Hindawi
Scientific Programming
Volume 2022, Article ID 7475857, 12 pages
https://doi.org/10.1155/2022/7475857

Research Article

College Physical Education Teaching and Content Optimization Based on Computer Information Technology

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Received 24 January 2022; Revised 16 March 2022; Accepted 24 March 2022; Published 13 April 2022

Academic Editor: Punit Gupta

Curriculum plays a central role in the cultivation of professional talents in colleges and universities and is the carrier of the goal of talent cultivation. Curriculum reform is the core of physical education teaching reform. In the context of social needs, curriculum reform should aim at cultivating professional talents. The overall reform should be guided by social needs to improve the suitability and effectiveness of curriculum reform. This paper aims to study the analysis and content optimization of physical education teaching based on the background of computer information technology. In order to maximize the professional function of physical education teaching and better provide basic guarantee for physical education, this paper firstly carries out a conceptual analysis of physical education and content optimization. Secondly, this paper expounds the advantages of computer information technology and then deeply studies the network computer server cluster method. Then it optimizes the case design of the teaching content of the special course of physical education. The cluster analysis results of college physical education teachers and experts show that, in terms of teachers, 36% of teachers are satisfied with the physical education textbooks, ranking first.

1. Introduction

With the deepening of Chinese sports basic reform, Chinese higher education model has gradually changed. It has also changed the way we cultivate social sports talents. Today, we see computer technology in many fields. It began to be extended to the teaching management of colleges and universities. The PE curriculum is dedicated to the important work of training secondary school PE teachers. But with the continuous deepening of physical education, the awareness of the times is weak. The content of physical education reveals that the teaching materials are outdated and the techniques and tactics are lagging behind. This directly affects the cultivation of sports talents and the healthy development of sports undertakings.

Years of practice have shown that the application of computer technology in college teaching management has greatly improved teaching efficiency and teaching quality. Therefore, it is necessary to study the application of information technology in university management. Due to the major problems in the content of physical education, there is an urgent need for content optimization. Optimizing the content of physical education can meet the needs of social development and the public for physical education. It improves the overall quality of students and enables students to develop in an all-round way.

Innovations in this paper: (1) Based on the background of computer information technology, it analyzes physical education teaching and content optimization and application service request allocation based on dynamic probability, so as to carry out research on network computer server clustering method. (2) This paper adopts literature review, data statistics, and other research methods. On the basis of in-depth study of NC application service cluster, it conducts a comprehensive and in-depth investigation and analysis of the content of physical education teaching.

2. Related Work

With the continuous development of computer information technology, its application in various fields is more and more extensive. Tian has developed a rural information education

platform. After he introduced computer technology into the rural information education platform, he built an education platform based on computer information. He designed the function, structure, and implementation method of each module in the platform. In addition, he also proposed the overall design model of the personalized education platform. He details the implementation of the platform and demonstrates the demo process of the platform. However, he did not fundamentally solve the problem of farmers' "three rural" education [1]. Sindhu studies India's export performance of software services, including computer services and information technology services (ITES). During 2008–2019, the industry's export growth rate was 13%. While public limited companies are the main contributors to exports, the private sector has dominated the past two years. However, the data provided in the paper is less [2]. Mamarajabov aims to highlight the contribution of computer science education (CSE) to the development of key competencies. In addition to outlining its contribution to conveying general education, the first approach to the competency model will be presented. Finally, he will show how the competency components covered by the competency model contribute to the development of key competencies across the CSE. However, models are not well integrated into computer science education [3]. Razak aims to survey 18 web domains of computer science and information technology academic websites of universities in Malaysia. He collected more than 2 million web pages, and webometric analysis was used to explore the number of web pages, inbound links, Web Impact Factor (WIF), and link relationships. However, the number of his experimental calculations is less, and the credibility is not enough [4]. Mazurik discusses major show activities. For the first time within the framework of the conference, he organized the school symposium "Ecological education for sustainable development in Russia" and the symposium "Contemporary perspectives on children, schools, libraries, society." The speakers of the final session of "LIBCOM-2019" pointed out the interactive nature of the special activities of the conference, the activities of the participants in the discussion, and the discussion of important issues. However, the article generally does not take into account the practical factors [5]. Abdrakhmanova set a goal in his research to bring language teaching methods into the development of modern information technology. In classroom language, various teaching tasks can be solved with the help of the Internet. He also reviewed the linguistic and cultural status of Kazakh idioms. He analyzed samples of students' idiom usage in speaking and writing. Based on the detection of misapplications, he concludes that cognitive analysis of idioms' discourse context is crucial in determining the exact meaning of idioms and the circumstances in which they apply. However, he used a single research method [6]. Chow introduces the background and concepts of Internet-based computer technologies, such as cloud computing, big data processing, and machine learning. He then describes their potential applications in radiation therapy, such as treatment planning and dose delivery. He discusses current advances in these applications and their impact on radiation therapy and will also explore and evaluate expected benefits and challenges in implementation. However, specific case studies are lacking [7]. The purpose of Kong research article is to identify the developmental patterns of the art of music in relation to modern social life. He conducts in-depth research on the systemic nature of music of different styles and eras. He conducts comparative studies of problems using general scientific and logical methods of analysis, synthesis, induction, and deduction. However, there are a lot of subjective ideas in the article [8].

3. Network Computer Server Cluster Method

3.1. Optimization of Physical Education Content. The training of physical education is mainly to meet the actual needs of Chinese socialist modernization and reform and development and to integrate morality, intelligence, physique, and beauty [9]. It requires a broad professional foundation, modern educational concepts, good scientific education and professional ethics, innovative spirit, and practical skills. They also need to be able to engage in scientific research on school sports, the management of school sports, and the management of social sports, with multifunctional and specialized training of professionals for this purpose.

