

The Influence of Physical Education Curriculum Reform on Students' Physical Fitness: Taking Guangdong University of Foreign Studies as an Example

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Abstract: The purpose of this study is to deeply explore the impact of physical education (PE) curriculum reform on students' PE test results. By comparing the data of students' PE tests before and after the reform, analyzing the results of the questionnaire survey, and interviewing teachers and students, this paper reveals the significant effect of curriculum reform in improving students' PE test results. It is found that the curriculum reform effectively stimulates students' interest and participation in sports through optimizing teaching content, innovating teaching methods, improving evaluation systems, and increasing extracurricular sports activities, thus improving students' physical fitness and physical test scores. This study provides an empirical basis and suggestions for further promoting PE curriculum reform.

Keywords: Physical education curriculum reform; Physical test scores; Students' physical quality; Teaching method innovation

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1. Introduction

With the increasing attention of society to the healthy development of teenagers' physical and mental health, physical education plays an increasingly prominent role in school education ^[1]. As a key measure to improve the quality of physical education (PE), the effect of PE curriculum reform has attracted much attention. As one of the important indicators to measure students' physical fitness and physical learning results, it is of great practical significance to study the influence of PE curriculum reform on them ^[2]. Through an in-depth analysis of the relationship between the two, it can provide powerful theoretical support and practical guidance for the optimization of physical education, help cultivate students' good sports habits and healthy lifestyles, and promote students' all-round development.

2. Background and objectives of PE curriculum reform

2.1. Background

The traditional physical education curriculum has gradually exposed some problems in teaching content, methods, and evaluation, and it is difficult to meet the diversified sports needs of students and the requirements of modern society for the physical quality of talents ^[3]. The teaching content is often limited to a few traditional sports, lacking novelty and interest; the teaching method is relatively unitary, mainly lecturing and demonstrating by teachers, and the subject status of students is not fully reflected ^[4,5]. The evaluation system overemphasizes the final evaluation and neglects students' efforts and progress in the learning process. These problems lead to some students' lack of interest in physical education courses, low participation, and limited physical quality development ^[6].

2.2. Objectives

The reform of the physical education curriculum aims to solve the problems existing in traditional physical education curriculum and build a physical education curriculum system that is more in line with the characteristics and needs of students' physical and mental development ^[7]. The specific goals include enriching the teaching content, introducing diversified sports items, stimulating students' interest in sports; innovating teaching methods, advocating independent, cooperative, and inquiry-based learning, and improving students' learning enthusiasm and initiative; improving the evaluation system and adopting diversified evaluation methods to evaluate students' physical education learning results comprehensively and objectively; strengthening the organization and guidance of extracurricular sports activities, cultivating students' physical exercise habits, and promoting the overall improvement of students' physical quality ^[8].

3. Main measures of PE curriculum reform

3.1. Reform of teaching content

3.1.1. Project diversification

On the basis of retaining some traditional sports, some fashionable and popular sports with high fitness value have been added, such as cheerleading, roller skating, orienteering, Frisbee, and so on. These projects not only enrich the teaching content but also meet the interests and personality needs of different students, attracting more students to actively participate in the physical education curriculum.

3.1.2. Content modularization

The content of physical education is classified and integrated according to different sports, physical fitness, and health knowledge modules, which is convenient for students to choose learning content according to their interests and strengths, and conducive to teachers to carry out targeted teaching activities and improve teaching effects. For example, we can set up a basketball special module, endurance quality improvement module, sports injury prevention and first aid knowledge module.

3.2. Improvement of the evaluation system

3.2.1. Combination of process evaluation and final evaluation

In addition to the traditional final exam results, the process evaluation indicators such as classroom performance, attendance, homework completion, group cooperation ability, and progress rate are added to comprehensively and objectively evaluate students' physical education learning process and effort level.

For example, students' active participation in class, initiative to ask questions, help classmates, and other behaviors can get corresponding process evaluation points.

