

# Smart education cloud resource platform

Dongxiao Wang<sup>1</sup>

<sup>1</sup>Shenzhen Futian District Foreign Language School  
419304514@qq.com

**Abstract.** Smart education is an important symbol of educational informatization. Accelerating the construction of smart education is conducive to the popularization and sharing of high-quality resources and the balance and fairness of education; It is helpful to improve the level of teachers' application of information technology and promote quality education; It is conducive to students' autonomous learning and active learning by means of information technology; It is conducive to the close relationship between home and school and form the joint force of home and school education.

**Keywords:** Education, Wireless environment, Software .

## 1 Introduce

With the accelerating process of China's modernization, the basic, overall, leading, strategic position and role of education in economic and social development are becoming increasingly prominent. Earnestly implement the working policy of "giving priority to development, educating people, reform and innovation, promoting fairness and improving quality", closely combine the needs of economic and social development and the reality of education in Hebei, further clarify the development direction, improve the development level, innovate the system and mechanism, improve the security system, and promote the scientific development of education at a new historical starting point[1]. Adhere to the public welfare and inclusive nature of education, and ensure that citizens enjoy the opportunity to receive good education according to law. We will build a basic public education service system covering urban and rural areas, gradually realize the equalization of basic public education services, narrow the regional gap and the gap between urban and rural areas, and further improve the level of education equity[2]. By 2020, we will initially build a complete and rich library of curriculum resources and learning resources of various educational disciplines at all levels. Innovate the network teaching mode and carry out high-level distance education[3]. Focus on network teaching resources, strengthen the application of information technology, improve teachers' application level of information technology, update teaching ideas, improve teaching methods and enhance teaching effect; Encourage students to use information technology to study actively and independently, and improve their ability to analyze and solve problems by using information technology[4]. Relying on educational information resources, create a provincial education management platform and improve the modernization

level of education management[5]. Take the opportunity of school standardization construction, strengthen the allocation of teaching instruments and equipment and books and materials in primary and secondary schools, accelerate the construction of general technology laboratory, inquiry laboratory, comprehensive practice room, sports health and art facilities, and promote the standardization of teaching equipment in basic education.

## **2 Education support service operation center**

### **2.1 System overview**

The education support service operation center is the core place of education information management. The education bureau provides a site with an area of about 70 square meters. For the school's surveillance video, all-in-one card, information release and other systems, the information of all parties shall be summarized in the command center as the auxiliary decision-making information of leadership and command[6].

There are many kinds of information, such as video, audio, text, voice and so on. For the summary of these information, the command center first needs a comprehensive information display environment. Looking at the application cases of various industries, the image display system is the preferred scheme.

The image display system can display the real-time video signal from the scene through the large screen, and the commander can grasp the development of the situation at any time[7].

The large screen system can also display the campus integrated management service system, campus 720 panoramic system, security monitoring, operation and maintenance management system, etc.

### **2.2 System design scheme**

#### (1) 3 \* 3 large screen rear projection wall

The display system is one of the important components of the operation center and the clairvoyant to deal with problems. It is used to control and display the image monitoring signal of each school and various video signals, VGA (computer image signal), TV signals, etc. in this system design, we design 9 60 Inch DLP splicing units.

(2) DLP multi screen splicing processor supports input signal access modes of various image signals: network input, RGB input and DVI-D input..

### **2.3 System function**

#### (1) Multifunctional large screen control software

The management software divides the large screen into different areas to achieve a neat effect, and sets layouts to fix or limit the position of the window to prevent window overlap.

To display specific information, the application will be automatically started or stopped, and the most important operation procedures will be automated by using the preset layout arrangement window, such as switching to a specific display layout in case of emergency. Monitor, arrange and manage resources in the control center, including large display screens and other shared equipment.

Provide a simple and easy-to-use Chinese (optional complex and simplified Chinese characters) operation interface to assign specific operation and access rights to different operators.

