

# *Feasibility Study on Introducing Dutch Ball Sports in Applied College Physical Education*

Wenfu Luo

*Yunnan Technology and Business College, Yunnan, China, 651700*

**Keywords:** ball sports; physical quality; applied university; feasibility

**Abstract:** On October 25, 2016, the Central Committee of the Communist Party of China and the State Council issued the "Outline for the "Healthy China 2030" Plan", which stated that the implementation of the Youth Sports Promotion Program, the cultivation of young people's sports hobbies, and the basic realization of adolescents' mastery of more than one sport. This paper conducts an empirical study on the influence of Dutch sports on the physical quality of college students through literature research, experimental methods and other research methods. The results show that ball sports can effectively improve the body's physical quality, especially the ability of women to run fast in short-term speed, aerobic work ability and ventilator function.

## 1. Introduction

In this context, as a higher education institution, we should actively enhance our sense of responsibility and sensitivity to the national strategy, and strive to fulfill the mission and responsibility of high-quality personnel training with the goal of "achieve the standard and strive for excellence and strong physical fitness." The unique spiritual connotation and operation mode play an important intermediary transformation role in improving the quality of life, shaping the moral character and gentleman's grace of the participants, establishing a bridge of communication between the opposite sexes, and fostering the spirit of reform<sup>[1]</sup>.

## 2. Research content and research methods

### 2.1 Research content

Through the empirical research on the college ball course, this paper studies its effect on the physical quality of college students as the research content of this paper.

### 2.2 Research methods

#### 2.2.1 Documentary Law

Find a large number of articles and books related to Dutch sports, understand the technical and tactical characteristics of the Dutch sports and the development status at home and abroad, and provide theoretical basis for this research.

### 2.2.2 Experimental method

Two students in the public semester of the spring semester of a university in 2017 were selected as the experimental subjects. One lotus class was used as the experimental class, and the other basketball class was used as the control class. There were 40 students in each class (20 male and female students respectively). Control of experimental conditions: In order to ensure that the physical fitness of the two classes of students is tested under the principle of equilibrium, this study controls the relevant variables (independent and dependent variables) and independent variables. The content is as follows. First, according to the "Sports Measurement and Evaluation" compiled by Beijing Sport University Press, the physical quality test is conducted on the students in the experimental class and the control class before the experiment. The physical quality test is conducted on the male and female students (See Table 1 and Table 2), the two classes of students passed the test ( $p>0.05$ ), belonging to the homogenous object, no statistical significance, using the Fourier formula to statistically analyse the experimental data:

$$f(x) = a_0 + \sum_{n=1}^{\infty} \left( a_n \cos \frac{n\pi x}{L} + b_n \sin \frac{n\pi x}{L} \right) \quad (1)$$

As shown in the above formula, the control of experimental error: In the course of teaching, although the teaching activities and content are different, the experimental class and the control class use the same teacher (self-teaching) and the equivalent teaching hours to conduct experiments. In order to ensure teaching Quality, I strictly follow the teaching plan to teach, and strive to control the experimental error range to a minimum<sup>[2]</sup>.

### 2.2.3 Mathematical Statistics

The data obtained from the physical fitness test of the students in the public sports ball and basketball classes of a university are statistically processed on the spss18.0 application software.

### 2.2.4 Logic Analysis

Combining the research results of predecessors, and the literature and experimental data obtained through the above research methods are organized, classified, summarized and summarized in accordance with scientific logic.

## 3. Research results and analysis

### 3.1 Feasibility Analysis of Introducing Dutch Ball Sports in Applied College Physical Education

Physical fitness is an important factor in evaluating the quality of a human body. Improving physical fitness is of great significance to human health. This paper tests the physical fitness of students in the ball and basketball classes before and after the experiment. The test consists of three items: first, the 50-meter fast running test. It mainly tests the students' ability to run fast in short time. Second, the vital capacity Test. It is mainly to test students' potential ability of aerobic work ability and ventilator function. It mainly tests the explosive force of students' lower limbs and short-term limbs. The statistics are as follows:

According to the experimental results (as shown in Table 1 and Table 2), the physical quality of male and female students participating in the ball sports has been improved to varying degrees. After the experiment, the author performed three items on a college student who participated in the Dutch sports. The paired sample T test of physical fitness showed that there was a significant

difference in the data of male and female before and after the experiment in terms of vital capacity ( $P < 0.01$ ). In terms of standing long jump, the data of pre- and post-study data of girls were statistically significant ( $P < 0.05$ ), there was no statistically significant difference in male students' data ( $P < 0.05$ ). In the 50-meter fast running, there was no statistically significant difference between male and female before and after the experiment ( $P > 0.05$ ). : Through the 18-week teaching of Dutch ball sports, the ability of students to improve their speed and quality in short-term and fast-running is not obvious, but they have different degrees of improvement in aerobic capacity, cardiopulmonary function and lower limb explosive force. The same is shown in Table 2 below. That is to analyze the changes in the quality of girls:

Table 1: Comparative analysis of changes in physical fitness of boys in the experimental samples (n=20)

Physical fitness index	Before the experiment $\pm$ S	After the test $\pm$ S	T	P
50 meters running(S)	7.56 $\pm$ 0.04	7.23 $\pm$ 0.05	1.099	>0.05
Vital capacity(ml)	3303.47 $\pm$ 50.29	4205.78 $\pm$ 22.02	5.963	<0.05
Standing long jump(m)	2.42 $\pm$ 0.47	2.49 $\pm$ 0.24	3.157	>0.05

Table 2: Comparative analysis of changes in physical fitness of girls in the experimental samples (n=20)

Physical fitness index	Before the experiment $\pm$ S	After the test $\pm$ S	T	P
50 meters running(S)	9.16 $\pm$ 0.04	8.23 $\pm$ 0.05	4.662	>0.05
Vital capacity(ml)	2518.47 $\pm$ 26.29	3105.78 $\pm$ 23.5	5.463	<0.05
Standing long jump(m)	1.62 $\pm$ 0.47	1.58 $\pm$ 0.42	4.227	<0.05

As shown in Table 1 and Table 2, after the experiment, physical examinations were conducted on students of two physical education classes in a university. From the macroscopic analysis, the physical quality of the experimental class students was better than that of the control class. This paper measured the students in the two classes after the experiment. The data were analyzed by independent sample T test. The data of the experimental class and the control class were statistically different in the 50-meter fast running ( $P < 0.05$ ). In terms of vital capacity, the data of the girls before and after the experiment were statistically significant. The significance ( $P < 0.05$ ), the male data comparison was not statistically significant ( $P < 0.05$ ). In the standing long jump, the data of the students in the two classes was not statistically significant ( $P < 0.05$ ). The above data indicates: by participating in a paragraph the ball-bearing movement of time can effectively improve the physical quality of the human body, especially the ability of women to run fast in short-term speed, the ability of aerobic work and the potential of ventilator function<sup>[3]</sup>.

### 3.2 The impact of Dutch ball sports on the physical quality of contemporary college students

First, strengthen and improve the construction of the facilities related to the ball-heavy sports. All colleges and universities should invest in the construction of the beach sports facilities and

facilities. Each year, some special funds should be set up to purchase some ball-related equipment, as well as site and equipment management and maintenance. Second, multi-organizational mass sports activities and cultural propaganda of the Dutch ball sports. Regularly hold the ball game and organize mass sports activities.

#### 4. Conclusions

First of all, we found that by participating in a period of Dutch ball sports, we can effectively improve the physical fitness of the human body, especially the ability of women to run fast in short-term speed, aerobic work ability and ventilator function. Secondly, in the mixed sports teaching class of colleges and universities, the Dutch ball sports can improve the students' self-learning ability compared with the basketball. In addition, the Dutch team can enhance the team awareness and collaboration ability among the students; especially it is the interaction between the opposite sexes.

#### References

- [1] Maes L, Vereecken C A, Gedrich K, et al. *A feasibility study of using a diet optimization approach in a web-based computer-tailoring intervention for adolescents [J].* 2008.
- [2] Huang T A, Jia G. *The feasibility study of linking language test to the CEFR— Taking College English Test as an example [J].* *Foreign Language Testing & Teaching*, 2012.
- [3] Eardley S, Bishop F L, Cardini F, et al. *A pilot feasibility study of a questionnaire to determine European Union-wide CAM use.[J].* *Forschende Komplementärmedizin*, 2012, 19(6):302.