"Get rid of the dross and take the essence" is the explanation of "optimization" in Baidu Encyclopedia. In order to do better in one area, it let go of other areas that are not as important. "Optimization" means to measure according to certain standards according to the actual possibility at that time. "Optimization" is to define the working method system that affects the dual indicators of quality and time consumption from the specific situation. Based on feedback, it selects the best plan in a timely manner and adjusts the activity process to maximize benefits.

3.2. Computer Information Technology. With the development of computer technology, the teaching equipment has also undergone major changes. Multimedia teaching methods have been widely used in teaching activities, greatly improving teaching efficiency. The main advantages of computer information technology in teaching management are as follows: the application of computer information technology in the process of multimedia teaching can improve students' interest in teaching activities. It enables students to better integrate into teaching activities, thereby improving teaching quality and effectiveness. The application of information technology in teaching activities can enhance the interaction between teachers and students and create a good teaching environment. At the same time, it is also conducive to exploring new teaching methods and applying innovation to teaching. With the help of computer information technology, on the one hand, more feedback can be obtained, and a more thorough understanding of the students' situation can be obtained. On the other hand, it also broadens the way of learning and encourages students to learn actively. Computer information technology has changed traditional teaching methods, enriched teaching methods, and emotionally expressed abstract knowledge. This enables students to better understand knowledge and master knowledge.

The integration of information technology and computer education has contributed to the informatization of

education. This brought about a change in thinking, and students became the leaders of teaching activities. Learning activity knowledge is formed by students according to the cognitive structure in their own minds. This is a brand-new teaching concept, suitable for teaching under the background of computer information technology. Educational informatization has also brought about changes in educational methods and methods. The single teaching of words and deeds and the chalk blackboard have been transformed into multiform courseware and resources. In addition to the innovation of educational concepts and teaching methods, educational informatization is more important for the reform of educational and teaching models. This change will be a revolutionary change. From the "pass-accept" teaching method to an independent teaching method. Students of information-based active and research-based learning methods transform from passive recipients of information processing knowledge to active recipients of information processing knowledge [10, 11].

3.3. NC Application Service Cluster. The purpose of NC server cluster (network computer server cluster) system using peer-to-peer network topology is to improve the scalability of the system. That is, each node in the cluster can act as a load balancer to accept and distribute user service requests and can also provide remote application services. The system is mainly composed of two subsystems, the load balancer and the cluster management system. As shown in Figure 1, the system is built on the ASPNC system and its corresponding modules have been modified, such as session relay module, session management module, and service session module.

The entire cluster includes three forms of communication: point-to-multipoint communication between the cooperating modules of the load balancers in the cluster and the communication between modules within the application server [12]; the point-to-point communication between the client and a load balancer's CiASP protocol engine and the load balancer's cooperation module. Reliable, orderly, and stable channels are required for the form of communication to ensure its service quality. Therefore, the communication method based on TCP is adopted, because compared with single-wave technology, multicast technology can generally greatly reduce the bandwidth requirements of the entire network. At present, this technology has been widely used in audio and video networks. Therefore, in order to improve the communication efficiency and reduce its complexity, the communication mode adopts the communication method based on multicast. Because the IPC mechanism has the characteristics of high communication efficiency and large communication volume, the communication form adopts the communication mechanism based on IPC. It includes message queues, pipes, shared memory, etc.

3.3.1. Calculation of Load Index. The single load index and the total load index are two aspects of the load evaluation mechanism. Formula (1) and formula (2) are used to calculate the single load index, and formula (3) is used to calculate the total load index.

$$L_P = \sum_{a=L}^{P} \frac{\text{Load}_a e^{-(P-a/P-L)}}{(P-L)}. \tag{1}$$

L_P represents the current load index, the sampling interval is represented by [L, P], and the load value at the a-th adopting moment is represented by $Load_a$. The sampling interval is a window that slides over time. The sampling interval is uniform, and the sampling time is controlled by the sampling trigger. This formula indicates that the calculation of a single load indicator during load evaluation is affected by the historical load status. However, the load value of the sampling point closer to the load evaluation time has a greater influence on the load index value.

$$L_P = \left(L_P^{'} - \text{Load}_{L-1} e^{-1}\right) e^{-\frac{1}{P-L}} + \frac{\text{Load}_P}{(P-L)}. \tag{2}$$

The previous single load indicator is represented by $L_P^{'}$, the load value of the leftmost sampled value before the sampling area during the previous load evaluation is represented by $Load_{L-1}$, and the current sampled value is represented by $Load_P$. This formula is the formula used when calculating a certain load index. Its main purpose is to reduce the computational overhead of load metrics. This formula indicates that the calculation of the load index only needs to consider the current load value and the last calculated load index.

$$L_e = \sum_{a=1}^{4} \varphi_a L_a. \tag{3}$$

The comprehensive load indicator is represented by L_e, and the weight of the load indicator is represented by φ_a, of which $\sum_{a=1}^{4} \varphi_a = 1$.

3.3.2. Dynamic Adjustment of Weights. The total load metric can be viewed as a measure of system performance efficiency. Any point of congestion caused by load measurement will cause the server to perform less efficiently. For example, when the memory utilization exceeds a certain threshold, the CPU utilization is still low even at this time. But the system has lower execution efficiency. Therefore, when calculating the load index, the proportion of a single load index in the comprehensive load index should be determined according to the current load state of a single load index. Negative feedback is first introduced in order to complete the load index. It then dynamically adjusts the weight processing of the load index according to the current load situation [13].

$$\varphi_a' = \varphi_a - X_a * \sqrt[3]{Y_a - \varphi_a}, \ (\varphi_a \neq Y), \tag{4}$$

$$\varphi_a' = \varphi_a, \ (\varphi_a = Y), \tag{5}$$

$$\varphi_a = \frac{\varphi_a'}{\sum_{a=1}^{4} \varphi_a'}. \tag{6}$$

The expected utilization of a certain load index is represented by Y_a, which is used to normalize the updated load weight as formula (6). If a load index exceeds Y at present, its

