



Application Comprehensive Testing Analysis Based on the Construction of Physical Education Evaluation System

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ABSTRACT

Physical education is an important component of school education, which is of great significance for students' physical and mental health and comprehensive development. This article aims to analyze the application of comprehensive testing based on the construction of a physical education evaluation system. Firstly, we will introduce the importance of building a physical education evaluation system and its main components. Next, we will provide a detailed description of the process and steps of application comprehensive testing, including the selection of test samples, the design and use of testing tools, and the data collection and analysis process. Finally, we will conclude and explore potential application prospects and development directions.

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1. Introduction

The cultivation of talent requires the correct guidance of education; the level of education directly determines the quality of talent [1]. With the development of quality education in our country, colleges and universities not only focus on the level of students' cultural classes but also pay more and more attention to art and physical education [2]. The continuous reform of physical education means that our traditional sports evaluation model can't correctly meet the needs of the development of colleges and universities [3]. Coupled with the arrival of the Internet era, the PE teaching evaluation of students should combine with the Internet technology to avoid many complications brought by artificial factors [4].

The proposition of cloud theory provides a good theoretical basis for the construction of a reasonable evaluation system of physical education [5]. PE teaching evaluation is no longer blind, but more targeted and accurate [6]. A person's physical condition directly determines the height of his development; if students don't have good physical fitness, even if the results are excellent,

they are useless. Therefore, it is necessary to carry out physical education, which is also the foundation for improving students' physical quality [7]. It is not difficult to find that there is a large lag in the traditional sports evaluation system, and there is also unreasonable evaluation in the new project, which seriously affects the participation enthusiasm of the students. Using the evaluation method of the cultural class to guide PE teaching can only achieve the opposite effect [8]. The improvement and development of the evaluation system require people to use the computer cloud theory rationally and give students the right guidance so as to make them generate a strong interest in sports rather than forcing them to carry out the necessary physical exercise. Therefore, evaluating humanized physical education will be the future trend [9].

2. State of the Art

The construction of the teaching evaluation system needs the corresponding theoretical systems. In this paper, the system's construction mainly uses the computer cloud theory. The computer has a wealth of database functions, which can make the right evaluation according to the student's physical fitness and preferences rather than forced uniform standards [10]. According to the study, it is found that this physical education evaluation system had already appeared in the United States as early as the 80s of the last century [11]. At that time, because of the pursuit of comprehensive development, the United States developed a relatively reasonable overall evaluation system following the content of physical education, which had a very far-reaching impact on all colleges and universities in the United States, so that the importance degree of sports was continuously improved [12]. China's overall physical education started late. However, after the reform and opening up, China's PE teaching evaluation system has also made considerable progress. This progress is mainly reflected in the fact that a set of relatively common standards is formulated for physical education, thus making the evaluation system no longer blank [13]. After years of continuous complement and optimization, the entire physical education platform has become increasingly clear.

The evaluation research of physical education in China is mainly concentrated in the 21st century. Among them, the research of Fan Xiaoling and others has appeared one after another, and these studies have enriched China's PE teaching evaluation system. In later studies, China's physical education evaluation continues to reform. However, limited by the tradition that makes it difficult to break through, the limitations of evaluation are caused [14]. Therefore, this paper puts forward the application of cloud theory in constructing PE teaching evaluation systems in colleges and universities based on big data.

3. Methodology

To build the corresponding physical education teaching evaluation system, firstly, a certain plan is made for the entire technical route design. Therefore, the mutual evaluation system between students and teachers must be considered first. Students begin to determine their own directions and their PE intention in accordance with their own characters and preferences; of course, this intention should also consider the teacher's professional guidance [15]. After completing the control of the overall intention, students should gain some understanding of the course selected. In the traditional platform, students can only make a simple introduction under the selected courses, while accurate guidance intention can't be provided. This system is based on the cloud theory, which contains a large number of database data, and this data covers the online retrieval and the entire learning methods, which can be transferred to students in a timely to ensure that students have established related intentionality before the PE learning. Given the student's PE teaching intention, the corresponding teaching plan is compiled and formulated. After the teaching program is released, the system has the corresponding self-improvement and evaluation mechanism, which carries out the evaluation according to the provided teaching program. To make this evaluation system more humanized, mentor-related links are added. Then, in the case of the joint action of the mentor and the cloud theory, the final relatively perfect overall PE program is produced. Finally, the overall evaluation system is added into various links so as to make all aspects of the entire system conduct self-regulation through the evaluation mechanism. The initial construction of the whole system is shown in Figure 1, and the relationship among students, teachers and systems is covered. The use of this reasonable relationship can more effectively implement humanized management.

