

Action Study of Long-Distance Running

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Keywords: college students, middle-and long-distance running, extracurricular exercise, action research

Abstract: In the process of 50 freshmen 'middle-distance running technology physical education teaching, including physical education classroom teaching, students' extracurricular exercise, extracurricular exercise and other physical exercise guidance, action research is adopted to explore the effective strategies of physical education teaching and students' independent exercise. The results show that the students' learning objectives are more clear, their learning enthusiasm for learning and independent physical exercise has been improved, their students' self-monitoring ability for scientific exercise has been improved, and their overall academic performance has been improved significantly.

In 2021, the eighth National Student physical health research report by the Ministry of Education showed that in the past five years, the endurance quality of teenagers has been improved, but the overall quality is still low. Endurance quality is affected by human cardiopulmonary function, which is an important indicator^[1], directly affects human quality of life, and attracts widespread attention from the whole society. Endurance quality has always been a weak link in the development of ordinary college students' physical quality^[2], and it is also the focus of students' physical education development. Teaching college students' middle and long distance running technology can help students master the correct method of middle and long distance running training, so as to effectively improve their endurance quality and physical health level. Therefore, this study intends to adopt action research in the teaching practice, explore the teaching strategies of middle-and long-distance running technology, promote students' independent exercise, and provide direct experience for improving the effectiveness of physical education teaching.

1. Study protocol

1.1. Study situation analysis

Fifty freshmen of Taizhou University are selected. The basic information is shown in Table 1. According to the interview, students generally lack the knowledge and habits related to middle-and long-distance running, and their ability to exercise autonomy and independent learning after class is generally low. Specific performance is in: exercise motivation is weak, there is no short-and medium-term exercise plan, exercise method is single, self-efficiency is not high, extracurricular sports resources use is insufficient.

Table 1: Basic information of the students before the study

	number of people	weight (KG)	HRrest	vital capacity (ML)	The 800-m Run (S)	1000 m Run (S)
man student	21	74±11.3	74±3.8	4048±527		239±31
woman student	29	51±7.8	76±3.5	2712±438	245±28	

1.2. Research Objectives

Teaching objectives: Teach middle and long-distance running skills, be able to practice independently, find and solve problems in practice.

Research objective: To explore the effective strategies to improve the independent practice ability, and to summarize the teaching methods and strategies available for reference.

1.3. Research content

1.3.1. Increase the interest and selectivity of the course content, and stimulate the students' enthusiasm for running

Students choose the way of running independently, and carry out the "runner show" activity after class, so that students can use the way of free running to improve the basic body function. Share the process and experience of free running, share the running experience, evaluate and encourage each other, and fully improve the students' sense of participation. Guide students to extracurricular exercise, put forward improvement suggestions, such as: posture, breathing, rhythm, etc.

1.3.2. Strengthen the guidance of learning method and train students' independent exercise ability

Guide the students to develop an endurance exercise program. The endurance exercise is divided into three aspects: health diagnosis, content arrangement and fatigue recovery, and adjusted in real time according to their own situation. Arrange the presentation and discussion, and praise and reward the well-planned and implemented cases.

Guide students to adjust their life and rest. Guide students to participate in outdoor activities, reduce sedentary and bad diet, train students on the concept of healthy life, use more sports skills in life, and subtly consolidate the learning effect subtly.

Using network we-media technology and platform to build situational teaching and self-study platform. In each unit, the previous monotonous repetitive exercises are changed to the display of "we media" to promote the students' interest in sports, strengthen their application and output of the knowledge learned, and make the physical education class more abundant.

1.4. Data collection method

Observational method: First, to observe and record the use of students' skills on site. The second is to check the video homework of students' practice after class, establish homework files, and collect the data that can reflect the research results.

Interviewing method: According to the interview outline, the students were interviewed to understand the practice status and problems, and timely obtained the feedback from the experiment.

1.5. Effect detection and evaluation

Technical evaluation: to evaluate the students' middle-distance and long-distance running technology.

Quality standards: to evaluate and compare the relevant qualities of students before and after learning.

2. Implementation of the action plan

2.1. Strengthen, technical learning, motivation, stimulate students' subjective initiative

2.1.1. Set an example and inspire motivation

Model method (Modeling) was invented by Bandura in 1967. It is characterized by making the abstract knowledge concrete and humanized through the specific ideological understanding, language behavior and growth process, so that the objects are infected, inspired and touched from the image, the cordial role model, so as to stimulate the individual subjective initiative.

