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Multi-Data Center Realization and Operation Efficiency Modeling Analysis of Intelligent Physical Education System

Zhoulin Lai*
Polus International College
Chengdu, 610103, Sichuan, China

Yan Cui
Polus International College
Chengdu, 610103, Sichuan, China

Abstract:Distributed data centers shield the metadata differences of multi-source and heterogeneous remote sensing data, and provide a basis for multi-source and multi-center remote sensing data integration. Implementation in teaching and application in extracurricular sports activities, students' physical health, etc., in order to give full play to the auxiliary role of CAI in physical education, namely user management, online course management, question bank maintenance management, real-time examination management, scoring review management, System management, user health information collection, database design. When students log in to the teaching system to inquire about required materials, they can also communicate and discuss with teachers online, which promotes good communication between students and teachers. In the application process of the system, it can be found that the teaching of this system has relatively strong flexibility and is not constrained by location and time.

Keywords: Multi-Data Center, Operation Efficiency Modeling, Intelligent Physical Education

1. INTRODUCTION

The emergence of computer multimedia technology, the application of network technology, and the arrival of the digital information age have brought profound changes to modern teaching, impacting traditional teaching modes and teaching concepts, and causing changes in teaching methods and methods [1]. It is widely used in various fields of education and teaching. As an important part of school education, school physical education is a huge and systematic project. With the expansion of school scale, more students and more classes, it brings great difficulty to the teaching of physical education teachers. How to use new education ideas and educational ideas as a guide [2].

Today, the new intelligent teaching system makes full use of computer technology, pays attention to the important position of students in teaching, and helps students better understand and master knowledge [3]. Since the current physical education distance teaching system has not yet achieved intelligent and personalized teaching, some teaching systems do not have the function of teaching students in accordance with their aptitude, and appropriate teaching plans cannot be formulated according to the learning situation of individual students [4]. Based on the B/S three-tier framework, with the WWW browser as the carrier, the user interface is realized, the transaction logic is realized on the front end, the main transaction logic is realized on the server end, and the database access is realized through the server end.

Put students at the center of teaching, use computers to change the traditional CAI teaching mode, and facilitate the mastery and understanding of knowledge [5]. This paper mainly studies the design of an intelligent physical education system based on knowledge, hoping to bring some help to relevant personnel [6]. The significance of carrying out the above research is that, first of all, the multi-source remote sensing metadata format conversion based on the unified geographic information standard shields the metadata differences of multi-source and heterogeneous remote sensing data from the distributed data center, and is a multi-source and multi-center metadata [7]. Remote sensing data integration provides a foundation. Users do not need additional research and development work, and only need a few simple settings to successfully access the system, and efficiently complete information collection, communication, consumption and analysis, and do not need to know the underlying technology. Realization [8].

Abstract, hide or isolate the internal functions of storage (sub) systems or storage services to separate the management of storage or data from the management of applications, servers [9], and network resources, so as to achieve independent management of applications and networks. As an important part of school education, school physical education is a huge and systematic project. With the expansion of school scale, more students and more classes, it brings great difficulty to the teaching of physical education teachers. How to use new education ideas and educational ideas as a guide [10].

CAI is a computer-aided method and technology that overcomes the single and one-sided shortcomings of traditional teaching methods and conducts various teaching activities [11]. A good personalised learning environment. Because the subject of physical education is very practical, and students are more active in their thinking in the learning process, they need to communicate with teachers in depth, so it is more suitable to use an intelligent physical education teaching system for teaching [12].

Agent is a service program that has the ability to run independently. Compared with many software entities, Agent has a higher level of intelligence and has the following characteristics. (1) Self-control: Agent can run operations by itself without human operations, and has the ability to control its behavior and internal state [13]. The intelligent physical education teaching system is mainly a teaching method that uses multimedia to achieve teaching. Compared with the traditional teaching mode, this teaching mode can be more targeted for teaching [14]. A fixed teaching time or teaching location is required. In addition, in the existing remote sensing data product production system, the product production

process is mainly organized by experts, the process is fixed and needs to be prepared in advance, and the product production process cannot be organized according to the individual needs of users. Standardized information product flow [15].

2. THE LITERATURE REVIEW

The article published by Quick and Choo in 2014 also reached the same conclusion: "Although the functions of the current remote sensing data processing system have been improved, the scalability problem still exists for the processing of massive remote sensing data, and the volume of remote sensing data is far beyond the processing capabilities of current processors (Quick and Choo, 2014)" .

However, limited by the user's computer ability and remote sensing industry knowledge level, ordinary users often cannot obtain the remote sensing data products they need smoothly (Mamun et al., 2017; Gubbi et al., 2013) .

