

Development and Utilization of Network Physical Education Curriculum Resources under the Background of Informationization -- Taking Yoga Courses as an Example

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Abstract: With the continuous development of information technology, education and information technology appear integration trend, information has been gradually applied to the field of physical education curriculum, based on this people's attention to the network physical education curriculum is getting higher and higher. Sports network curriculum is the inevitable trend of the development of physical education under the background of information technology, and is the inevitable requirement for sports discipline to achieve its own breakthrough. The development and utilization of physical education network course resources can effectively promote the reform of physical education, break through the traditional way of physical education, provide a more efficient way for physical education, and to a certain extent, make students grasp the theoretical knowledge of physical education more in-depth. The purpose of this paper is to take the yoga course as an example, to explore the correct way and strategy to realize the development and utilization of sports online curriculum resources, and to promote the development of physical education. This paper firstly summarizes the teaching significance of network yoga course, and then analyzes the network yoga teaching with the Aprior algorithm. On this basis, specific strategies for the development and utilization of network yoga course resources are obtained. The experiments in this paper show that the development and utilization of network yoga course resources is the need of class reform and the development of yoga itself.

1. Introduction

Under the background of informationization, the development and utilization of network courses have been started in all subjects of China, and PE subjects are no exception. In recent years, the application of various information technologies in physical education has been increasing. Yoga courses, as an important part of physical education courses, have also begun to develop and utilize the resources of network yoga courses. Since yoga was introduced into the physical education class for a short time, there are many problems in yoga teaching, such as incomplete teaching system construction and unitary yoga teaching content. The application of informationization in physical education effectively solves these problems and opens up a new way for the development of physical education in China.

At present, physical education yoga teaching with the help of physical education network curriculum, to achieve the organic combination of network and teaching. The sharing of network resources not only breaks the time-space limitation of traditional yoga teaching, but also facilitates teachers to make scientific and reasonable teaching plans according to the actual situation of students, so as to meet the individual needs of students [1]. This effectively makes up for the shortcomings in the traditional yoga teaching, so that the quality of yoga teaching has been significantly improved. At present, scholars at home and abroad have conducted a series of researches on the construction of online courses and obtained certain theoretical results. Due to the early start of network technology in foreign countries, information technology has been widely used in various subjects, various network course resources are relatively rich, network course teaching has also achieved obvious results. All these provide certain reference significance for the

development and utilization of online courses in China [2-3]. The construction of relevant online courses in China is late, but the development speed is fast. The national education department and relevant scholars have also conducted in-depth research on the construction of China's online curriculum, mainly studying the current situation of China's online curriculum construction, the problems encountered in the development of sports online curriculum and the development of network technology. However, through the collation of relevant materials, it can be found that there are few studies related to the construction of network course resources for physical education, a specific discipline, and even fewer studies on network yoga [4-5].

To sum up, there is still a big theoretical gap in the research on the development and utilization of online sports curriculum resources in China, which needs to be further deepened [6]. To speed up our country sports network curriculum resources development and utilization, especially the construction of network yoga classes, this paper to a certain stage of the students and teachers as the main research object, under the background of informatization network sports curriculum resources development and utilization as the research object, first of all network has carried on the summary of related yoga teaching significance, then analyses the network yoga teaching with the aid of Apriori algorithm, based on the obtained network related yoga curriculum resources development and utilization of specific strategy [7-8]. On the one hand, it promotes the extensive application of information technology in physical education curriculum and promotes the development and utilization of physical education network curriculum resources. On the other hand, it lays a certain theoretical foundation for future relevant researches [9].

2. Method

2.1 Online Yoga Courses

Yoga essentially belongs to a kind of fitness activities, in the study of yoga can relax the mind to obtain life wisdom. In recent years, due to the increasing psychological pressure of students, various psychological problems began to appear, and yoga classes began to be gradually introduced into physical education. The process of yoga learning is the process of promoting students' physical and mental development, which can effectively relieve students' inner pressure and play a role in cultivating their sentiment. In order to effectively play the role of yoga, it is necessary to give accurate guidance to students' yoga learning and guide them to learn theoretical knowledge and practical skills of yoga [10-11]. However, the conventional yoga teaching is severely restricted by time and space, which hinders the improvement of yoga teaching efficiency. The continuous development of information technology has promoted the development and utilization of network yoga courses, which has expanded the means and approaches of traditional yoga teaching. On the one hand, network yoga courses can meet the needs of different students to learn yoga; On the other hand, the abundant network yoga course resources can provide students with intuitive learning materials, constantly deepen students' understanding of yoga, effectively stimulate students' interest in learning yoga, and constantly improve students' learning effect. In general, the development and utilization of online yoga course resources has promoted the reform and development of yoga teaching, provided a new way of thinking for yoga teaching, and has extremely profound teaching significance [12-13].