3.2.2. Diversified evaluation subjects

We change the former single model of teacher evaluation of students, and introduce student self-evaluation and mutual evaluation mechanism. In self-evaluation, students can better understand their own learning status and progress, and learn from each other in the process of mutual evaluation, so as to improve the objectivity and fairness of evaluation. For example, after the sports skill demonstration activity, students first conduct self-evaluation, then the members of the group evaluate each other, and the teacher gives the final score based on the evaluation of all parties.

3.3. Extracurricular physical exercise

3.3.1. Sports association construction

The school has set up various sports clubs, such as basketball club, badminton club, table tennis club, martial arts club, dance club, etc., to provide students with more diversified extracurricular sports exercise platforms. The club regularly organizes activities and competitions, guided by professional teachers or sports backbone, which attracts many students to participate in and cultivates students' special sports skills and team spirit.

3.3.2. Campus sports competitions

A variety of campus sports competitions can be organized, such as sports meetings, basketball games, football games, jump rope competitions, tug of war, etc., to create a strong campus sports atmosphere. These competitions not only provide students with the opportunity to show themselves, but also stimulate their sense of competition and collective honor, and encourage them to more actively participate in extracurricular sports and improve their physical fitness.

4. Research methods

4.1. Experimental research method

Two classes were selected as the research subjects, one class as the experimental group implementing the PE curriculum reform, and the other class as the control group adopting the traditional PE curriculum teaching mode. Before the experiment, students of the same grade in the two schools were tested as pre-test results. After a semester of teaching experiment, the students were tested again with the same content of physical education as post-test results. The influence of PE curriculum reform on students' PE test results was analyzed by comparing the difference between the experimental group and the control group.

4.2. Questionnaire survey method

Questionnaires were designed for students and PE teachers to investigate students' interest, participation, learning gains, satisfaction with the curriculum reform, teachers' understanding of the curriculum reform, implementation, and existing problems. A total of 2266 questionnaires were issued to students, and 2266 valid questionnaires were recovered; 112 teacher questionnaires were distributed and 12 valid questionnaires were collected. SPSS was used to analyze the questionnaire data in order to understand the implementation effect and existing problems of PE curriculum reform.

4.3. Interview method

Some students and PE teachers were selected for interviews to get an in-depth understanding of their views, feelings, and suggestions on PE curriculum reform. The content of the interview mainly includes the recognition of the reform measures, the difficulties and problems encountered in the reform process, and the observation of the changes in students' physical learning and physical fitness. Through the collation and analysis of the interview data, the results of the questionnaire survey are further supplemented and improved to provide more abundant and in-depth information for the research.

5. Results and analysis

5.1. Comparative analysis of physical education test results

5.1.1. Comparison of pre-test results between experimental group and control group

Independent sample *t*-test was conducted on the pre-test physical education test scores of the students in the experimental group and the control group. The results showed that there were no significant differences in various test indicators between the two groups of students ($P > 0.05$), indicating that the physical fitness level of the students in the two schools was basically similar before the experiment, which provided comparability for the follow-up experimental research.

5.1.2. Comparison of post-test results between experimental group and control group

After a semester of teaching experiments, the scores of the two groups of students in the post-test physical education test were assessed. The results showed that the scores of the experimental group were significantly better than those of the control group ($P < 0.05$). Specifically, in endurance running, the experimental group improved their performance by an average of 3.7 seconds over the control group. In the standing long jump, the average score of the experimental group increased by 5.8 cm compared with that of the control group. In the seated forward bending project, the experimental group improved the average score by 1.9 cm compared with the control group. This fully shows that the reform of physical education curriculum has a significant promoting effect on the improvement of students' physical education test results.

5.2. Analysis of questionnaire survey results

5.2.1. Student questionnaire results

- (1) Interest in physical education courses: More than 73.4% of students expressed more interest in the reformed physical education courses, believing that the course content is more diversified and the teaching methods are more vivid and interesting. Among them, students interested in new sports such as physical fitness and darts accounted for 43.2%, indicating that the reform of the course content effectively attracted students' attention and stimulated their interest in learning.
- (2) Class participation: 88.2% of students think that their participation in class has been significantly improved, mainly because methods such as group cooperative learning and gamification teaching give them more opportunities to participate in sports activities and interact with classmates, which enhances their enthusiasm and initiative in learning.
- (3) Learning gains: 90.3% of the students said that they had improved sports skills, physical fitness, and teamwork ability to varying degrees. For example, by participating in basketball-specific modules and group competitions, students not only improve their basketball skills but also learn how to cooperate with teammates and cultivate team spirit.