2.1.2. Give fun into repeated exercises

Increase the interest of repetitive exercises, making middle-distance running exercises no longer painful and boring, but a "creative process of actively seeking (or even imposing) meaning from the events occurring"^[3]. Injecting interest into the middle and long-distance running exercises can effectively help students to reduce the physical discomfort caused by the pole, and improve their psychological experience, increase their interest in sports, stimulate students' enthusiasm for independent exercise, and improve their awareness of exercise.

2.1.3. Determine the appropriate exercise goals

To stimulate the students' continuous willingness to exercise, Enhance the sense of gain, Strengthening of self-efficacy, Thus the more efficient use of middle-distance running techniques in exercise, Students are required to set the stage of exercise goals, And follow the following standards: (1) can meet the standard (Achievable): the goal must meet their own current ability; (2) Can trust the standard (Believable): think that you can achieve the set goals; (3) Yes, the quantitative standard (Conceivable): the target can be clearly expressed and measured; (4) yearning standard (Desirable): the goal is indeed their heart yearning for.

2.2. Strengthen the exercise guidance and improve the technical utilization rate

2.2.1. Refine the exercise plan

The independent exercise of ordinary college students is generally lack of planning, and it is difficult to ensure the effective implementation even if the plan is made, which hinders the application schedule of the technology learned. Through classroom teaching and after-class guidance, we can understand students' needs and difficulties, help students to refine the exercise plan, including the exercise method, intensity, frequency, time and other aspects, and guide students to improve the exercise plan after students initially complete the stage plan.

2.2.2. Optimize exercise strategies

2.2.2.1. Self-health diagnosis

Self-health diagnosis is the self-dynamic detection, analysis and judgment of physical health status, in order to grasp the basic situation of physical health. Self-health diagnosis is a necessary link of scientific exercise, which can make students fully understand their own health status, and provide a basis for making an exercise plan and safe implementation. Generally speaking, it can be carried out from the body shape and development level, disease diagnosis, physiological function detection, exercise ability testing and other aspects. Self-health diagnosis is conducive to enhancing health awareness, establishing a sense of responsibility for self-maintaining health and the awareness of actively participating in physical exercise.

2.2.2.2. Fatigue recovery

After large intensity and long time sports, there will be muscle stiffness, pain and other exercise fatigue state, such as do not pay attention to recovery, continuous exercise can cause a deeper fatigue degree, thus damaging the health, so in exercise, we must pay attention to the detection and recovery of fatigue. Fatigue detection generally adopts the method of the main body feeling and the morning pulse measurement. If the morning pulse exceeds 10% of the daily value, it is necessary to pay attention to the fatigue recovery. Active rest, such as massage, physiotherapy, steam bath, etc., to improve the blood circulation of local muscles, accelerate lactic acid decomposition, can also use nutritional supplements, or eat more foods rich in vitamins and protein; in addition, adjust sleep time, strengthen sleep quality can also promote body fatigue recovery.

3. Outcomes and reflections

3.1. Results

3.1.1. Clear learning objectives

In the whole process of completing the learning and exercise program, through formulating, implementing, evaluating, adjusting and reimplementing, the students have established the learning goals, including skills goals, emotional goals, health goals, and refined the phased goals of physical exercise. Students have completed their own learning tasks very well. Through continuous repetition and reinforcement, they can do physical exercise around the goal, based on the learning of middle-distance running technology. In the summary and self-evaluation of self-exercise, students can also timely respond to their own goals, objectively evaluate their achievements and deficiencies, and put forward improvement suggestions and plans. The second questionnaire survey found that the students have made significant progress in setting and completing the learning objectives of middle-and long-distance running skills. The number of students choosing "very clear" increased from 3% to 25%, and "more clear" from 14% to 62%. To some extent, it reflects that the direction of students' learning has been strengthened.