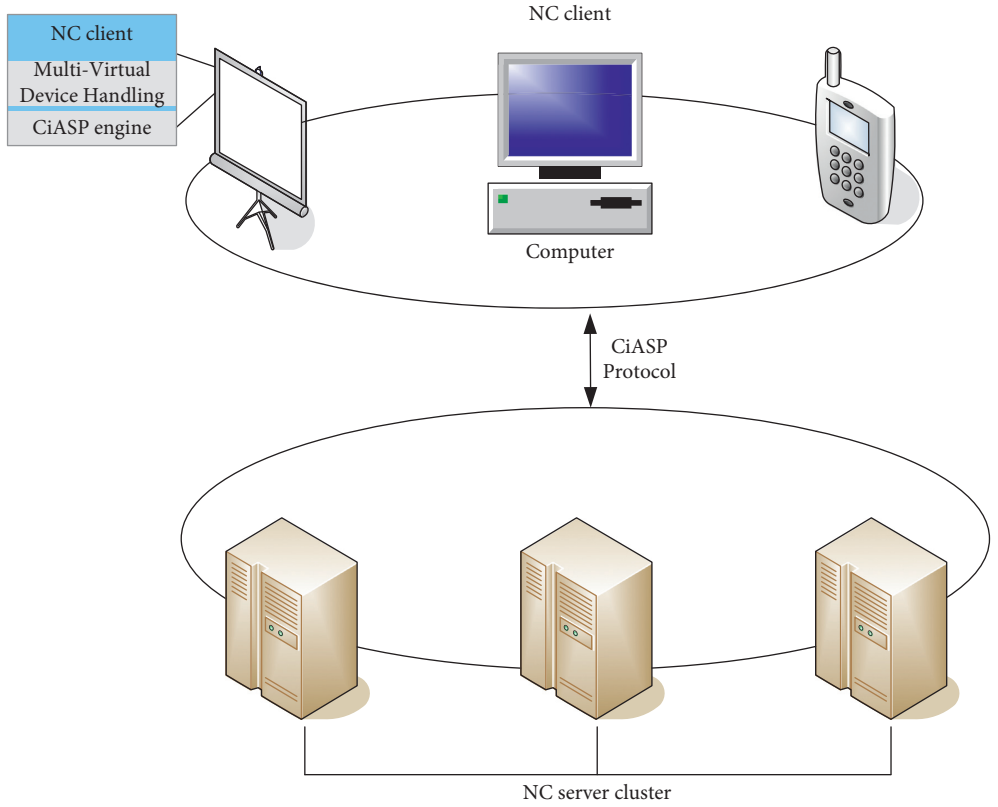

Figure 1: Architecture of the NC server cluster.

weight is increased. The proportion of the load index in the comprehensive load index will also increase accordingly. If a load index is currently lower than Y, the weight is reduced. The proportion of the load index in the comprehensive load index will also decrease accordingly.

3.3.3. Application Service Request Allocation. Heterogeneity is a characteristic of NC server clusters. When calculating, other computing capabilities need to be considered [14]. The design of the algorithm draws on the idea of potential energy in the load transfer algorithm based on potential energy in parallel computing. The formal representation of the NC server cluster is as follows:

$$\text{Cluster} = \{\text{Sever}_a \mid a = 2, 3 \ldots n\}, \tag{7}$$

$$\text{Sever}_a = (\text{Computer}_a, \text{Load}_a), a \in \{2, 3 \ldots n\}. \tag{8}$$

Equation (7) indicates that the NC server cluster consists of multiple application servers. In equation (8), each server is represented by a two-tuple. Compute represents the computing capability of the server, and Load represents the total load index of the current server. According to the calculation principle, the dynamic energy of each load of the application server in the cluster is calculated as follows:

$$\begin{aligned} \text{Height}_a &= \frac{\text{Load}_a}{\text{Computer}_a}, \\ \text{Mass}_a &= \text{Computer}_a * \text{Height}_a, \\ PE(\text{Sever}_l) &= \frac{\text{Computer}_l \text{Height}_l^2}{2}, \\ \text{MPE}(\text{Cluster}) &= \max(PE(\text{Sever}_a)). \end{aligned} \tag{9}$$

Among them, Height represents the height of the water, Mass represents the mass of the water, PE (Server) represents the dynamic energy, and MPE (Cluster) represents the maximum dynamic energy. In summary, the probability formula for application service request allocation is

$$\begin{aligned} P(\text{Sever}_a) &= \frac{1}{n}, (\text{for} \forall n_a, n_b, \text{both have} PE(n_a) = PE(n_b), \\ P(\text{Sever}_a) &= \frac{(\text{MPE}(\text{Cluster}) - PE(\text{Server}_a))^2}{\sum_{a=1}^{n} (\text{MPE}(\text{Cluster}) - PE(\text{Server}_a))^2}. \end{aligned} \tag{10}$$

As shown in Figure 2, when a service request is approved, the load balancing algorithm calls the random number generator to create a random number and determine the probability range of its fall. Finally, this probability period is used as the basis for service request allocation.

3.3.4. Simulation of Service Request Time Interval. Heartbeat mechanism (Heart Beating) is a technology to achieve high availability. The usual implementation method is to set up two peer nodes, master and slave, at key points that are prone to single-point failure. There are two heartbeat nodes running on it, respectively, and the master node periodically sends messages to the slave nodes and receives their replies. When the master node does not receive a reply message from the slave node within a period of time, the node is considered to be invalid. Similarly, if the master node fails, the slave node can judge that it fails because it has not received information from the slave node within a certain period of time. On the one hand, the NC server cluster adopts a peer-to-peer network-based architecture. On the other hand, as the scale of the cluster increases, the use of the master-slave node communication method will cause the bottleneck of the entire system. Therefore, this method is not suitable for NC server cluster [15].

