The Architecture and Realization of PE Teaching System under Digital Informatization

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Abstract

In recent years, data technology, multimedia technology and information technology have been widely applied in the field of education, and the field of modern education has gradually begun to develop towards flipped classroom, smart campus and other directions. Sports have also suffered in part. In this context, PE machine learning system should realize the modernization of digital information and step into the information age of education. This paper mainly describes the construction and implementation of physical education teaching system in digital information age. This paper based on the current information related development process, which is not only helpful to break through the bottleneck of traditional PE teaching in colleges and universities, the innovation of PE teaching methods and technology in colleges and universities, aiming to introduce the means of education information, promote the innovation of PE teaching reform in colleges and universities.

Keywords: Intelligent, digital information, physical education system

1 INTRODUCTION

In the era of information education, social economy comprehensively promoted the digital reform, under the big background of the current, the innovation and reform of physical education informatization direction is relatively obvious, the machine reform and update of love learning patterns are more obvious, and making flip class and for class teaching form gradually become a common way of teaching [1]. With the development of cloud computing, mobile technology, big data, artificial intelligence and other new technologies, online teaching has gradually entered a new era, and more attention is paid to personalized and intelligent services [2]. In college physical education, because of its specialty, it obviously lags behind other subjects in the face of information, so it needs to strengthen and coordinate its development [3].

2 COLLEGE PE TEACHING SYSTEM DESIGN BASED ON INFORMATION AGE

The first is the framework design of the teaching system. The teaching system mainly B/S three-layer structure and browser as the main body, to achieve the use of user interface, through the Server database to access the data, the advantage of the framework is to be able to centralized transaction processing, to a large extent can simplify the client configuration and hardware requirements [4] [5]. The system mainly consists of six layers, including operating system, database system, database interface, Web server, application service layer, network interaction layer and client.
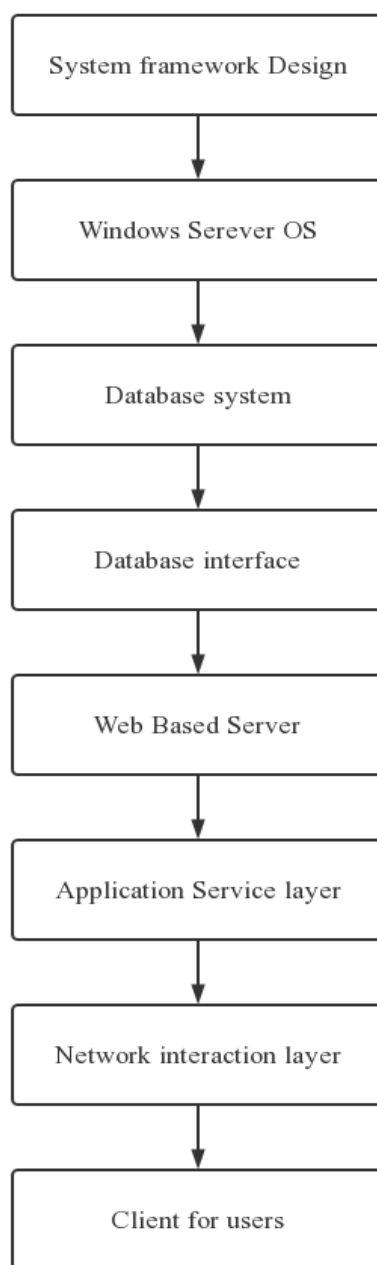
Figure 1: System function module

Second is the network course management module. Network course is different from traditional course, it belongs to distance education teaching form, learning resources and information update speed is very fast, and has a certain degree of immediacy and interaction. First, the online course is customized by teachers, and the progress of students' practical courses is carried out, and the theoretical knowledge is appropriately increased, so as to realize the optimized management of online courses [6]. Second, use Flash animation and hypertext form to construct online course content. Third, knowledge points can jump to each other with hyperlink as the carrier, and web page is the auxiliary carrier of physical education

teaching system [7]. The teaching communication between teachers and students is more and more abundant, and the real-time teaching interaction is realized based on the message left by the teacher system and the student system.

$$h(t) = \begin{cases} \dfrac{1 \times \delta_{1(t) + S(X)}}{\tau} + \Delta x(t), \text{if } i > 1 \\ 0 \end{cases} \qquad (1)$$

Finally, database design. As a key part of physical education system, database includes data access component and SQLServer [8]. Among them, database access is implemented on the carrier of MTS, and the object of data processing is ADONTET, so as to store,

maintain and manage data information [9]. The system data should also meet the information management standards to ensure the real-time, accurate and realistic performance of the data information, so as to help the subsequent operation, but also to relieve the pressure of the system to a certain extent, so as to ensure the security and reliability of the data. In this way, it can also effectively reduce the workload of server - client transmission [11].