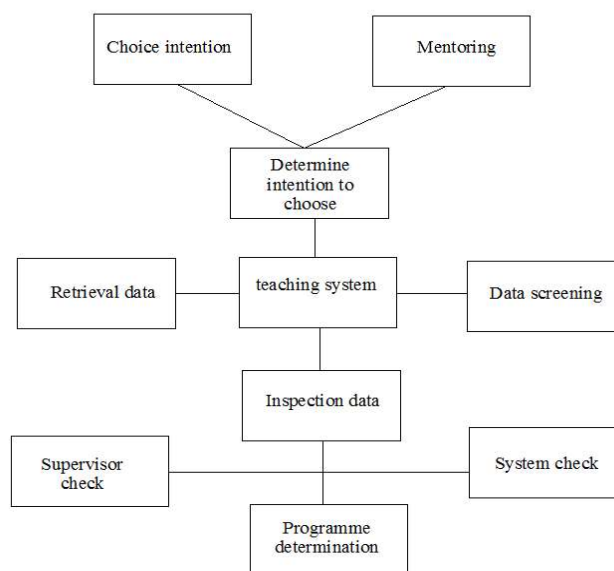


Figure 1. Overall design factor analysis

For a rationalized system, only the forward transmission is not enough, and certain planning needs to be made for the hard construction of the entire system. The whole evaluation system contains a relatively high intelligence system, so it is difficult for the traditional form of system configuration to reach the system evaluation indicators. The first is to provide a program link; because a relatively large range of database searches and intelligent exclusion calculations will be carried out, the CPU with high performance should be configured. Secondly, on the basis of that the whole university system has a large number of users, a hard disk with large memory is provided. The third is about other parts of a relevant hardware configuration of the system. As shown in Table 1 below, the entire configuration is highly optimized. Based on ensuring fluency and stability, supplemented by the necessary security system, the cloud theory and intelligent processing seem to be at ease in the system. Of course, the system configuration is not blindly stacked but takes good and stable operation as the goal. And then, taking into account that the user's base is large, blindly high performance is also not desirable.

| Project | Model selection | Performance configuration |
|--|-------------------------------------|--|
| CPU selection Memory selection Hard disk selection | Three level cache DDR333 SSHD | High performance Medium performance Medium performance |

Table 1. Computer-aided architectural design hardware

After the basic ideas and hardware needs meet the corresponding requirements, a principled investigation should be carried out to the entire system. As shown in Figure 2 below, taking into account the practicality of the PE teaching evaluation system, the whole principle is divided into five parts to consider: the first is the objective requirements. The principle design of the system needs to pay attention to the subjective requirements of students; however, this does not mean that objectivity is non-existent; on the contrary, it is an important part of the evaluation; the system design should be in line with the needs of the objectivity; the second is the principle of feasibility. The idea of this system must be feasible, so it should be in line with the principle of feasibility. For this feasibility mechanism, the whole system evaluation must be the rationalized construction; the third is the scientific principle. The principle should be consistent with the teaching rules of physical education teaching, which can't excessively exaggerate the assessment of this kind of indicators; at the same time, it also can't make this evaluation useless to

make the whole realize the equalization and scientific process; the fourth is the principle of contrast, an evaluation system can also make different tests to a large number of different personnel. Through the contrast of evaluation, a more effective evaluation mechanism can be established; the last is the comprehensiveness and guiding principle. Because the system has a wealth of search resources, this evaluation mechanism should be rationally used, so as to ensure the correctness of the guidance. Therefore, using reasonable principles can be more conducive to the rational operation of the system.