When the system load is light, the heartbeat process in the master node state generally quickly receives reply messages from other heartbeat processes after sending out polling messages. When the system is under heavy load, the corresponding delay in receiving the reply message is relatively large. At this time, some polling messages sent in the first polling cycle may not receive a reply message until the second or third polling cycle. Similarly, for the heartbeat process in the election state, when the system is under heavy load, it may be in the master node state by mistake because it cannot receive the rejection message from other heartbeat processes. Improper handling of this situation can lead to false positives, which can seriously affect the performance of the system. In the system design, we use the following formula to calculate the timer value:

$$\begin{aligned} &\text{Mastre\_Timer} = n * \text{Polling\_Timer} + \varphi_1 * \text{Net} + \varphi_2 * CPU + \varphi * MEM, \\ &\text{Mastre\_Timer} = \text{Slave\_Timer} = \text{Election\_Timer}. \end{aligned} \tag{11}$$

The parameter values in the formula can be set. In practice, n takes 3, and Φ1, Φ2, and Φ3 all take 1. Net indicates the maximum value of the network load indicator in the LSDB database on the application server where the heartbeat process in the master node state resides. CPU indicates the maximum value of the processor load indicator in the LSDB database on the application server where the heartbeat process in the master node state resides. MEM indicates the maximum value of the main memory load indicator in the LSDB database on the application server where the heartbeat process in the master node state resides.

3.3.5. Service Session Request Simulation Method. User service request is the basic scheduling unit of network computer system, and it is inseparable in scheduling. NC server clusters have the basic characteristics of concurrent systems when dealing with concurrent access by a large number of users [16]. Therefore, simulating user service requests must follow some basic characteristics of concurrent tasks. It models the time interval of user service requests with a Poisson distribution. Assuming that it is possible to derive multiple user service requests at the same time each time, the time interval between requests satisfies the Poisson probability density. According to the characteristics of Poisson distribution, the time interval between two adjacent derived user service requests satisfies the following probability density:

$$\begin{aligned} &f_{Ta}(t) = 0, t < 0, \\ &f_{Ta}(t) = \lambda \cdot e^{-\lambda t}, t \geq 0. \end{aligned} \tag{12}$$

This probability density is independent of a and is a Poisson distribution with derived strength λ. Thus, the obtained time interval {Ti} obeys an exponential distribution and is an independent random process.

It modifies the NC server cluster performance management module, so that each server regularly stores its load index value in a log file. It is assumed that each data in the log is represented by a triple data= (Server, index, value). Among them, Server represents the server corresponding to the indicator, index represents the serial number of the data, and value represents the indicator value [17]. If P(value) represents the load potential of the server, the first moment of the load potential of the servers in the cluster can be calculated as follows:

$$\begin{aligned} AP &= \frac{1}{n}\sum_{a=1}^{n} p(\text{data}(a).\text{server}). \\ A &= \frac{1}{n}\sum_{a=1}^{n} p(\text{data}(a).\text{server} - AP)^2. \end{aligned} \tag{13}$$

The average value of the dynamic load energy is represented by AP, and the first moment of the load potential energy is represented by A.

4. Teaching Content Optimization Experiment of Physical Education Major

4.1. Status of Students' Physical Health and Teaching Content. All colleges and universities strictly implement the "National Student Physical Health Standards" and conduct a large-

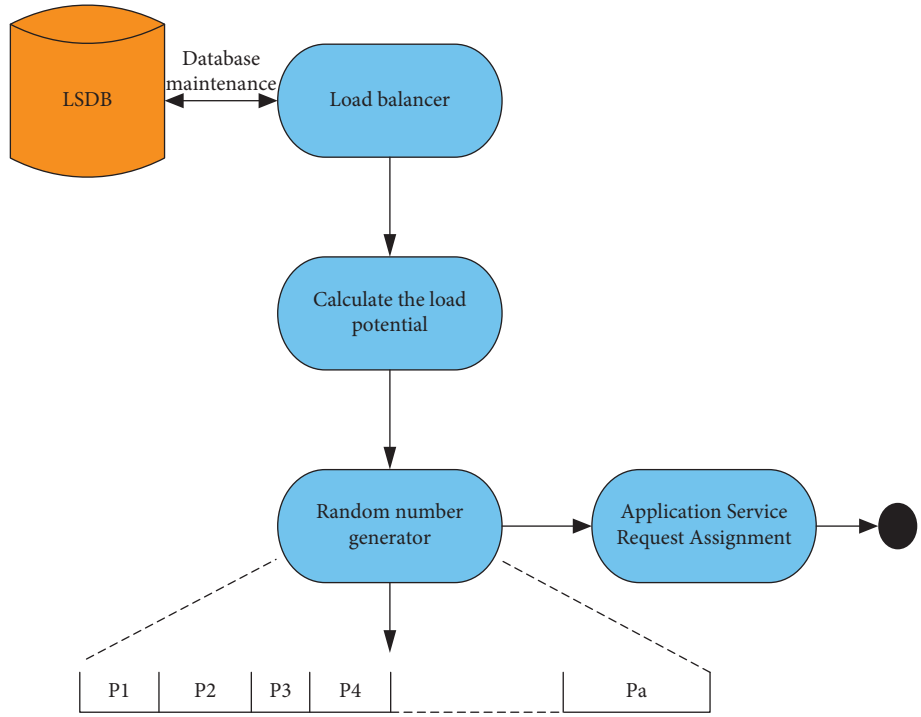

Figure 2: Application service request allocation based on dynamic probability.

scale physical health standard test for all students every year. The test system used is the "Huihai" brand test system produced by Tsinghua Tongfang. The items tested in 2021 are lung capacity, standing long jump, 800 m or 1000 m long-distance running, and step test. According to the system's evaluation of the data of 5,178 students who participated in the test in 2021 and obtained complete records, it sorted out data on lung capacity, standing long jump, long-distance running, and step tests. The specific content is shown in Figure 3.

