

Perspective and Reflection on the Teaching Reform of Physical Education and Health Courses in Higher Vocational Education Based on Vocational Physical Fitness Needs

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Abstract: Promoting the teaching reform of physical education and health courses in vocational colleges guided by the demand for occupational physical fitness is of great significance for enhancing students' vocational adaptability and promoting their long-term development. The implementation of strategies such as constructing vocational physical fitness module courses, innovating teaching implementation methods, and establishing dynamic evaluation mechanisms can promote curriculum reform, make teaching more in line with vocational education training objectives, and lay a solid foundation for students' career development.

Keywords: occupational physical fitness demand orientation; vocational physical education and health courses; teaching reform

1. Introduction

The vocational physical fitness of students is an important foundation for being competent in job positions. Vocational education aims to cultivate high-quality technical and skilled talents who can adapt to the front lines of production, construction, management, and service. Different professions have specific physical requirements for practitioners, including physical coordination required for mechanical manufacturing majors, endurance and weight-bearing ability required for logistics management majors, etc. Reforming vocational physical education and health courses guided by occupational physical fitness needs can make teaching more targeted and compensate for the lack of disconnection between physical training and occupational needs in traditional courses.

2. Constructing vocational physical fitness module courses

To create vocational physical fitness module courses that correspond to the profession, it is necessary to conduct in-depth research on the physical fitness needs of different professional positions and combine them with talent training programs for each profession. The "Precision Operation Physical Fitness Module" offered by the Mechanical Manufacturing major includes wrist flexibility training, limb coordination training, and other content. During the training period, students are arranged to participate in the assembly activity of small capacitors and resistors on mobile phone motherboards. Fine cutting exercises are carried out using a micro lathe. During the assembly process, students are required to use tweezers to pick up parts with a diameter of less than 1 millimeter and complete the welding operation with a magnifying glass; When operating a micro lathe, control the cutting tool to cut a 0.5mm wide line on the metal sheet.

The "Nursing Practical Fitness Module" set up in the nursing profession includes simulation training programs such as bed handling and wheelchair pushing. The simulated hospital bed used in the bed handling training is equipped with a weight adjustment device, which gradually increases the weight from 50 kilograms to 80 kilograms, in order to simulate the handling scenarios of patients with different weights. Students need to practice the complete movement process from bending their knees and exerting force, keeping their waist and back straight, to overall movement. After each transfer is completed, the teacher will use video playback to analyze the angle and force point of the movement, helping students correct incorrect postures. At the same time, nursing operation norms are integrated into the training, such as asking patients "How are you feeling now" before moving, and reminding them "Please relax, we will move slowly" during the movement process, so that physical training is integrated with vocational skills development, enabling students to have sufficient physical strength and master standardized nursing communication skills.

Each module course has clear corresponding occupational physical fitness indicators and training objectives. The "Tour Guide Service Physical Fitness Module" of the Tourism Management major sets the endurance index as walking continuously for 3 hours without fatigue. During training, students choose scenic routes around the campus, including uphill and downhill routes. Students need to carry teaching equipment and complete a teaching task for a scenic spot every 15 minutes. Teachers

use heart rate monitors to record students' physical fitness changes; The adaptability index is set as the response speed when dealing with unexpected situations. The simulated scenarios include emergency cooperation and route guidance when a tourist suddenly faints, and coordination and route adjustment when team members disperse, allowing students to improve their physical fitness and coordination ability in the process of rapid response.

3. Innovative teaching implementation methods

Integrating physical training into real-life occupational scenarios, using a teaching model of "occupational scenario simulation+physical training". In the teaching of logistics management major, the scene of simulating warehouse goods sorting, loading and unloading is simulated. The warehouse area is divided into 10 storage spaces with partitions, stacking simulated goods of different weights such as 5kg book packages, 10kg electronic equipment boxes, and 20kg parts turnover boxes. Students are required to sort and stack 10 items of goods within 30 minutes based on the order information. During sorting, they must use a barcode scanner to confirm the information of the goods. During stacking, they must be placed according to the principle of "heavy not pressing light, large not pressing small". The teacher uses a motion capture system to record the students' movement trajectory, promptly reminding them of movements with a bending angle exceeding 90 degrees, and guiding them to use the "squatting posture, bending knees, and arm lifting" method of exerting force to avoid waist injuries[1].