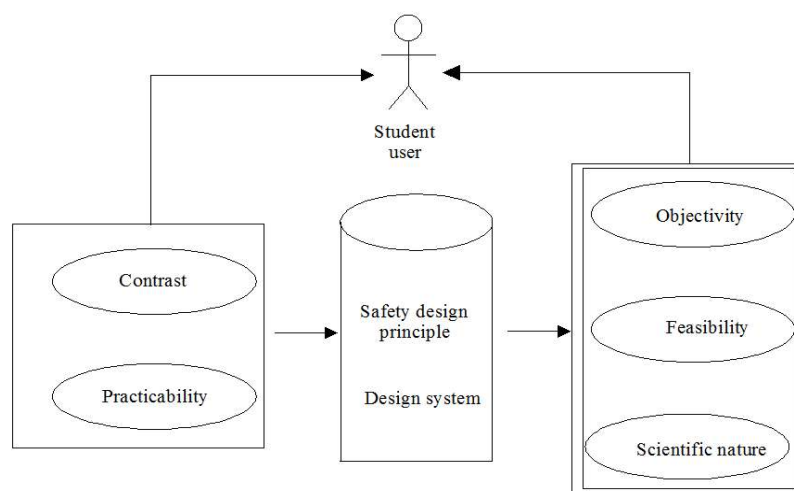


Figure 2. System design principles

The feedback mechanism of the whole system is established for the cloud theory to establish the feedback of the evaluation system. In the evaluation system, the evaluation of each link is added. The whole link is divided into five sections: the input of basic information, the classification of input information, the processing of the input system, the verification of the input system and the evaluation of input information. Because the system is an evaluation system for sports teaching, the feedback mechanism is constructed, as shown in the figure below. In the feedback mechanism shown in the following figure, the information input comes from students' relevance tests. Students will choose different sports activities; some like leg movement, while others like upper limb exercise, etc. The evaluation methods for different parts of teaching are different. Therefore, it can be said that the input of information includes the overall entry of the different sports teaching methods. Then, in the classification of information, because students' choices have differences, different classifications are made for different choices of students to conduct better classification evaluation. In the processing phase of the information, it is necessary to summarize and process the classified information and present the student's entry information with a simple score value. The last is the evaluation part of the data, which is the most critical part, that is, the evaluation system for the entire system. This evaluation system is a comprehensive consideration, so in the evaluation of the entire system, a holistic consideration mechanism is added. To establish the corresponding feedback system, the evaluation of the whole system is further fed back into the information input. When the evaluation fails or does not meet the corresponding criteria, the entire information is adjusted, to achieve a better adjustment mechanism at the time of feedback.

The main purpose for the appearance of the evaluation system is not to evaluate the students but to use this evaluation system to play a certain guiding role to students in sports activities. In addition, to meet the needs of modern quality education, some targeted changes must be made for the whole of physical education. The traditional model of the evaluation system is challenging to take into account each student, so the original intention of the design of this system is for students. Students are the information input's starting point and output's end. The systematic feature of the whole evaluation mechanism is adjusted through the continuous cycle adjustment mechanism. Of course, the system should consider that the humanized part is the diversity of the evaluation system, which can provide a variety of evaluation systems for

each user. Evaluation is divided into four levels: excellent, good, medium, and poor. According to different evaluations, different degrees of adjustment are made.

With the overall development of China's computer technology, the ability to process data is

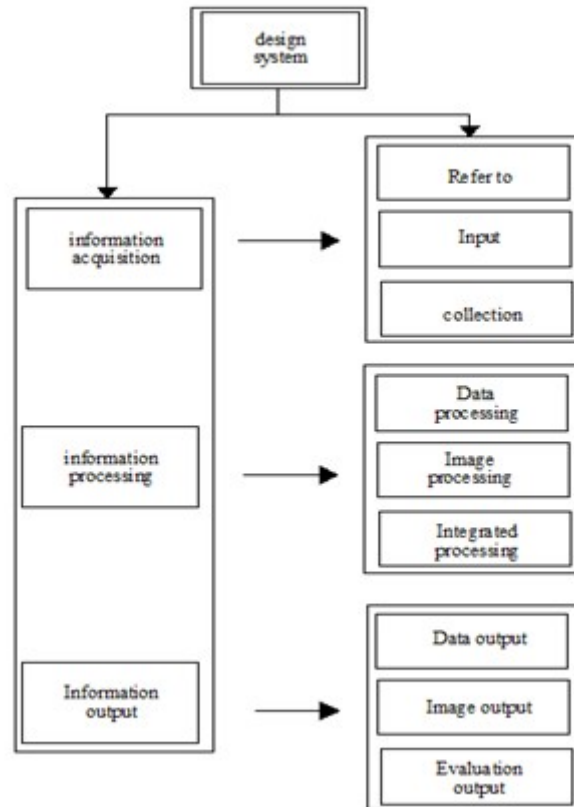


Figure 3. System operation mechanism



Figure 4. Educational administration management system management system

also quite different. The previous relatively cumbersome evaluation has gradually faded out of people's vision. Through continuous refinement processing, the whole system evaluation only needs to control the student management part, teacher management evaluation part test evaluation, etc.. The middle cumbersome steps are reduced, making the results more accurate and intelligent. The whole system not only provides the corresponding predictive evaluation, but it can also carry out the independent evaluation. And the emergence of a more targeted evaluation system will greatly enrich the entire physical education system.

4. Result Analysis and Discussion

After completing the system design, students must enter the corresponding test and evaluation system. In this system, the corresponding login verification part is set up for the privacy design for each student. Furthermore, the whole evaluation makes a very good privacy. After completing the corresponding verification, the corresponding evaluation system is carried out. Many databases and cloud theory are adopted for the entire system. The user only needs to log on to the appropriate interface in this part. It can be seen that after login, there are detailed PE teaching program classifications; each classification has different descriptions, and the navigation part of the interface includes the introduction of the development of PE teaching and the evaluation and selection part of the whole teaching system. According to this website, students can learn more about different types of PE curriculum arrangements developed by institutions and better understand the different characteristics of these PE courses. Furthermore, the comprehensive evaluation of each PE course is introduced. In addition to these two learning units, the website's home page also includes the exchange and interaction with teachers, and then, the entire humanized consideration is strengthened. Finally, the benefits brought by reasonable sports and the latest real-time information are introduced in detail, which is conducive to learners understanding the sports trends in China, thus making them generate interest in sports movement by paying attention to the development of sports movement.