In general, the students' cardiopulmonary function is better. The scores of the spirometry index and step test index were generally high, and the proportion of excellent spirometry was 77.75%. The level of long-distance running is good, with a failing rate of 15.28%. However, the students' leg explosiveness is poor, and the failure rate of standing long jump is as high as 45.54%. On the other hand, schools can compile school-based textbooks based on their own actual conditions. It is used in conjunction with existing teaching materials to meet the needs of different groups.

At present, the continuous deepening of education reform in the country has also promoted the continuous change of the training objectives of the five sets of professional curriculum plans for physical education majors in ordinary colleges and universities. The reform of higher education puts forward the goal of cultivating compound talents. In June 2003, the Ministry of Education issued the "National Undergraduate Professional Curriculum Program for Physical Education Majors in General Colleges and Universities." This clarifies the training objectives of the undergraduate major of physical education: this major trains compound sports talents. Its requirements can meet the requirements of school physical education work, training work, educational competition work, and scientific research work. It can meet the needs of sports management and social sports guidance. It also pointed out that the training objectives should be based on the training of physical education teachers and radiate to other fields related to physical education. In this way, the caliber of professional training and students' knowledge are gradually broadened, and the flexibility of students' course selection is improved. It mobilizes students' enthusiasm for learning and improves their ability to adapt to the society. Teaching content refers to the information and materials that teachers and students interact with in the teaching process, serving the purpose of teaching and carrying out teaching work [18]. The teaching content of physical education courses usually covers the teaching content of theoretical courses and the teaching content of technical courses. Figure 4 shows the understanding of different groups of people on the teaching objectives of physical education courses.

As can be seen from Figure 4, both students and teachers believe that the top three teaching objectives of PE specialization courses are mastering the basic knowledge of physical education for students, teaching students to demonstrate correctly, and being able to engage in physical education teaching. Among them, the "master of basic knowledge of sports for students" (96.7% of students and 89% of teachers) is the top one. In addition, a larger proportion is to stimulate students' interest in sports. This shows that different groups of people tend to be consistent in their understanding of the teaching objectives of physical education courses. However, there are some differences from different angles. For example, because of employment

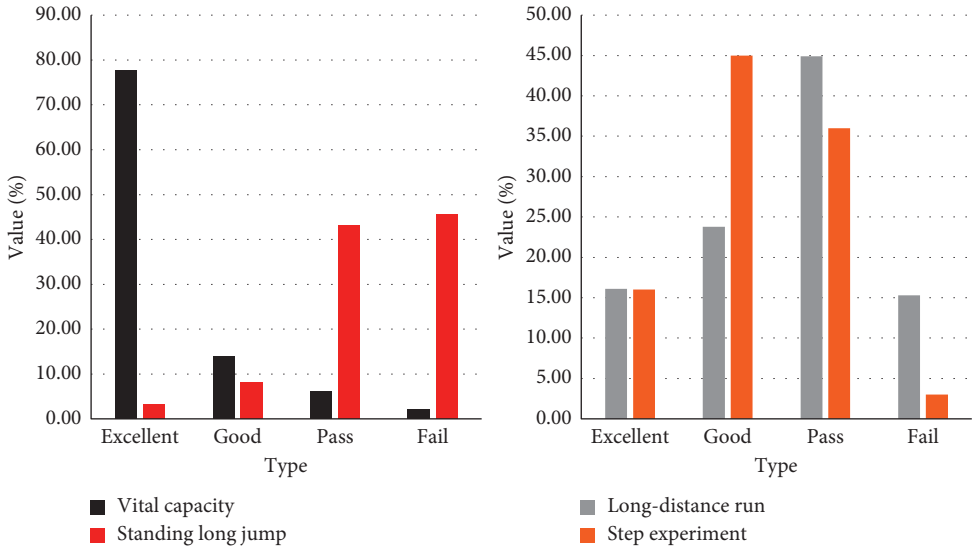

Figure 3: Some physical test results of college students.

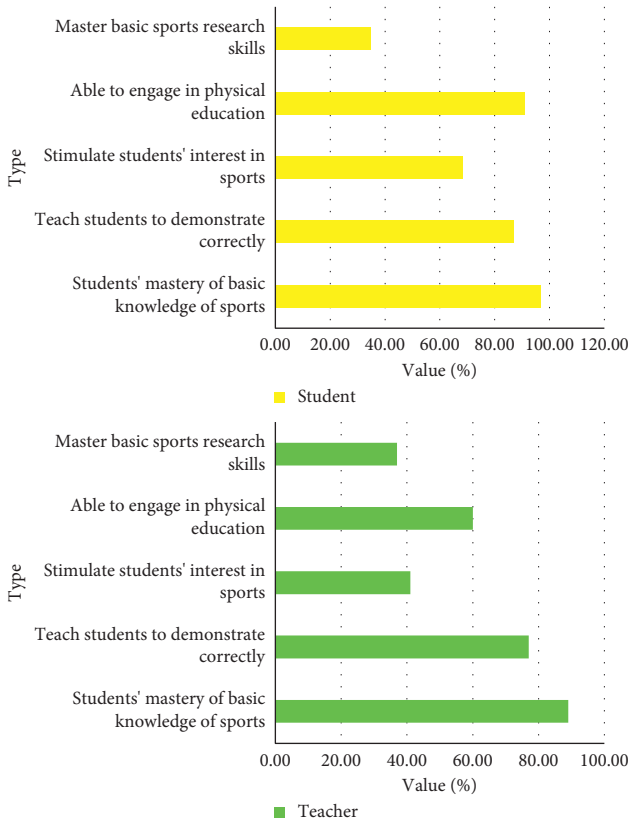

Figure 4: Different groups of people's understanding of the teaching objectives of physical education courses.

needs, to a certain extent, students pay more attention to whether they are competent in physical education teaching, and teachers pay more attention to the mastery of students' correct teaching methods.