3. THE PROPOSED METHODOLOGY

3.1 The Intelligent Physical Education Teaching System

CAI physical education can make things change from static to dynamic, from virtual to real, from cumbersome to simple according to students' observations, so that things that are not easy to observe can be clearly presented in front of students. Intuitive picture. Different students have different learning needs, and the Web server can adjust the teaching plan according to specific needs, so as to provide students with appropriate teaching information. By accessing the system, teachers are able to check students' learning and test scores online.

System users mainly include students, teachers, and administrators. In terms of permissions, students only have basic permissions to query teachers and learn in an orderly manner according to the teaching progress, so as to complete the tasks and assessments assigned by teachers. The authority of the teacher is to manage the selection of the question bank and the progress of theoretical teaching. The main design contents of the standard action model library include: sports normative actions, similarities, names and image files. The design of the student database mainly includes personal information, learning objectives and mastery of students. In the design, the student library can be divided into database and record library.

Students generally gradually transition from concrete image thinking to abstract logical thinking. For physical education, the second is to introduce the teaching strategy module, which is a very important part of the entire design. Because there are great differences in the foundation and physique of different students, different teaching strategies need to be adopted, so the system has set the learning strategies in the learning record database. The main method of cultivating students' ability to generalize and think is to form concepts based on appearances The main method of cultivating students' reasoning thinking is to stabilize knowledge and use knowledge.

3.2 The Multiple Data Center Implementation

After the distributed metadata index is constructed, distributed data retrieval can be performed. In addition, in order to improve the efficiency and robustness of distributed data retrieval, optimization of hotspot metadata cache and distributed high-concurrency access control will be carried out. The demand promotes the continuous development of the business. The log system needs to be overall designed according to the business requirements, not only to meet the reliability of the storage of each business, but also to ensure the convenience of the operation and maintenance personnel to use the system. Therefore, at the beginning of system design, it is necessary to consider providing a unified and complete API interface and clear and comprehensive documentation.

Once data is written, it will no longer be moved, and new data will often be written to newly added nodes, resulting in old data always being old nodes, which will lead to problems of unbalanced load and low overall resource utilization. Ceph abandons the traditional way of looking up data in a distributed file system. The essence of multi-user remote sensing data sharing based on cloud storage is to establish virtual mapping to OpenStack-Swift object storage for multiple users. Each virtual map is associated with a user ID, different users are isolated from each other, and the process of storing data does not affect each other. Renaming of remote sensing data files per user. The two interceptors are equivalent to marking each log data. When the log is collected locally, the specific source and generation time of the log can be quickly identified through the analysis of the message header, so that Storm can analyze the calculation process. Aggregation and separation.

On the one hand, the user's ordinary application for storage space is directly and automatically processed and fed back to the user, and the operation information is written into the log; and process. Then it is necessary to continue to recursively query the remote sensing product dependency knowledge base, and at the same time assist the product upper and lower hierarchical relationship knowledge base to verify the rationality. If a user submits an NPP product production order, the lower-level data products can be derived as LAI, PAR and FPAR according to the product dependency knowledge base. At the same time, it will continue to restart as the log collection rules change. Based on the above factors, a general automatic deployment system is written, which can execute Flume installation, agent start, stop and restart commands with one click.

3.3 The Operational Effectiveness Modeling Analysis

It can also create a more comfortable situation and emotional experience, arouse and ensure students' attention and interest in learning, so as to arouse students' enthusiasm for learning and stimulate students' enthusiasm for learning. When the user logs into the sports distance learning system with the student's account, the system will automatically generate an agent in the control interface, and the control interface of the student information file will be automatically generated in the agent system, and it will find the student's information in the student information database through the network.

Students use the test data in the question bank, and effectively play the independent study and test simulation training functions of the question bank management module. They can not only consolidate their learning in peacetime, but also conduct special intensive exercises and simulation tests according to their own needs before the test. The remote sensing cloud prototype system is mainly realized by deploying remote sensing data integration, management, distribution and sharing systems, multi-source remote sensing product production systems, remote sensing cloud storage systems, and user management systems on the virtualized

resource pool built by OpenStack. This section mainly simulates the generation of online application exception logs in the US computer room, and collects and sends the detailed stack information of the exception to the local computer room through the log collection system. Through real-time analysis of the log, it is determined that the abnormal information needs to be alerted and an email notification is sent. , by browsing the content of the email.

4. CONCLUSIONS

The modern distance teaching system applies the agent technology, and adopts the individualized teaching strategy according to a series of characteristics such as students' learning level and difficulties in learning by using intelligence. This paper mainly aims at various shortcomings of current physical education teaching and CAI system, and designs an intelligent physical education teaching system based on the dynamic characteristics of physical education teaching. restrictions, and can meet the needs of students in different situations.

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