

Reform and Exploration on Experimental Teaching of Physical Education Major in Colleges and Universities

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Abstract: In the era of rapid development of sports science research and continuous advancement of sports research methods and concepts, colleges and universities carrying the mission of cultivating specialized sports personnel are relatively backward in experimental teaching mode and reform measures. From the initially carried out students' comprehensive experimental process and results [1], it is reflected that as long as there are policy-based incentive measures, there are institutional guarantees for opening up laboratories, and the content of experimental teaching is constantly updated to make it more relevant to sports practice. The experimental teaching reform is can get students in sports subjects to respond. The establishment of innovative comprehensive experimental courses in college sports disciplines is a feasible idea for experimental teaching reform.

1. Introduction

With the development of sports science research and continuous improvement, the concept of sports is no longer the traditional physical training and blind training, but the scientific research and analysis of human life mechanisms, as well as various modern test monitoring methods. To seek more scientific and reasonable methods of physical exercise and further explore the potential of human sports. By setting up some comprehensive and design experiments, we will involve as many hot issues as possible in today's sports science fields and cultivate students' innovative thinking and solidarity and cooperation spirit [2].

2. Status Quo of Experimental Teaching of Physical Education in Colleges and Universities

2.1 Repeated experiment items, outdated content, rigid form

For many years, there have been traditional basic theoretical courses such as exercise physiology, sports biochemistry, biomechanics, sports health care, and anthropometry and evaluation, which have provided experimental teaching courses in various specialties' of the sports discipline. The current experimental course content is based on confirmatory basic experiments and has not been updated over the years. By conducting a survey on the time and frequency of extracurricular physical exercises conducted by our college randomly selected 579 students, we can get an overall picture of the development of the sports experiment program in our school (the results are shown in Table 1 and Table 2. Obviously, under the existing fixed-experimental, teacher-based,

fixed-experiment teaching model, it is difficult for students to have more training in experimental class in their hands-on ability, operating skills, and ability to analyze practical problems.

Tab.1 Hour of Extracurricular Physical Exercises for Students of Our University

Exercise time(min)	<30	30-60	>60	X2	P
Number of people	319	169	91	232.624	0.000
Percentage(%)	55.1	29.2	15.7		

Tab.2 Table of Exercise Frequency of Students in Our School (N=579)

Exercise frequency (times/weeks)	0	1	2	3	>3	X2	P
Number of people	24	298	128	102	27	184.796	0.000
Percentage(%)	4.1	51.4	22.1	17.6	4.6		

2.2 The backward experimental teaching system is not conducive to the enthusiasm of teaching and learning

In the framework of experiment classes attached to theoretical courses, the current experimental courses are arranged in the total class hours of their theoretical courses, limited by the total number of hours, and the experimental time is obviously insufficient. Moreover, an experiment usually needs to be divided into two or three small classes. In addition, the amount of work in the experimental class is far greater than the teacher's theoretical class [2]. Therefore, for the teacher, taking on the experimental class increases their workload, but this kind of situation In terms of distribution, it is often not reflected. Therefore, the teachers will not be too high in adding experimental content, adding experimental content, and reforming the experimental teaching mode. They will not receive the policy support and encouragement. Experimental teaching can only follow the original model.

2.3 Lack of policy guidance for design and innovative experiments

The policy measures for the reform of experimental teaching in sports disciplines appear to be lagging behind. This is related to people's understanding of the inertia of sports disciplines for a long time. It is believed that the level of physical education teaching is mainly reflected in the level of student sports technology and reflected in the results of various competitions. In terms of graduate student recommendation system and various incentive measures with incentive effect, it is mainly based on the student's theoretical course performance. It is impossible for the students to have a solid experimental learning foundation and the potential for innovative research is not reflected in the study [3]. Because of the lack of incentives for experimental skills learning, the experimental teaching pattern of sports subjects has not been significantly improved, and the recognition of integrated design and innovative experiments has not been enough, resulting in the long-term maintenance of experimental teaching of sports subjects in a relatively backward, obsolete, In a conservative state.