3.1.2. Improved the learning enthusiasm

Students' enthusiasm for physical education learning has been greatly improved after action research. First of all, the classroom performance of physical education class, the students' sports participation generally improves, the classroom average heart rate index increases significantly, the exercise time is significantly improved, the psychological state is more positive, the mood is more pleasant, and the communication and interaction between teachers and students, students and

students become frequent and warm. Secondly, the after-class physical exercise is more active, the completion number and quality of students' exercise homework have been significantly improved, the homework content is richer, the forms are more diverse, the results of self-evaluation and mutual evaluation of homework are getting better and better, and the students' interest and confidence in physical education learning and extracurricular exercise have produced positive changes. The results of the second questionnaire survey showed that the students significantly improved their learning motivation and attitude. Most students said that their interest in PE education increased significantly. The students who were interested in PE increased from 7% to 32%, and the more interested students increased from 25% to 61%; those who felt confident in completing the middle and long distance running test increased from 19% to 71%.

3.1.3. Enhance the monitoring ability of scientific exercise

Students' monitoring of the physical exercise process has been greatly enhanced compared with that before the study. According to the observation and evaluation of the homework and classroom performance of students with weak physical fitness foundation, the physical state during the physical exercise is relatively stable, and the physical fitness has also been improved to a certain extent after the exercise. From the perspective of students' self-evaluation, students are satisfied with their performance and results of classroom learning and after-class exercise, and have certain ability to solve problems in sports. In addition, students can actively coordinate their own exercise plan and schedule.

3.1.4. Enriched learning resources and improving academic performance

By guiding students to study independently, to exercise independently, to make full use of the Internet, to search for more physical exercise resources, to broaden students' learning channels, to improve, after-class self-study ability and sports knowledge understanding ability. Students' interest in physical education learning and resources has a significant impact on the participation of physical education classroom, which is manifested in the improvement of the autonomy of sports practice, so that students can really play the guiding role of sports theory.

The results of their physical function and exercise performance showed improvements in their quiet heart rate, vital capacity, and endurance run test scores (Table 2).

Table 2: Basic information of the students after the study

	number of people	weight (KG)	HR _{rest}	vital capacity (ML)	The 800-m Run (S)	1000 m Run (S)
man student	21	73±10.9	71±5.7*	4512±641**		211±37**
woman student	29	50±8.1	72±4.9*	2958±579*	214±33**	

*It was $P < 0.05$, and ** was $P < 0.01$

3.2. Reflection and discussion

3.2.1. Students' insufficient self-evaluation and adjustment ability

Students tend to rely on external evaluation or be more active to others, while their self-evaluation is not comprehensive and meticulous enough. Specific have the following two aspects: one is to their own, health diagnosis and psychological state analysis is not in place. Second, I am more active in evaluating others' classroom performance and homework, while avoiding the

evaluation of my own homework.

The adjustment ability is also not strong, as reflected in the lack of strategies to solve the difficulties encountered in learning and exercise, and the exclusion of communicating with others about their own problems, which affects the classroom performance and the continuation of extracurricular exercise. In addition, the self-monitoring of daily physical exercise is not enough. Some students' independent completion degree of the exercise plan is less than 50%, and their consciousness needs to be strengthened.

Physical education teaching should establish a diversified evaluation system to guide students to realize the positive role of the formative evaluation of self-regulation on their own development. At the same time, the evaluation of physical education study should increase the understanding and application of sports theoretical knowledge, and pay attention to the development of students' comprehensive sports literacy. Finally, in the classroom teaching and extracurricular physical exercise guidance should also pay attention to the students' emotional attitude and sports participation performance in the process, and pay attention to the formation of students' values in the process of learning and physical exercise.

3.2.2. Students' subjective initiative of independent exercise needs to be strengthened

Some students do not fully understand what kind of independent exercise implementation strategy, think that independent exercise has nothing to do with physical learning, more do not understand the promotion role of independent exercise strategy on physical learning. This is not conducive to the effectiveness of physical education teaching.

Establishing students' awareness of independent exercise is not achieved in a day, and only relying on teachers or classroom indoctrination can not effectively improve the autonomy of students' physical exercise. More detailed and comprehensive guidance is needed. Through the refinement and decomposition of the tasks and objectives, the independent exercise is interspersed into the students' daily activities and classroom teaching process, and the exercise consciousness can slowly form, become a habit, and finally develop steadily.

3.2.3. The Teacher's role needs to be changed

Teachers should be fully aware and implement the teaching process, the teacher's dominant position and the subject position of students, should change the teachers "full", students "passive" traditional teaching mode, should pay attention to play the function of teachers' teaching guidance and inspiration, help students find more suitable for their own physical learning and exercise method. The role of teachers should be changed from decision-makers to advisers, participants and supervisors.

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