



The Realization of Intelligent Remote Multimedia Physical Education Teaching System

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Abstract

In the traditional physical education teaching methods need teachers and students two-way interaction, in this era of intelligent life everywhere, teaching has also become novel, remote multimedia teaching extended to physical education, greatly strengthening the teaching methods and teaching concepts, but also widely praised by teachers and students, for teachers and students to bring a convenient teaching method. The Advanced system relies on the CAI computer-aided teaching program to run, and the distance teaching is intelligent, advanced and mature in the current teaching practice, stability and convenience.

Keywords: *Software design; physical education; multimedia distance learning; CAI computer-aided teaching; intelligent.*

1 INTRODUCTION

In traditional physical education teaching, the content of teachers' classes basically adopts the form of offline face-to-face teaching, which requires fixed time and fixed venues for teaching practice, so that it is impossible to adopt intelligent and convenient teaching methods [1]. The intelligent distance multimedia physical education teaching system further improves the disadvantages of offline physical education teaching, and facilitates the use of distance teaching methods for teaching. In this way, teachers and students can be more harmonious with each other, and at the same time, the teacher's teaching process can be more convenient and students can also consolidate their knowledge in their studies [2]. Building a scientific and technologically advanced teaching system and improving the level of physical education are also urgent tasks and main forms of the overall efficiency of the teaching system.

2 THE ORIGINAL INTENTION OF THE DESIGN OF THE DISTANCE LEARNING SYSTEM

The remote multimedia teaching system is suitable for a variety of network environments, campus networks, regional networks, as well as satellite and microwave networks [3]. Its system can also be applied to remote real-time interactive teaching systems such as military,

enterprise, and institutions. This system takes the campus network as the background, and mainly applies multimedia and CAI and artificial intelligence to achieve the realization of intelligent remote multimedia physical education teaching system [4]. Therefore, users need to log in to the system to learn content and digest knowledge, so as to better adapt to the learning environment.

3 THE PROCESS OF IMPLEMENTING THE ADVANCED DISTANCE PHYSICAL EDUCATION TEACHING SYSTEM

The operation of the distance physical education teaching system is more complicated than the teaching of other subjects, and the Advanced system provides students with intelligent, advanced and mature physical education teaching services according to their aptitudes. The Advanced system has a database of information on the status of students' learning that can be queried by parents and teachers [5]. If a student is logged in for the first time and cannot query the student's learning content, they can try to log in to the system to query the learning results. The specific operation of the system is as follows: login system, login for the first time, establish student files, student login, bind teacher courses, display learning materials, enter distance teaching content, (ask questions, answer questions, complete tests) display learning outcomes, complete assignments [6]. This is shown in Figure 1.

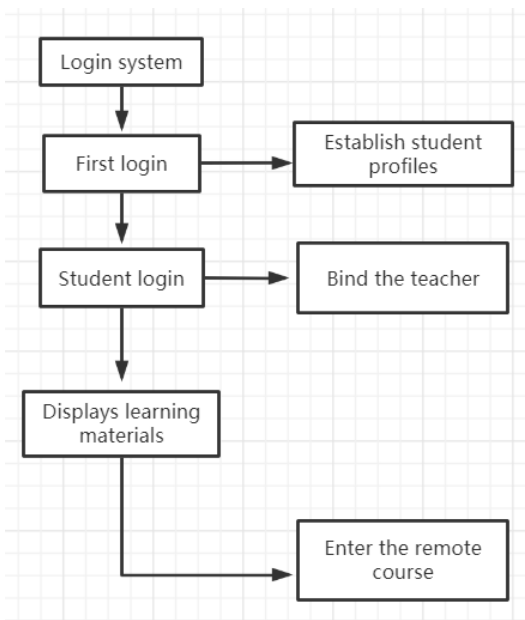


Figure 1: The steps of the distance physical education teaching system

4 CONVENIENCE OF CAI COMPUTER-AIDED TEACHING

In the Advanced system, we also use a large number of artificial intelligence and computer-assisted programs, which can effectively help students and teachers get better teaching and knowledge acquisition in distance learning [7]. The system also sets up the design of the teacher system page and the student version system page, so that teachers can fully understand the state of students during class and the level of input knowledge.

4.1 Flexible and convenient teaching

The system's teaching process is flexible and is not limited by time and place. It can be adjusted according to the time of teachers and students. The flexibility of the teaching method, the teacher and the student to carry out remote face-to-face teaching, even if the student's classroom status is understood, the course content will not be disturbed [8]. The Advanced system can automatically configure the use of network users and CAI courseware, and student users can get the teacher's teaching strategy guidance. The teacher's teaching policy can also be automatically adjusted by binding the student user's learning level high and low learning level.

4.2 Convenience of computer-aided teaching courseware

In the Advanced system, we have added a lot of computer-aided teaching courseware, which can be used by students after the course, if they are unclear and do not understand, they can learn the content of the class again through the courseware, which can effectively and

stabilize the students' knowledge points and fully understand the teaching content. Teachers can also facilitate themselves through computer-aided teaching courseware, and provide student user inquiries through input teaching courseware to further consolidate knowledge points. In the distance physical education system, practice is the best truth. Students can replay the course content by querying the courseware, reinforcing the knowledge points taught by the classroom teacher and previewing the knowledge content of the next lesson [9].