2.2 Apriori Algorithm

Apriori algorithm is one of the common data mining algorithms, whose function is to carry out in-depth mining between related data. Based on the candidate set, the frequent item set is obtained by means of data mining, and the frequent item set is detected. Through in-depth mining and analysis of data relevance, we can explore the specific role of data in decision-making. Due to the development of sports online courses and the design of various types of data processing, the Apriori algorithm must be used for data correlation analysis. The specific algorithm formula is as follows:

$$Apriori_j = \sum_{i=1}^k \frac{set_i}{set_{max}} \quad (1)$$

Where j represents the JTH attribute set, k represents the number of contained attributes, Set_i represents the support of attributes, and Set_{max} represents the maximum support in the attribute list. On this basis, relevant scholars have improved the Apriori algorithm to adapt it to the data characteristics of sports network course development, and the improved algorithm operates with the help of vectors. The operation practice shows that the overall operation effect of the improved algorithm has been greatly improved. Relevant departments can develop and utilize the sports network course resources by virtue of the relevance of data mining. The improved formula is as follows:

$$Apriori_j = \sum_{i=1}^k \frac{set_i}{set_{max}} + cw \quad (2)$$

In the formula, c and w represent error rate and data loss probability respectively. Adding these two data into the algorithm can maximize the development and utilization of online course resources.

3. Analysis Experiment of Network Yoga Courses

The first step is the establishment of experimental objects and experimental methods. Students and physical education teachers at the university stage are the main objects of investigation, among which the development and utilization of network physical education curriculum resources under the background of informatization is the research object. The experimental methods of this paper mainly include documentary method, interview method, analysis method and questionnaire survey method. Read the literature about the development of online physical education courses, and sort out the relevant research conclusions, laying a theoretical foundation for the analysis and research of online yoga courses; A total of 20 experts and physical education teachers were interviewed to discuss the main problems existing in the current network yoga course construction and put forward relevant Suggestions. According to the research content of the students to carry out a questionnaire survey, the survey content related to the construction and development of the network yoga curriculum, as well as the development of the network yoga curriculum to the teaching breakthrough problem; In the whole process of research, all kinds of data are analyzed and sorted in detail by means of analysis method, and the research results are obtained.

Second, sample grouping experiment; Take a sample of 60 students and divide them equally into two groups. One group is a traditional yoga teaching group, and the other is a network yoga group. Two groups of students were given an experiment to test the success of yoga teaching a week later. The test includes learning enthusiasm and interest, efficiency, actual learning results and other aspects of yoga.

The third step is the analysis and arrangement of experimental data. Aprior algorithm is used to calculate the experimental data, and relevant tools are used to draw the data table, and relevant conclusions are drawn on the basis of data analysis.

4. Discuss

4.1 Experimental Results and Analysis

Through the above experiments and Aprior algorithm, we can draw a conclusion: compared with traditional yoga teaching, network yoga class shows great advantages and effectively improves the efficiency of yoga teaching. At the same time, there are still a series of problems to be solved in the development and utilization of network yoga course resources in China. The specific experimental data are shown in table 1 and figure 1. The data in the chart are the results of the author's experimental arrangement.

Table 1. Comparison data of traditional yoga teaching and network yoga

Name	Interest in learning	Learning effect	Learning style	Interactive
Traditional yoga teaching	54.17%	71.34%	Single	Bad
Network yoga teaching	82.47%	91.24%	Various	Good
Composite scores	93.21			
*Data came from the in-depth analysis of financial data in the experiment				