#### (2) Full screen display, high resolution application

Driven by the multi screen processing system, the whole wall forms an ultra-high resolution unified display platform, which can not only display the large and complete network graphics GIS, GPS and 720 panorama of ultra-high resolution, but also display slogans, welcome words or high-resolution demonstration pictures conveniently and quickly when superior leaders visit and study.

#### (3) Functional partition display mode

The whole display system can be divided into corresponding display areas according to the division of labor of the platform system, and each zone can be controlled independently. The images of each system can only be arbitrarily scaled and roaming displayed in the display partition of the system, so as to ensure the independence of work between each system. The system administrator has the control authority of the whole wall and all users. When necessary, the system administrator can carry out cross area display or full screen display, and all functions can be realized conveniently and quickly.

#### (4) Computer signal display

Independent computer signals can be collected and processed by multi screen processor and displayed on the splicing wall in the form of window

Quick display on the; And the display window can be arbitrarily zoomed, moved across the screen, superimposed or displayed in full screen.

#### (5) Mixed display of various signals

Computer signals can be displayed on the splicing wall in their own ways at the same time without mutual interference. Or the splicing wall can be displayed and controlled in different areas according to the needs of the application system.

The user can store the display and position of various signals as modes according to needs, and directly switch when the user needs, so as to immediately define the display window according to the mode, or then define the plan, and automatically call or switch various display modes according to needs, so as to realize the automatic management of the splicing wall system.

Note: the above several display mode diagrams are only used to illustrate different display modes, not the actual display effect. In practical use, the corresponding display mode can be designed according to the needs of users..

### **3 System function**

The core support platform of the system functions, which completely provides a full range of functions such as telephone exchange PBX, voice gateway VoIP, customer relationship management (incoming call pop-up screen) CRM, automatic traffic distribution ACD, automatic voice response IVR, statistical report CDR, telephone recording, telephone queuing, teleconference, voice mailbox and so on. No need to integrate any other functional components to meet the needs of users

#### **3.1 Telephone switching module**

- (1) Extension online, busy indication, substitute connection, manual transfer and call hold;
- (2) Transfer to other extensions or designated seats when busy or no one answers;
- (3) Transfer to external mobile phone or phone number when busy or no one answers;
- (4) Transfer to voicemail when busy or no one answers;
- (5) Unconditional transfer of extension (specify extension or telephone number);
- (6) Extension accompanying function (extension one pass);
- (7) Extension outgoing authority control;
- (8) VR voice navigation menu setting;
- (9) Set different voice menus by time or holidays.

#### **3.2 Extended telephone switching module**

- (1) Telephone recording, which can be played and downloaded;
- (2) Telephone queuing function, playing waiting music and providing queue location announcement;
- (3) Set the caller number pool (black and white list);
- (4) Intelligently transfer different seats according to the incoming area code;
- (5) Intelligently transfer different seats according to the call number;
- (6) Mouse click dialing;
- (7) Extension monitoring, forced kicking, forced plugging, forced busy, forced idle and forced logoff (used by administrators);
- (8) Queue and extension status monitoring;
- (9) Automatic work report number before connection;
- (10) Call quality inspection and invite customers to score;
- (11) Teleconference and support mobile and telephone participation..

#### **3.3 Customer relationship management module**

- (1) Incoming call pop-up screen (incoming call pop-up customer information and previous service records);
- (2) Synchronous transfer of data (when the agent needs to transfer calls, the pop-up page will be transferred to other agents automatically);

- (3) It can be configured by itself to pop up the specified page;
- (4) Provide standard pop-up screen development interface;
- (5) Standard B / s agent working interface;
- (6) Customer data management (create, delete, query);
- (7) Service record management (addition and query);.

### **3.4 Report management module**

- (1) Real time query of call record and recording;
- (2) Data analysis and statistical statements;
- (3) Provide standard report data interface;
- (4) Batch export of call recording..

### **3.5 Other functional modules**

- (1) Call recording;
- (2) Announcement management;
- (3) Schedule management;
- (4) Work log;
- (5) FAQ knowledge base management;
- (6) Standard development application interface..