5 THE INTELLIGENT STRUCTURE OF THE SYSTEM OF REMOTE MULTIMEDIA PHYSICAL EDUCATION TEACHING

The Advanced system automatically analyzes the user's behavior and learning knowledge, automatically adjusts the learning strategy, learning strategy, and adjusts the learning content and direction according to the user's selectivity [10]. The Advanced system has no manual intervention, and the system can automatically manage the use of courseware by all users. The advanced system is intelligent, which can effectively track and record the user's learning content and behavior, and automatically store the user's learning notes to facilitate student user input and query. This is shown in Figure 2.

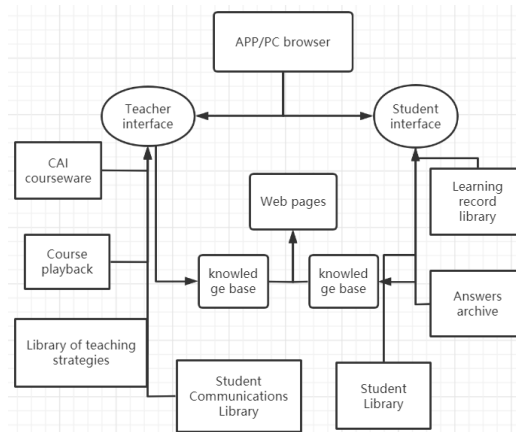


Figure 2: intelligent page system structure

5.1 Architecture of the Advanced system

The system adopts an APP or browser architecture, and teachers and student users can teach through mobile phones or PCs [11]. The system is mainly two larger databases, the teaching information database for the teacher user interface, the student information database for the student user interface, the teaching information database (CAI courseware; knowledge base, course playback; teaching strategy library; binding student user communication library), and the student information database (student database; learning note library; answer file library; knowledge base). The Advanced system is managed by CAI5.0.

5.1.1 Code steps for the Advanced System Software

```
def binary_search(list,item):
    low = 0
    height = len(list) - 1
    while low<=height:
        mid = (low + height) / 2
        guess = list[mid]
        if guess == item:
            return mid
        elif guess < item:
            low = mid+1
        else:
            height = mid-1
    return None

# Define the diagram
graph = dict()
.....

Use the breadth-first algorithm to find
def search(myName,search_name):
    search_deque = deque() # This is a two-ended queue
    (essentially a list) search_deque += graph[myName]
    searched = []
    while search_deque:
        person = search_deque.popleft()
        if person not in searched:
            if person == search_name:
                return True
            else:
                search_deque += graph[person]
                searched.append(person)
    return False
```

5.2 Teaching Information Base

The teaching information database contains five major system courseware mainly include CAI courseware, knowledge base, course playback, teaching strategy library, binding student user communication database, etc [12].

5.3 Knowledge Base

It is a knowledge base and a web server connected to the Advanced system, storing the sports videos entered by the teacher, as well as the physical education courseware and knowledge [13]. The knowledge base is convenient for teachers and students to consult and learn when in doubt, and the knowledge base combines all the knowledge points that are common in sports and the interrelated knowledge content between related sports knowledge points. If the required knowledge content cannot be queried in the APP knowledge base, the knowledge base will find out from the network to find whether there is relevant content in the entire network resource that matches the knowledge points currently searched [14].

5.4 Course playback

Course playback is a course video recorded in distance physical education teaching, which can be consulted and replayed by students when they face questions about the content of the class after class.

5.5 Teaching strategy library

Teaching strategy library is mainly to provide teachers with the central point of various teaching strategies and courseware, and fully understand the teaching objectives and arrange learning plans. Automatic analysis binds the teacher's students to all three levels of conceptual knowledge and applied competencies as well as skill knowledge. It is automatically divided into three levels according to the good and the middle and bad three levels. It will be associated with the computer-aided teaching CAI courseware to form a systematic teaching strategy policy, and the teacher can carry out a teaching style that is more suitable for the student through the student's level [15].

5.6 Student Information Base

The student information database mainly contains the auxiliary system courseware: student database, learning note library and answer file library and knowledge base. The student database is mainly used to record the student's student status, such as name, class, student number, etc.

5.6.1 Study notes library

The Learning Notes Library has a voice input text setting, which can effectively make it easier for students to enter notes in the classroom during physical education teaching. Used to record information dynamically established in a course. The study notes library also contains information on the student's learning situation and learning mastery level. Students are better able to consolidate and grasp knowledge points through notes after class.

5.6.2 Answering the question archive

It is mainly used to save and record each grade of a student's answer test. At the same time, the Advanced system can automatically divide the answer test content of the student's test according to the student's learning situation according to the CAI computer-aided teaching courseware. Obtain students' mastery of knowledge, so as to get a form of evaluation standards, while collecting students' errors in answering questions, summarizing and summarizing the question bank, so that students can re-answer the questions in the answer file to check the gaps and deepen the impression of knowledge points.

6 CONCLUSION

Modern distance education is widely mature, and the use of intelligent distance multimedia physical education teaching system is to further and better enable students to thrive in the learning environment in physical education teaching. At the same time, it also tests the teaching pace of teachers to keep up with the times and keep pace with the times, and improve the interrelated and inseparable relationship between the two main bodies of teachers and students. Stimulate students' interest in learning physical education, while also simplifying the complexity of physical education teaching and perfecting the shortcomings of traditional physical education teaching practices. At the same time, we must also continue to improve the small problems that may occur in the system and continue to follow up and improve, so as to improve the realization of remote multimedia physical education.

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