Table1.College PE teaching system design based on information age

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The first is the framework design of the teaching system.	The teaching system mainly B/S three-layer structure and browser as the main body, to achieve the use of user interface, through the Server database to access the data, the advantage of the framework is to be able to centralized transaction processing, to a large extent can simplify the client configuration and hardware requirements.
the network course management module	Network course is different from traditional course, it belongs to distance education teaching form, learning resources and information update speed is very fast, and has a certain degree of immediacy and interaction.
database design	The system data should also meet the information management standards to ensure the real-time, accurate and realistic performance of the data information, so as to help the subsequent operation, but also to relieve the pressure of the system to a certain extent, so as to ensure the security and reliability of the data.

In the design of physical education teaching system, in order to ensure the practicability of the system, we can optimize the data information through diversified ways [12]. First, increase redundancy, that is, information layer redundancy, to ensure the normalization and standardization of data table information, to ensure full and stable performance. Secondly, the identification column is added and the primary key space segment is used to customize the table to ensure the uniqueness of data and improve the efficiency of search [13]. Thirdly, it operates some business fields based on table segmentation and divides them scientifically and reasonably to ensure the overall performance of the system.

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3 PHYSICAL EDUCATION MANAGEMENT SYSTEM

Table2: Physical education management system

Physical education management system	
This system consists of three modules, each module is implemented basically consistent. In the student information management module can realize the student information form professional information table of information table and the professional direction of inquiry, statistics and print, can realize students' basic information, extension information and student information transfer, inwards, conversion, and add, modify and delete functions.	Physical education resource management system can achieve and physical education related files download, upload and maintenance, teachers can use the file upload function will be required to class information to the server, expand the content of teaching.
In addition, with the support of J2EE technology, the structure and framework of the system have been optimized, and the real-time design of the system has been improved to ensure the stable operation of the system platform.	Physical education management system security is the designer to take a variety of security measures to improve the security of the system, the main application of firewall technology, intrusion detection system and security protocols.

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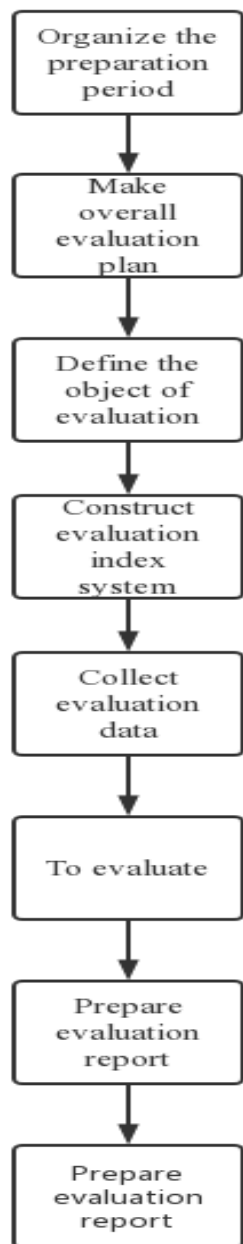
achieve the query of teachers, teaching content and curriculum time.

$Nwst \leq xwst; w \in WsSt \in T$

$Nwst \leq M3Hwst, w \in W, s \in St \in T$

$xwst \geq o, w \in W, s \in S, t \in T$

$Nwst \geq 0, w \in W, \ s \in S, \ t \in T$

$\mu wst \in \{0,1\}, w \in W, \ s \in S, \ t \in T$

$ywstkE\{0,1\}, \ w \in W, \ s \in S, \ t \in T,$

$k \in K\backslash\{kmax\}$

$zwsywstk \leq Zws(t-1) \leq zws1+M(1-ywstk), w \in W, \ s \in S, \ t \in T, k \ EK\backslash\{kmax\}$

$ywstk=1, w \in W, \ s \in S, \ t \in T$

$keK\backslash\{kmax\}$

PE teaching quality and evaluation management system is mainly to achieve the data information query and management, to achieve the evaluation of teaching information and content query, and automatically generate PE teaching quality management of the general table. Physical education management system security is the designer to take a variety of security measures to improve the security of the system, the main application of firewall technology, intrusion detection system and security protocols.

4 CONCLUSION

The background of education informatization can provide brand-new teaching mode and scene for college Physical education. Under this background, we can not only share various physical education resources, but also experience diversified learning scenes. The teaching of PE of universities and colleges at present, need to be reasonably applied to education, information technology innovation education under the background of the informationization teaching situation, so colleges and universities need to go explore the road of innovation, thus effectively promote our country university sports teaching in increasingly perfect information mechanism, the sports teaching under this mechanism for further development.

Figure2.Physical education management system

Physical education resource management system can achieve and physical education related files download, upload and maintenance, teachers can use the file upload function will be required to class information to the server, expand the content of teaching. To improve transmission efficiency, file compression is required to reduce upload time and server pressure. Sub-source maintenance can modify and delete teaching files. And students can also log in to the system, according to the early information of the course to download the corresponding courseware, convenient use of source. Sports teaching operation management system is to meet the requirements of the selection of special courses, to

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