4.2. Optimization of Teaching Content. This paper actually investigates the current situation of the development of special courses for physical education in a university. It has a corresponding understanding of the physical education teaching objectives, theoretical teaching content, technical teaching content, and teaching hours of a physical education major in a university. At the same time, a large number of documents were consulted, and the continuous reform and update of physical education teaching materials were understood. During the expert interviews, the experts provided a lot of knowledge and constructive opinions on sports. This provides the basis for this paper to optimize the physical education courses of a college physical education major [19]. Based on the above optimization principles, the author adopts the Q-type cluster analysis and at the same time formulates the questionnaires for relevant experts and teachers. Data was entered through Excel, and SPSS statistics 17.0 was used for statistical analysis of the data. It analyzes the results of the survey of experts and teachers, so as to scientifically evaluate and select the teaching content of physical education courses.

4.2.1. Selection of Teaching Content for Theoretical Courses. In order to optimize the teaching content of physical education courses scientifically, this paper divides the theoretical teaching content into five levels: not important, not very important, general, important, and very important. It was also subjected to Q-type cluster analysis. Cluster analysis is a widely used statistical method when conducting indicator surveys or sample classification. Classification refers to grouping similar samples or similar indicators into one class to ensure that everything can only be in one class. The idea of cluster analysis is as follows: first, the classification object is regarded as a class, and then the statistic is selected to realize the measurement of the similarity of the classification object. On this basis, starting from the degree of similarity, clustering of pairwise objects is carried out. Afterwards, the two are grouped into one class until all objects are classified into one class. Based on different classification objects and

classification methods, there are two types of cluster analysis, including R-type cluster analysis and Q-type cluster analysis. In general, R-type cluster analysis is more suitable for index classification, and Q-type cluster analysis is more suitable for sample classification [20, 21]. Therefore, this paper realizes the analysis of teaching content through Q-type cluster analysis.

Figure 5 and Tables 1 and 2 show the cluster analysis results of the average value of theoretical knowledge teaching content by sports experts and physical education teachers.

As can be seen from Figure 5, in the cluster analysis results of experts, the center value of the first cluster is 4.2, the second cluster is 3.6, the third cluster is 4.0, the fourth cluster is 4.8, and the fifth cluster is 4.5. In the cluster analysis results of teachers, the central value of the first cluster is 4.2, the second cluster is 3.4, the third cluster is 3.9, the fourth cluster is 4.8, and the fifth cluster is 4.5. It can be seen from Table 1 that the number of experts in each category is 5, 2, 3, 4, and 3, respectively. It can be seen from Table 2 that the number of each type of teachers included is 2, 3, 4, 3, and 5, respectively. Based on the evaluation results of experts and teachers, some theories are classified, and the following results are obtained, as shown in Table 3.

4.2.2. Selection of Teaching Content for Technical Courses. In order to scientifically optimize the teaching content of physical education, the teaching content of physical education technology is divided into five levels: not important, not very important, general, relatively important, and very important. It was analyzed by Q-type cluster analysis.

Figure 6 and Tables 4 and 5 show the cluster analysis results of the average value of technical teaching content by sports experts and physical education teachers.

As can be seen from Figure 6, in the cluster analysis results of experts, the center value of the first cluster is 3.7, the second cluster is 4.0, the third cluster is 4.3, the fourth cluster is 5.0, and the fifth cluster is 4.7. In the cluster analysis results of teachers, the central value of the first cluster is 4.3, the second cluster is 5.0, the third cluster is 4.0, the fourth cluster is 4.7, and the fifth cluster is 3.5. It can be seen from Table 4 that the number of experts in each category is 2, 4, 14, 41, and 29, respectively. It can be seen from Table 5 that the number of teachers in each category is 13, 38, 3, 34, and 2, respectively.

4.3. Optimization of Teaching Content Class Hour Allocation. The current society is developing rapidly. In the process of selecting the teaching content of physical education courses, the comprehensiveness and educational nature of physical education teaching content should be emphasized, to ensure that students in physical education courses can have a good grasp of physical education knowledge and have the ability to conduct school sports research, manage school sports, and conduct social sports guidance. In addition, when selecting the teaching content of physical education courses, it is

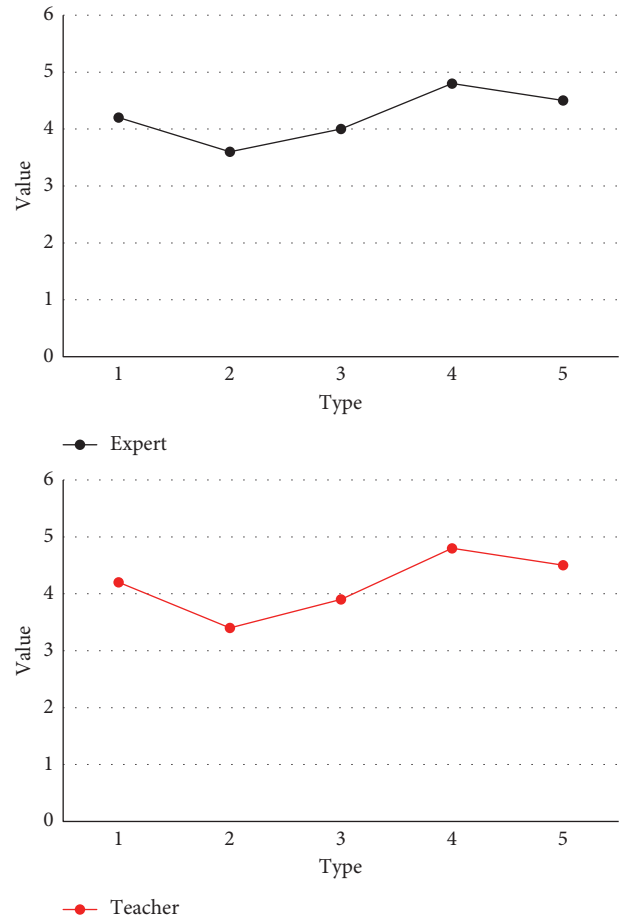

Figure 5: Cluster analysis of the average value of theoretical knowledge teaching content by experts and teachers.