- (4) Satisfaction with the curriculum reform: 97.3% of the students are satisfied or very satisfied with the PE curriculum reform, believing that the reformed PE curriculum is more in line with their needs and expectations, and is of great help to their physical and mental health development.

5.2.2. Teacher questionnaire results

- (1) Understanding of curriculum reform: Most teachers (91.67%) believe that PE curriculum reform is necessary and timely, and can better adapt to the development of the times and the changes in students' needs. They have a clear understanding of the goals and concepts of the reform and expressed their willingness to actively participate in and promote the implementation of the reform.
- (2) Implementation of the reform: In terms of teaching content reform, 75% of teachers said that they had added new sports items in accordance with the requirements and carried out modular integration of teaching content, but there were still some difficulties in the allocation of teaching resources, such as insufficient equipment for some emerging sports items. In terms of teaching method innovation, 58.33% of teachers tried to use new methods such as situational teaching method, group cooperative learning method, and gamification teaching method. However, in the actual operation process, they found that the organization and management of group cooperative learning need to be further strengthened to ensure that every student can fully participate in and benefit from it. In terms of the improvement of the evaluation system, 83.33% of teachers have begun to use the combination of process evaluation and final evaluation, but further exploration and improvement are needed in the elaboration and quantification of evaluation indicators.
- (3) Existing problems: The main problems reported by teachers include the shortage of teaching time and the difficulty in fully carrying out various reform measures. The professional training of PE teachers is insufficient and there are difficulties in the teaching of some new PE projects. Schools need to strengthen their support for the reform of physical education curriculum, such as the construction of venues and facilities and the investment of teaching resources.

5.3. Analysis of interview results

5.3.1. Student interview

Students generally report that the reformed PE curriculum is more interesting and challenging. For example, a student involved in the basketball club said: "Before this, physical education class involved running, doing exercises, very boring. Now there is a basketball club, I can play and train with students who like basketball, and I can also participate in competitions. I feel that my basketball skills have improved a lot, and my physical fitness has become better." Another student mentioned that group cooperative learning allowed them to learn how to get along and cooperate with their classmates, "In the process of completing the gymnastics movement arrangement in the group, each of us gave suggestions and helped each other, and finally not only completed the beautiful movement display but also enhanced the friendship between each other."

5.3.2. Teacher interview

The teachers believe that PE curriculum reform has an obvious role in promoting students' physical learning and physical quality improvement, but there are some difficulties in the implementation process. A physical education teacher said, "The situational teaching method can indeed improve students' interest and enthusiasm in learning, but it takes a lot of time and energy to prepare props and design scenes when

creating situations, and it also requires teachers' classroom organization ability." Another teacher mentioned that although the reform of the evaluation system is more scientific and reasonable, in practice, the records and statistics of procedural evaluation are cumbersome, and evaluation methods and tools need to be further optimized.

6. Conclusion and suggestions

6.1. Conclusion

Through the methods of experimental research, questionnaire surveys, and interviews, this study has conducted a comprehensive and in-depth discussion on the influence of PE curriculum reform on students' PE test results. The results show that PE curriculum reform has achieved remarkable results in improving students' PE test scores. Through the diversification and modularization of teaching content, the innovation of teaching methods, the improvement of evaluation systems, and the expansion of extracurricular sports activities, the reformed PE curriculum has effectively stimulated students' sports interest and participation, enhanced students' sports skills and physical quality, and thus promoted the improvement of students' physical test results. At the same time, the research also found some problems in the implementation of curriculum reform, such as insufficient teaching resources, inadequate teacher professional training, poor evaluation methods, etc. These problems need to be solved in the future reform practice.