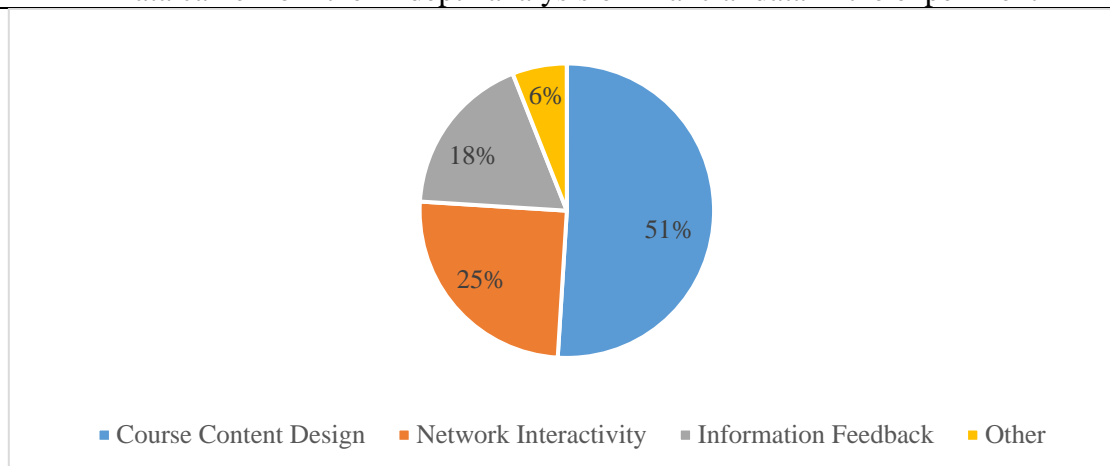


Figure 1. Main problems existing in the development of physical education online course resources

It can be seen from the data in table 1 that traditional yoga teaching is not as good as network yoga course teaching in all aspects. In terms of teaching effect, the teaching effect of network yoga course exceeds that of traditional yoga course by more than 20%, and network yoga course provides a variety of teaching methods for yoga teaching, realizing the transformation of yoga teaching mode. It can be seen from the figure that there are still many problems in the development of physical education curriculum, which are mainly reflected in the design of network teaching content, the display of network interaction and the feedback of information. Therefore, this paper focuses on solving these problems in the development and design of physical education network curriculum.

4.2 Strategies for the Development and Utilization of Online Yoga Course Resources

(1) The general idea of development and utilization

The key to the development and utilization of network yoga course resources is to change the concept of yoga teaching, focus on students' dominant position in yoga learning, and strive to achieve the goal of yoga teaching by improving teaching effect. Therefore, we must pay attention to the following aspects: first, we should pay attention to students' learning, build highly Shared yoga course resources, and try to guide students to participate in the course resources construction; Second, constantly enrich the teaching methods, change the single teaching means to enhance students' enthusiasm for learning yoga; Third, pay attention to the factor of "people". Developers of online yoga course resources should consider student activities, strengthen activity design, promote communication and discussion between teachers and students, and achieve timely feedback of teaching effect. On the basis of the general idea, the effective development of network yoga courses can be formed, which is conducive to the breakthrough of traditional yoga teaching methods.

(2) Pay attention to the design of network yoga teaching content

The development and utilization of network yoga course resources must take into account various principles, such as scientificity and operability, etc. Only on this basis can the design of network yoga teaching content ensure the effect of network yoga course. In the teaching design of the network yoga course, we should try to make the teaching content meet the personalized needs of students, conduct stratified teaching according to the actual situation of students, and try to guide students to carry out yoga exercise and learning scientifically and effectively. In addition, both theory and practice should be taken into account when designing the content of network yoga

teaching, so as to train students' ability to solve practical problems on the basis of consolidating theories and provide guarantee for the smooth progress of teaching. In addition, when carrying out yoga teaching with the help of information technology, it is necessary to deal with the relationship between teachers' leading and students' main body, so as to achieve the balance between the two. Once the balance is broken, it is easy to find that students' higher freedom is difficult to control in class, which is not conducive to the realization of teaching objectives.

(3) Give full play to the interactive characteristics of the network

The development and utilization of network yoga course resources is conducive to the effective integration of traditional teaching methods and information technology, so as to promote the development of students' thinking ability, stimulate students' interest in learning yoga, and most importantly, greatly improve the effect of yoga learning. In order to maximize the learning efficiency of yoga, it is necessary to give full play to the sharing and interaction characteristics of the network and guide students to strengthen communication. For example, with the help of PowerPoint tool, hyperlinks about yoga learning can be added in text or pictures to facilitate students' learning memory and independent learning in and out of class.

5. Conclusion

To sum up, the development and utilization of sports online course resources promotes the overall teaching and learning efficiency of physical education courses, which is the inevitable trend of the development of physical education courses in a long period of time in the future. However, we must realize that there are still many problems in the development of online physical education resources in our country. The development and utilization of online curriculum resources is a process requiring long-term efforts, which involves the transformation of educational philosophy, teaching content, teaching methods and other aspects, and requires joint efforts from all sides.

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