Table 1: The number of cases of experts in the clustering of theoretical knowledge teaching.

Number of cases in each cluster		
Clustering	1	5.00
	2	2.00
	3	3.00
	4	4.00
	5	3.00
Effective		17.00
Defect		0.00

Table 2: The number of cases of teachers in the clustering of theoretical knowledge teaching.

Number of cases in each cluster		
Clustering	1	2.00
	2	3.00
	3	4.00
	4	3.00
	5	5.00
Effective		17.00
Defect		0.00

Table 3: Statistical table of clustering results of the importance of theoretical knowledge.

Content	Expert	Clustering results	Teacher	Clustering results
Sports overview	4.3	More important	4.2	More important
Principle of motion technology	4.7	Very important	4.6	Very important
Teaching theories and methods	4.8	Very important	4.7	Very important
Basic qualities of coaches	3.5	Unimportance	3.4	Unimportance
Scientific research work	3.9	Not very important	3.9	Not very important
Physical education teaching materials and teaching methods	4.3	More important	4.5	Very important
Sports consciousness and its cultivation	4.0	Commonly	3.7	Very important

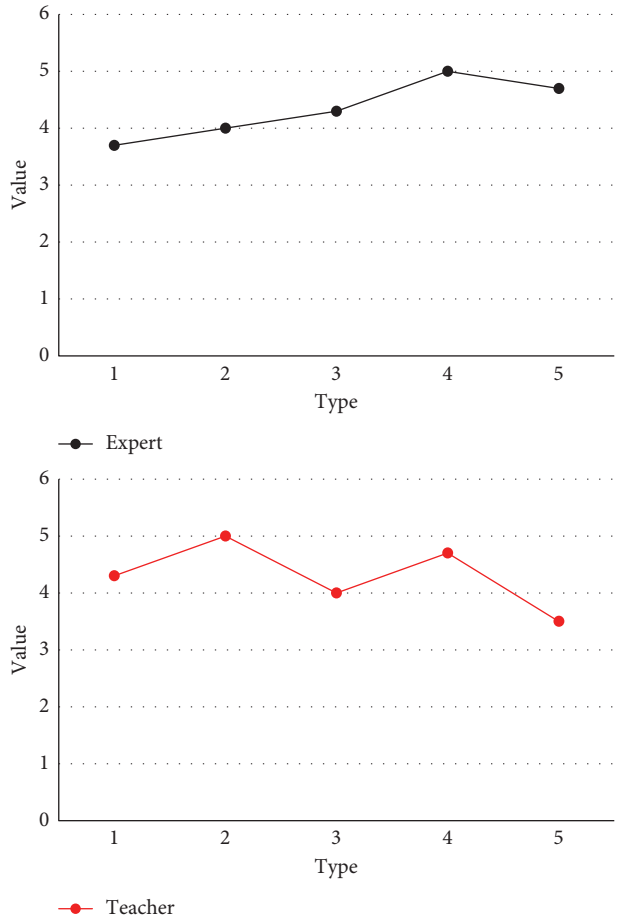

Figure 6: Cluster analysis of the average value of technical teaching content by experts and teachers.

Table 4: Number of cases of experts in technical teaching clustering.

Number of cases in each cluster		
Clustering	1	2.00
	2	4.00
	3	14.00
	4	41.00
	5	29.00
Effective		90.00
Defect		0.00

necessary to clarify the importance of different teaching content. It increases the frontier knowledge, enables students to master sports knowledge as much as possible, and

Table 5: The number of cases of teachers in the technical teaching cluster.

Number of cases in each cluster		
Clustering	1	13.00
	2	38.00
	3	3.00
	4	34.00
	5	2.00
Effective		90.00
Defect		0.00

cultivates students' sports skills. The author combines the results of the actual questionnaire with the opinions and suggestions of experts on the teaching content. Finally, the optimization system of the teaching content of physical education courses is determined as follows, as shown in Figure 7.

First, the starting time of the class should be arranged reasonably, and the class hours should be appropriately increased each semester.

Physical education courses are offered in the first grade, and students are not sure about the sports direction they are really interested in. It may lead to wrong choices for some students, which will affect their later learning initiative and will also affect later teaching. Physical education courses are offered in the third grade. Due to the influence of class hours, teachers cannot fully teach theoretical knowledge and skills, and students cannot fully grasp physical knowledge and skills [22]. Based on this, this study sets a special physical education course in the first semester of the second grade, as shown in Figure 8. The time for special courses in each semester can ensure the students' study time. It is also ensured that teachers have enough time to carry out special teaching so that students can systematically learn physical education knowledge and skills.

Second, reasonably control the proportion of technical courses and theoretical courses.