6.2. Suggestions

6.2.1. Continuously optimizing teaching content

According to students' interests and sports development needs, we need to further explore and introduce more new and interesting sports items with high fitness value, and constantly enrich the teaching content. At the same time, the innovation and transformation of traditional sports should be strengthened to make them more in line with modern students' aesthetic and sports characteristics. In addition, we should arrange the order and difficulty of teaching content reasonably, pay attention to the connection and complementarity between different items, and build a more scientific and reasonable physical education curriculum content system.

6.2.2. Strengthening teacher training and professional development

In view of the new demands of PE curriculum reform on teachers, schools and education departments should strengthen the training of PE teachers. They should organize and carry out various professional training activities, such as teaching skills training of emerging sports, teaching method innovation training, evaluation system application training, etc., to improve teachers' professional quality and teaching ability. Teachers are encouraged to carry out teaching research and practical exploration, constantly summarize experience and lessons, innovate teaching methods and means, and improve the quality of physical education.

6.2.3. Improving teaching resource allocation

Schools should increase the investment in PE teaching resources to ensure the smooth implementation of PE curriculum reform. According to the needs of new sports and teaching activities, it is equipped with sufficient sports equipment and equipment and improved construction of sports facilities, providing students with a good sports learning and exercise environment. At the same time, we strengthen the management and maintenance of physical education teaching resources, improve the utilization rate of resources, and ensure

the sustainable development of resources.

6.2.4. Further optimizing the evaluation system

On the basis of the existing evaluation system, the evaluation index and method are further optimized to make it more scientific, reasonable, and easy to operate. We refine the process evaluation indicators, clarify the evaluation criteria and weights of each indicator, and ensure that the evaluation results can truly reflect the learning process and effort of students. At the same time, we make full use of modern information technology means, such as online learning platforms, sports bracelets, etc., for real-time monitoring and recording of students' physical learning process and physical fitness data to provide more objective and accurate data support for evaluation.

6.2.5. Strengthening the organization and guidance of extracurricular sports activities

We should strengthen the organization and management of extracurricular sports activities, formulate perfect extracurricular sports plans and systems, and ensure the orderly development of activities. We will increase support for sports associations and provide professional teachers and necessary funds for activities.

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Disclosure statement

The authors declare no conflict of interest.

References

- [1] Zhou J, 2014, Experiment on the Effect of Exercise Intervention on the Physical Fitness of High School Students. *China Educational Technology and Equipment*, 2014(11): 137–138.
- [2] Ma M, Yuan J, 2015, Progress in the Research on Physical Health Intervention of Students in Foreign Schools. *Chinese School Physical Education (Higher Education)*, 2(02): 41–44.
- [3] Ni L, Yu K, 2015, The Evolution and Development of Physical Fitness Test for American and Japanese Students. *Zhejiang Sports Science*, 37(01): 56–60.
- [4] Guo J, 2020, Exploration on the Reform of Physical Education Content and Methods in Primary and Secondary Schools. *Contemporary Sports Science and Technology*, 10(20): 1–2 + 5.
- [5] Zhou Y, 2018, The Application of Sports Games in Physical Education Teaching in Primary and Secondary Schools. *Leisure*, 2018(12): 230.
- [6] Jin Z, 2018, Research on the Reform Method of Physical Education Teaching Mode in Primary and Secondary Schools. *Contemporary Sports Science and Technology*, 8(28): 98 + 100.
- [7] Gao C, Fan X, Lin W, 2017, Research on Improving Students' Physical Quality in Physical Education in Primary

and Secondary Schools, Beijing Zhongjiao Zhichuang Information Technology Research Institute. Research on the Effectiveness of Classroom Teaching Methods and Means under the Background of New Curriculum Reform Results Collection (Volume VII), 9.

- [8] Cui N, Wang Z, 2014, Investigation and Analysis on the Changes of College Students' Extracurricular Physical Activities and Physical Quality—Taking Sanjiang University as an Example. Sports Science and Technology Literature Bulletin, 22(03): 99–101.

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