3. Reform attempts and effects analysis

In order to advance reforms in the field of experimental teaching of sports subjects, some colleges and universities have progressively employed cross-professional comprehensive experiments in their third-year students in sports human sciences and physical education. After the formation of the experimental group, we designed the experimental program based on the

experimental topics, clearly defined the experimental division of labor, consulted relevant data separately, and focused on familiarizing ourselves with the experimental process. Based on this, we jointly developed specific experimental plans and procedures. And use the card square test formula to analyze the results of the reform attempt:

$$\chi^2 = \sum \frac{(f_0 - f_e)^2}{f_e} \sim \chi^2 \quad (1)$$

This is the original formula of the chi-square test, where the greater the f_e ($f_e \geq 5$), the better the approximation. Obviously the greater the difference between f_0 and f_e , the larger the chi-squared value; the smaller the difference between f_0 and f_e , the smaller the chi-squared value; hence it can be used to represent the degree of difference between f_0 and f_e . According to this formula, as can be seen from Table 1 and Table 2 above, 55.1% of the student population in our school each exercised less than 30 minutes, and after the author's investigation before the investigation of the card square test for different exercise time $X^2 = 232.624$, which has a significant probability of zero. There is a significant difference, so it is obviously the largest number of people who exercise less than thirty minutes. This also shows that the overall training time of high school students in RI Zhao City is relatively small.

4. Tentative Ideas of Experimental Teaching Reform of College Physical Education

4.1 Update and integrate experimental teaching content, establish a new experimental teaching system

In the face of the new realities of new theories and research methods in the field of sports science today, the experimental teaching of colleges and universities in the concept, hardware and software environment and reform measures should also actively keep up with this change, and actively adapt to the scientific progress and various types of sports science. The demand for sports personnel training in sports jobs should not be complacent and self-styled. It still maintains the original experimental teaching mode and rhythm and does not change anything. At present, every effort should be made to improve the experimental teaching conditions. On the basis of increasing investment in experimental equipment, it is necessary to reintegrate existing experimental teaching courses in sports subjects.

4.2 Combined with different professional needs, increase professional experiment

The setting of physical education experimental teaching courses in colleges and universities has always been based on basic course experiments, and more emphasis on theoretical verification. The professional experiments that are more closely related to the professional sports practice and professional capability development are almost blank, such as the dynamics measurement and mechanical analysis of various sports and technical movements, the design and monitoring of athletes' physical fitness training, the simulation of modern competitions, modern timing, Scores, distance measurement techniques, etc., can only be theoretically described and introduced by teachers in related courses in different disciplines, and there is no relevant experimental teaching content[3].

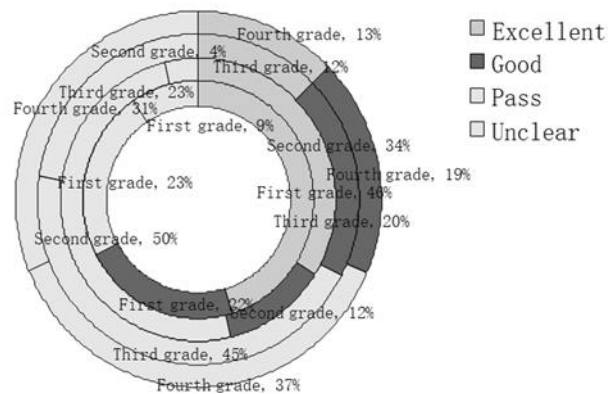


Fig.1 Percentage distribution of students' physical measurements in various years

4.3 Experiment class is set up separately

In order to further embody the importance of experimental teaching in the process of personnel training in colleges and universities and maximize the enthusiasm and initiative of teachers and students in experimental teaching, a student can be set up in the third and fourth grades of the student to obtain credits and guide the teacher's workload. The "Comprehensive Experiment Class". The main purpose of establishing this course is to encourage students to actively participate in the practice of innovative and comprehensive experiments through policy guidance. Students can choose experimental topics in the lab or a tutor-designated topic, or they can self-report the topic.

4.4 Implementing the Open Laboratory System

Students should be encouraged to actively participate in experimental exploration activities. Practical operations and overall comprehensive capabilities should be improved in the experimental process. If the idea of establishing a "comprehensive experiment course" is to be operable, it is necessary to truly implement the laboratory opening system and improve laboratory opening up. The application procedures, staffing, funding sources and a series of management, and cannot just stop at the verbal [2]. Because only the opening of the laboratory has become a normal state, a system can ensure that students can arrange their own time for experimental activities, ensure the guidance and management of students during the experimental process, and ensure the smooth flow of experimental funding.

5. Summary

Experimental teaching is a very important part of teaching work in colleges and universities. It plays an irreplaceable role in cultivating students' ability to operate, analysis and problem-solving ability, scientific and rigorous thinking and it is also an effective way to cultivate students' innovative ability. Therefore, how to reform the experimental teaching mode of physical education subjects to make it more conducive to the improvement of students' overall quality and the development of their abilities is a subject worthy of long-term attention by experimental workers and related educators.

References

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