An important condition for taking a good physical education course is to reasonably arrange the ratio of theoretical courses and technical courses in physical education courses and theoretical knowledge to guide the study of technology. Therefore, it is very important to reasonably arrange the proportion of theoretical courses and technical courses in physical education courses. Comprehensive consideration is given to the actual situation of the university, the opinions of teachers, and the needs of students. This study believes that the teaching hours of theoretical courses should be appropriately reduced. It is more to

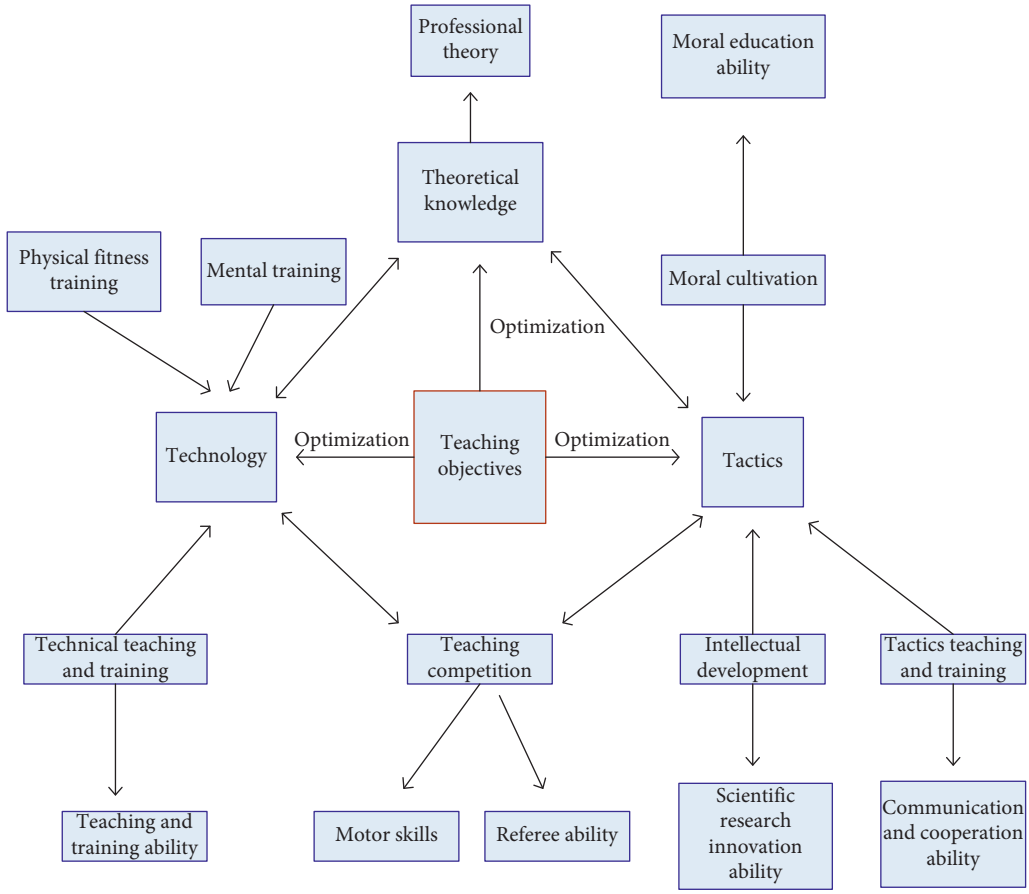

Figure 7: Structure diagram of teaching content optimization of physical education courses.

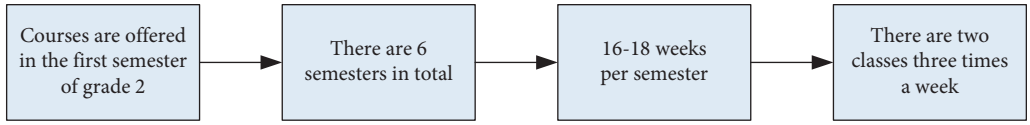

Figure 8: Schematic diagram of class schedule.

integrate theoretical knowledge into the teaching of technical courses, and the ratio of technical courses to theoretical courses should be controlled to 7:1–8:1. On the one hand, the time for students to learn sports technology is guaranteed. On the other hand, it is also beneficial for students to master theoretical knowledge.

5. Discussion

Through the study of relevant knowledge points of literature works, this paper has initially mastered the relevant basic knowledge. It discusses the development of computer information technology and physical education teaching in various colleges and universities. Then it introduces the relevant theories and definitions of physical education content optimization and computer information technology. It analyzes the research method of network computer server cluster in detail. The architecture of the NC server cluster is explained in combination with pictures and texts. Then, experiments and analysis are carried out on the optimization of the teaching content of the specialized courses of physical education. It starts from three aspects: the analysis of the current situation of the teaching content of the physical education major, the optimization of the teaching content, and the optimization of the allocation of the teaching content.

Based on the existing research on computer information technology and content optimization, the article analyzes and summarizes the concepts of physical education, content optimization, and computer information technology. According to the network computer server clustering method, the case design of the teaching content optimization of the specialized courses of physical education is deeply studied. Through the investigation and data analysis of students, teachers, and experts, the effectiveness of the optimization of physical education teaching content can be proved, and the efficiency of students and teachers can be guaranteed.

With the rapid development of computer information technology, it has penetrated into all aspects of people's lives

[23]. For college education, with the help of computer information technology, the information management of teaching can be realized. It effectively manages the safety, hygiene, materials, payment, and other contents of teaching, so as to provide a healthy and comfortable environment for teachers and students. This allows teachers and students to work and study safely and comfortably, thereby promoting the better development of the school.

6. Conclusion

In short, the application of computer technology has become the inevitable development of modern society. The application of computer information technology in college teaching management can greatly improve the efficiency of management and the quality of teaching. The author believes that, in school physical education, a personal dynamic sports file should be established for each student to develop students' physical fitness and skills, as well as the level of participation in sports organized by schools, attitudes in sports classrooms, and activities. And the psychological positive health and adaptability, etc. are fully included in the file management, at the end of the semester. An evaluation grade is given based on the performance of each item in the file. In this way, it can comprehensively check the physical education status of students in the semester and make objective and effective evaluation of students. Physical education teachers should take students' interests and needs as the starting point and emphasize pure imitation, and methods that lack interaction should be less used or discarded. It is necessary to highlight the main role of students, pay attention to individual differences of students, and vigorously promote methods to stimulate students' abilities. It is necessary to improve the participation of students, feel the charm of sports learning in the classroom, and enjoy the happiness brought by sports [24].

Data Availability

No data were used to support this study.

Conflicts of Interest

The author declares that there are no conflicts of interest with any financial organizations regarding the material reported in this manuscript.

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