The course "Long term sitting posture office physical adjustment" designed for computer application majors is conducted in a classroom arranged as an office environment, equipped with adjustable height office chairs and ergonomic keyboards. Students simulate a continuous 4-hour office state, during which they undergo 5-minute physical adjustment training every hour, including movements such as "neck meter exercises" (slowly swinging up, down, left, right, and diagonally), "shoulder loops" (placing both hands on the shoulders to draw circles), and "sitting posture and lifting legs" (alternating legs to be parallel to the ground). Teachers use electromyography monitors to detect the muscle tension of students' neck, shoulder, and waist. When the data exceeds the threshold, the desktop reminder device is triggered to force students to perform adjustment exercises. The physical education and health curriculum system in higher vocational education must take the vocational physical fitness needs of students' future job positions as an important guide, with the lifelong career as the main line, focusing on the combination of enhancing students' physical fitness and lifelong benefits, highlighting the teaching characteristics of vocational physical fitness, stimulating students' enthusiasm and initiative to participate in sports, consciously improving their physical fitness and sports skills, achieving seamless integration between curriculum teaching and future job demands, and contributing to the strategic goal of achieving a healthy China.

4. Establish a dynamic evaluation mechanism

Specific evaluation items are set according to the professional needs of different majors, and the evaluation content is reformed to include occupational physical fitness indicators in the evaluation system. The marketing major will use "endurance maintenance of continuous 4-hour outdoor promotion activities" as the evaluation indicator. When evaluating, the campus square is selected as the promotion square. Students need to complete tasks such as building a 3-meter x 2-meter promotional booth, introducing product features to 50 passing pedestrians, and answering 20 consultation questions. Teachers evaluate from three dimensions: physiological dimension using a step recorder to measure walking distance (required to be no less than 8000 steps), psychological dimension observing changes in the tone of explanation (whether to maintain enthusiasm), and skill dimension checking the completeness of product introduction (core selling point mention rate not less than 90%).

The preschool education major uses "the waist and abdominal strength of bending down to take care of young children for a long time" as an evaluation indicator. In a simulated kindergarten classroom, students are arranged to feed (using simulated tableware containing 500 milliliters of water), tie shoelaces (putting shoes on 10 different styles of dolls), and organize toys (sorting and storing 20 scattered building blocks) for 2 hours. The evaluation adopts a weight system of "action standard degree (50%)+completion efficiency (30%)+fatigue adjustment (20%)". Action standard degree is evaluated by bending angle (maintaining 45-60 degrees) and standing speed (not exceeding 1.5 seconds). Completion efficiency is calculated based on the amount of tasks completed per unit time. Fatigue adjustment examines whether students can actively use methods such as "alternating knee flexion" and "stretching against the wall" to relieve lumbar pressure.

Adopting a combination of process evaluation and occupational physical fitness standard testing for evaluation. Process evaluation focuses on students' performance in simulated occupational scenario training. The evaluation of logistics management majors includes the standardization of cargo handling actions (30%), the rationality of division of labor in team cooperation (30%), and the compliance with safety regulations such as "no overloading" and "handle with care" (40%); The occupational physical fitness standard test is conducted according to the physical fitness standards of the occupational

position. The mechanical manufacturing major tests the "number of precision parts assembled within 10 minutes" (with a standard of no less than 8 pieces), and the nursing major tests the "completion time of transporting 80 kilograms of simulated hospital beds" (with a standard of no more than 30 seconds), evaluating the actual physical fitness level of students.[2]

5. Conclusion

Reforming the physical education and health curriculum in vocational colleges guided by the demand for professional physical fitness is of great significance for improving the quality of vocational education and promoting students' career development. The implementation of strategies such as building vocational physical fitness module courses, innovating teaching implementation methods, and establishing dynamic evaluation mechanisms can make course teaching meet vocational needs and cultivate students' physical fitness qualities that are suitable for their professional positions. During the reform, balancing the relationship between basic physical fitness and professional physical fitness, and strengthening the construction of the teaching staff are necessary to ensure the effective implementation of reform measures.

References

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Author Bio

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