While testing the system's performance, the accuracy of the whole system was evaluated in detail. Then, at the same time as considering the system evaluation, whether the number of online users will affect the evaluation rate of the entire system was mainly considered. Because the whole system was carried out within the school, the population base was relatively large. According to the processing results 100, 200, 400, 800 and 1,600 users were online at the same time; the results were obtained, as shown below:

| Project | 100 | 200 | 400 | 800 | 1600 |
|------------------------------|-----|-----|-----|-----|------|
| Information Acquisition Time | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 |
| Information Processing Time | 1.2 | 1.4 | 1.4 | 1.5 | 1.6 |
| Feedback Result Time | 1.1 | 1.1 | 1.2 | 1.3 | 1.4 |
| Correct Evaluation Of Time | 1.1 | 1.1 | 1.2 | 1.3 | 1.4 |
| Total Time | 4.5 | 4.8 | 5.2 | 5.6 | 6.0 |

Table 2. Processing speed evaluation table

As shown in the above table, the overall feedback time of the system was 4.5 s when the total number of users was 100. When the number of people increased to 1,600, the feedback time of the whole PE evaluation system was 6.0s. The difference of the whole time was very small, which was almost negligible. It is easy to see that with the constant increase in the number of users, the feedback time of the entire system increases little. So, in terms of feedback time and efficiency, the system completely has no pressure, and the whole system is feasible.

Because the system is associated with the overall network, once the network is out of order, the system will be difficult to carry on. Therefore, to further examine the integrity of the system, the overall patency based on the network was used as a focus of the study. The tests based on network fluency are shown in the following table:

| | | | | | |
|---------------------------|------|------|------|------|------|
| Project | 100 | 200 | 400 | 800 | 1600 |
| Patency Rate | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% |
| Failure Rate | 0.2% | 0.2% | 0.2% | 0.2% | 0.2% |
| Network Fluctuation Times | 1 | 2 | 3 | 4 | 5 |

Table 3. Processing speed evaluation table

The above table shows that with the increasing number of users, the overall degree of network fluency has not yet changed. The average failure rate of the system is 0.1%. Then, it can be found that this system performs well in terms of network patency, and the anti interference intensity is high. With the increase in the number of users, the number of fluctuations in the network has increased from the first one time to the later five times. So, in the case of guaranteeing fluency, the overall fluctuation range of the network is smaller. Then, in network security, the entire network security system has good protection, and the network security guarantee of the entire system is also good. In addition, a targeted test is carried out to each part and each link of the entire test. The test results also show that the system's security is the most stable, and the anti-network attack success rate is 100%.

The normal operation of the system relies on the cooperation of the components in many aspects. Therefore, the above key projects need to be considered and dealt with. On the basis of ensuring the operating rate, it's necessary to take into account the system's security and confidentiality while improving the users' use experience effect. In addition, at the same time of the operation, the maintenance should be carried out constantly to let the system continually repair problems arising at various stages. In the follow-up study, the system's anti-jamming capability should be added, and the data protection mechanism should also be added to each link so as to ensure that the user's data can be saved timely when the power is off.

5. Conclusions

With the continuous deepening of computer technology research in China, the research on the application of evaluation system construction of PE teaching in colleges and universities in China is also deepening. With the reform of the educational system, the intelligent evaluation system is indispensable. Therefore, this paper puts forward the application of cloud theory in constructing PE teaching evaluation systems in colleges and universities based on big data and uses cloud theory to construct the system platform system reasonably. In the process of testing the performance of the system, according to the system feedback processing results that 100, 200, 400, 800 and 1600 users were online at the same time, it was obtained that the system's total feedback time was 4.5s when there were only 100 users; when the number of people increased to 1600, the feedback time of the entire PE teaching evaluation system was 6.0s. The difference of the entire time was small, and the feasibility of the system operation was proved. Moreover, with the increasing number of users, the overall network fluency has not yet changed. The average failure rate of the system was 0.1%. It can be found that this system performs well in the aspect of network fluency, and the anti-interference intensity is also relatively low. However, throughout the study, the corresponding intelligent storage mechanism is lacking. In future research, the system's anti-jamming capability will be added, and the data protection mechanism will also added to each link so as to ensure that the user's data can be saved timely when the power is off and the feasibility of the whole system can be continuously optimized.

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