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Physical Qualities and Their Development in Preparing High School Students of Rural Schools for National Defense

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Annotation

Abstract

This article discusses the physical preparation of high school students in rural schools with a focus on developing motor qualities during the process of preparing them for national defense. It explores the significance of cultivating strength, speed, endurance, agility, flexibility, and coordination. The study is based on pedagogical observations and lesson chronometry's, analyzing the duration, intensity, and types of physical exercises. The findings reveal the need for systematic improvements in physical education to enhance its effectiveness, particularly in preparing youth for military service. The article also provides recommendations for incorporating targeted training methods to achieve better results in physical preparedness and overcoming practical obstacles..

Keywords: *Physical education, motor qualities, strength, endurance, speed, agility, flexibility, coordination, rural schools, youth preparedness, military training, pedagogical observation, physical exercises, training methodology..*

Introduction

In any organism, strength, speed, endurance, agility, flexibility of the body's joints, and muscle mobility are developed to varying degrees. These are referred to as the motor qualities of the human body.

The effectiveness of the existing physical education system is assessed based on how well it can cultivate these motor qualities in an individual.

An individual's level of physical fitness is characterized by the extent to which they can demonstrate these qualities, such as strength, agility, and speed. These qualities have measurable indicators, referred to as physical fitness indicators, which determine an individual's readiness for creative work and national defense.

The aspiration to cultivate and develop motor qualities has been humanity's timeless goal. The effectiveness of handling tools, weapons, and military equipment depends on the physical qualities and virtues endowed by nature and further developed through training.

Raising physically robust, morally upright, aesthetically sensitive, dedicated individuals with a strong grasp of modern technical sciences is a key demand of our era, complementing the goals and objectives of the national physical education system.

The "Healthy Generation" state program, adopted in the early years of independence, remains significant to this day.

The complexity of motor tasks, requiring harmony in simultaneous and sequential actions, necessitates the development of motor coordination. Here, we examine the process of fostering and developing physical qualities.

Increasing the level of physical preparedness through physical education in general education schools is a means of achieving physical maturity in young generations. Its purpose is to prepare individuals for life, ensure high productivity, and readiness for service in the Armed Forces.

The need to bring the level of physical development of rural youth to an acceptable standard highlights the importance of addressing issues of physical education and pre-conscription youth preparedness, as well as developing measures and recommendations for improving this process.

Research on the physical education of high school students in rural schools involved over 250 pedagogical observations and lesson chronometry's. These studies examined physical exercises conducive to the development of motor qualities, the duration of loads, and their intensity.

The analysis revealed that the cultivation of motor qualities is conducted during the main part of lessons, consuming only 18–26 minutes.

Exercises such as short- and middle-distance running, standing and running jumps for distance and height, grenade throwing, gymnastics equipment exercises (if available), and sports and active games were identified as part of the main lesson activities.

Typically, 2–3 topics are taught in a single session, with each topic allocated 8–10 minutes, resulting in a motor density of about 40–60%.

Strength development in youth predominantly occurs during gymnastics lessons. Strength, a physical quality, is described through muscle tension, stretching or contracting fibers, twisting, pulling, and other activities. Its progress is observed through resistance training, particularly lifting weights (e.g., dumbbells, expanders).

During gymnastics lessons, exercises like pull-ups, body rotations on the bar, elbow flexions and extensions on parallel bars, and static holds with angular body positions are practiced.

Through pedagogical observations, a system for selecting physical loads tailored to students' capabilities was developed, ensuring load reduction as per individual capacity.

Chronometry's showed that strength-demanding exercises were performed in a single set, failing to adhere to key methodological principles, such as performing exercises "to the limit" using maximal exertion techniques.

Gymnastics exercises or combinations, when regulated, did not significantly enhance practical strength capabilities due to their short execution duration (15–20 seconds) and low intensity requirements.

Strength development often relies on selecting resistance proportional to body weight. General developmental exercises, used in the preparatory part of lessons, are limited in number and intensity, serving as a warm-up for the main part of the lesson.

However, observations indicate that the exercises for speed development in the preparatory part are insufficient. Speed training is mainly implemented during the main lesson part through repetitive short-distance sprints or sport-specific exercises. The number of repetitions, series, and rest intervals are determined by teachers based on scientific and methodological recommendations.

Endurance training is conducted at the end of the preparatory or main parts of lessons using steady, low-intensity runs lasting 5–7 minutes.

Heart rate analysis during physical education classes showed that it averaged 116–122 beats per minute during gymnastics, reaching 122–138 beats per minute during sports games and athletics.

The above findings indicate that the load prescribed in physical education classes is insufficient for effectively developing motor qualities.

The analysis of pedagogical observations on the physical preparedness of rural school students led to the following conclusions:

Physical preparedness tasks for high school students are inconsistently addressed, negatively impacting their readiness for Armed Forces service.

The volume and intensity of physical loads for developing motor qualities are reduced.

Thus, the slow pace of physical education in rural schools necessitates new tools and methods to improve its effectiveness and establish adequate physical preparation for service in the Armed Forces.

Targeted development of youth, considering their practical orientation, requires special preparatory exercises to ensure success in obstacle courses.

Exercises aimed at overcoming obstacles on courses, such as climbing walls and ropes, require specific preparatory exercises for effective development of motor skills.

Research was conducted to regulate physical loads by determining their duration, intensity, and rest intervals between repetitions.

Repeating high-intensity loads multiple times impacts the body more strongly than prolonged, steady loads.

Exercises for strength endurance should be integrated into any section of the physical education program. Guidelines recommend tasks where maximal power is exerted for 6–10 seconds, submaximal power for 35–45 seconds, moderate power for over 1 minute.

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