## **4 Security monitoring, operation and maintenance management platform**

From a domestic perspective, the project conforms to the national education development plan and the national economic development plan; From an international perspective, it is the common needs of national development and social research. Through the analysis of the previous chapters, the preliminary investigation of the project, the development of economic environment, the needs of education industry and construction conditions have been mature. In conclusion, the implementation of this method is necessary and feasible.

### **4.1 Thinking of combining compliance construction with business risk analysis**

Through the actual investigation of the current situation of the information system, the gap analysis method is used to compare and analyze the compliance with the control items of the basic requirements for classified protection of information systems in information security technology (GB / t22239-2008) (hereinafter referred to as "basic requirements"), so as to master the actual gap between the current situation of system protection and the baseline requirements. By using the method of information security risk assessment, this paper systematically evaluates and analyzes the information system in terms of assets, vulnerability, threats and business risks, and finds out the security risk problems based on business. Fully combine and refine the gap analysis

results and risk assessment results to form a comprehensive construction demand that can meet the construction requirements of hierarchical protection and fully ensure business security.

#### **4.2 Design idea of security system framework**

The design scheme will comply with the technical requirements for security design of information security technology information system level protection(GB / t25070-2010) (hereinafter referred to as "technical requirements for security design"), combined with the information assurance technology framework (IATF), implement the basic requirements and construction requirements, build a multi defense system framework for the information system in line with the strategic idea of defense in depth from the macro level, and fully ensure the compliance, integrity and Advanced and high availability.

#### **4.3 Design idea of security policy based on Application**

Taking the security assurance system framework as the main body, deeply carry out process analysis and strategy combing based on system application, and effectively implement the security control at each level of the information system into the protection at each level of the security assurance system framework through the security modeling of the information system, so as to realize the high flexibility, high compliance and high adaptability of the construction of the security assurance system

#### **4.4 Idea of unified planning**

In the process of scheme design, a complete and unified security system plan will be formulated from the macro strategic level based on the long-term development plan of informatization. And fully consider the practical security needs of each stage of information construction, and formulate a phased security plan in line with the development needs of information system. Ensure the rationality and sustainability of information security construction.

## **5 Conclusion**

The construction of education cloud can rely on advanced information technology to provide efficient, clean and fair education administration and education public service mode, and provide immediate, accurate, high-quality, standardized and transparent information disclosure and education services to the society in an all-round way, surpassing the limitations of time, space and school segmentation. Students, parents, teachers and education managers can obtain any desired education services through the network at any time and anywhere. Students can learn more conveniently, parents can master their children's learning situation in real time, teachers can prepare lessons and obtain teaching resources conveniently, and education managers can effectively obtain the education and teaching situation of each school, It has greatly improved the

effect of educational services, improved the public's satisfaction with education, and better realized the goal of "running people's satisfaction education".

## References

1. Rada, Roy. Levels of reuse in educational information systems. *Campus-Wide Information Systems*, 2013, 18(3):103-109.
2. Cheng J , Huang J , Liu X , et al. On the Application of Educational Information Resource in Jiangxi Province Based on Cloud Computing. Ninth International Symposium on Distributed Computing & Applications to Business. IEEE Computer Society, 2010.
3. Chang B , Ham D H , Moon D S , et al. Educational Information Search Service Using Ontology. *Advanced Learning Technologies*, 2007. ICALT 2007. Seventh IEEE International Conference on. IEEE, 2007.
4. Y Wang. Research on the construction of new normal of educational informatization based on teaching and research innovation. *Wireless Internet Technology*, 2019.
5. Qian D M , Wang X J , Luo A N . Risk Evolution and Simulation of Educational Informatization Project based on System Dynamics. *Modern Educational Technology*, 2019.
6. Yin Z . The Puzzling Question of Education Informatization and the Ideal Model of National Educational Informatization. *Big Data Time*, 2019.
7. Bai H . On Rebuilding and Transition of Open Education in the Context of Educational Informatization. *The Theory and Practice of Innovation and Entrepreneurship*, 2019.