teachers can use the system to make courseware, build smart classroom, review homework and other activities, while students can use it to carry out online learning, online testing, online teacher-student interaction and so on, so as to effectively enhance students’ autonomous learning ability and build a harmonious relationship between teachers and students. It is necessary to Secondly, secondary vocational schools should build an intelligent supervision system. For example, use CRP system to log in to the smart campus system anytime and anywhere, query personal information, schedule arrangement, course scores, practical activities, internships and training, and fully realize the effective management and use of campus resources through intelligent supervision.

### **5.3 Implement SOA construction scheme and apply CIO responsibility system**

Smart campus has various operating systems, application software, system software and application infrastructure. How to respond quickly to different services is an urgent problem in the current smart campus construction. With the loose coupling advantage of service-oriented architecture (SOA), it updates or adds relevant services in a modular form to respond quickly to various business changes, so as to ensure that business needs are effectively met. For example, the “smart Beihang” can be applied to the construction of smart campus, which will ultimately provide reference for the construction of smart campus in secondary vocational schools, and the top-level design can be applied to create an information-based and intelligent new environment convenient for learning, teaching, work and life. At the same time, in order to meet the information transmission and integration between schools. It is necessary to To this end, secondary vocational schools can implement the CIO (Chief Information Officer) responsibility system, establish the corresponding operation and maintenance management architecture, break the conventional institutional barriers that are not conducive to the development of informatization, and further strengthen the overall planning of informatization construction and application, so as to create a new smart platform oriented by “serving the construction of campus culture and students’ learning and life”, And then effectively improve the management level of secondary vocational schools.

### **5.4 Timely optimize the smart campus culture system**

At present, the biggest problem faced by secondary vocational schools in the process of building smart campus is that the teaching staff is not strong enough, and the teaching staff has the problem of single structure, which either pays attention to the theoretical basis or pays attention to technology, and fails to effectively integrate educational theory and professional technology. Therefore, secondary vocational schools need to build high-quality teaching staff to provide talent support for the construction of smart campus, so as to ensure the orderly construction of smart campus. It is necessary to In addition, we should improve the talent training mechanism, strengthen information education and publicity, introduce high-quality IT talents, strengthen the construction of smart campus culture system, show the characteristics of smart campus culture, unify the database system, and make full use of virtual learning communities, smart learning spaces, bloggers, QQ groups and wechat groups to provide a convenient and fast communication platform for teachers, students and parents, Promote the interaction and exchange between the two sides, so as to make the construction of smart campus in Colleges and universities

highlight the humanistic feelings. It is necessary to

### Summary:

In a word, the application of smart campus system in secondary vocational schools can not only enable teachers to carry out smart teaching and research, but also enable students to carry out smart learning and life, providing a platform for schools to carry out smart management. Secondary vocational schools should consider how to build smart campus from an overall perspective, integrate smart teaching, smart learning, smart office and other modules, and effectively improve the level of school management. It is necessary to In this regard, secondary vocational schools can start from the construction of professional databases and teams, the establishment of intelligent teaching and intelligent supervision system, the implementation of SOA construction scheme and the application of CIO responsibility system, and the timely optimization of smart campus culture system, so as to promote the healthy development of secondary vocational schools.

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