

LECTURE 9

Psychophysical Readiness for Successful Professional Activity

PLAN

1. Structure of the system of professionally applied physical training (PAPhT).
2. Recommendations for professionally applied physical training of students according to groups of specialties.

Structure of PAPT

Professional-Applied Physical Training (PAPhT) is the purposeful use of physical culture means to prepare an individual for the demands of their chosen professional activity.

Purpose of PAPhT: psychophysical readiness for successful professional activity.

PAPhT represents a system of knowledge and special exercises that help a future specialist become professionally competent, develop professionally important physical qualities, necessary motor skills, and psychomotor abilities. When planning PAPhT, the department must consider the comprehensive demands of the future professional's activity. Up to 15% of total hours may be allocated to PAPhT. The structure of PAPhT includes the stable arrangement and interrelation of elements and the integrity of the system. The architecture and internal organisation of PAPhT manifest as a unity of stable connections among its elements. Understanding the structure requires acknowledging that system and structure are inseparable: structure cannot exist without the system, and the elements themselves do not reflect the whole structural picture. The system's stable elements and their connections form its structure.

The structure of professionally applied physical training (PAPT) includes a relatively stable arrangement of elements, their interrelations, and the integrity of the PAPT system, reflecting its invariant aspects. The organization and internal form of PAPT function as a unity of stable interconnections between its elements.

To understand the concept of structure within theoretical and methodological analysis, it is important to remember that systemic and structural components are interconnected. The structure of PAPT cannot exist without the PAPT system itself, and therefore is always fundamentally structural.

Isolated elements and their relationships do not provide a complete structural picture of PAPT. Since these relationships represent internal connections, stable elements of PAPT and their interactions form the structure.

On this basis, integral properties of the PAPT system emerge, manifested in its external connections.

The internal structure includes elements and their relationships, while the external structure reflects the system-wide qualities of PAPT, which themselves become elements relative to the external structure.

Thus, PAPT structure characterises the relationships between individual elements and the system as a whole and serves as an indicator of its organisation. The structure of PAPT is characterised by stability and consistency, allowing it to maintain its properties despite changes in internal or external conditions.

A specific means of PAPT is physical exercise, which determines two aspects of training: the acquisition of physical skills and the development of general and specific physical qualities. This dictates the use of general and special teaching methods – exercise repetition, alternation of load and rest, the format of sessions, and construction of the PAPT process according to its goals and tasks (frequency, cycles, control, management, etc.).

The pedagogical subsystem is based on biological laws of the human body and the motivational attitude of students toward PAPT. It is implemented through the social subsystem, which determines normative requirements for training specialists in higher education institutions based on qualification standards.

Factors considered when selecting PAPT tools:

- Type of work – physical or mental.
- Working conditions – duration of working time, comfort of the workplace.
- Nature of work – physical and emotional load, range of movements, etc.
- Work and rest schedule.
- Dynamics of work capacity – weekly, daily, and monthly patterns of efficiency.

When selecting PAPT exercises, the department takes into account the specifics of the educational process at each university and the characteristics of the chosen professional field.

Groups of PAPT tools

1. Applied physical exercises and individual elements of various sports.
2. Applied sports.
3. Natural health-improving factors and hygienic conditions.
4. Corrective exercises.

Physical education at higher education institutions is conducted throughout the entire period of study – both during scheduled academic classes and in extracurricular time.

The PAPT program includes national development programs coordinated with other social spheres: education, industry, professional and military activity. The effectiveness of PAPT depends on its structure. Readiness formation is a continuous, stage-based process. A multiyear model of preparation during higher education includes five stages. Given the low physical readiness of many entrants, the first mandatory stage is general physical preparation.

2. Recommendations for Professional-Applied Physical Training by Specialty Groups

General Physical Qualities Needed:

- High level of general and static endurance
- Strength of neck, shoulder girdle, and trunk muscles

Specific Physical Qualities:

- High coordination of arm movements
- Static endurance of trunk muscles
- High level of specific endurance
- Endurance of extraocular muscles (visual analyzer system)

Psychological Qualities:

- Sense of time, space, form
- Observation
- Attention volume, distribution, switching, concentration, stability
- Operative thinking
- Short-term and long-term memory
- Emotional stability
- Purposefulness, discipline, initiative, diligence
- Independence, persistence, endurance, self-control

PAPhT Tasks:

- Development of general and static endurance, strength of neck, shoulder girdle, and back muscles, endurance of arms and finger muscles
- Due to constant visual information intake: implementation of a complex program to train and optimise the condition of the eye muscles (superior/inferior rectus, superior/inferior oblique, medial/lateral rectus)
- Development of psychophysiological qualities: attention functions, information processing, memory, thinking, ability to relax muscles, optimise breathing, posture, and psychological state under prolonged hypodynamia

Physical Qualities for the Communicative Group

General Physical Features:

- Fatigue dynamics, mental and nervous fatigue
 - Visual strain and static overload of the musculoskeletal system
 - Decrease in work capacity in the second half of the day
- Physical pauses are advisable to optimise psychophysiological state

Communication-related professions generate numerous stress situations requiring composure and self-control. Hypodynamia and emotional overload provoke negative reactions, requiring stability and resilience.

The work often leads to the formation of a borderline functional state, decreased functioning of CNS, visual, cardiovascular and respiratory systems, slower work pace, and declining performance. Without preventive measures, this leads to stress. Students must have excellent vision and hearing, refined motor and visual analyser functions, good discrimination abilities, muscle relaxation control, and optimal psychophysical condition.

High Required Levels:

- Psychophysiological readiness
- General, static, and strength endurance
- Coordination, dexterity, tactile sensitivity
- Concentration and stability of attention

Specific Physical Qualities:

- Endurance of eye muscles
- Static endurance of trunk
- Dexterity of hands, accuracy of manipulations
- Strength of shoulder girdle

Psychological Qualities:

- Observation, wide distribution of attention, switching, concentration
- Strong short-term and long-term memory
- Operative thinking
- Verbal and emotional stability
- Self-control
- Logical and creative thinking
- High analytical, synthetic, and deductive thinking
- Creativity

Tasks of Professionally Applied Physical Training (PAPT):

- priority development of physical qualities – general and static endurance, strength of the shoulder girdle, dexterity and coordination of hand movements, and muscular sensitivity;
- development of psychophysiological qualities – improvement of the functions of the motor, visual, and vestibular analyzers (precision of spatial and force differentiation, speed of visual recognition, attention functions, ability to relax muscles and optimize the overall state during prolonged hypokinesia);
- optimization of special knowledge in the theory and practice of PAPT. Use applied exercises from track and field, gymnastics, sports games – especially table tennis, swimming, badminton, squash, tennis, and hockey;
- because of the large volume of information received through the visual analyzer, it is necessary to perform a comprehensive program for training, developing, and optimizing the condition of the eye muscles: superior and inferior rectus, superior and inferior oblique, medial and lateral rectus muscles.

Physical Qualities for the Technical Group

General physical qualities: flexibility, sense of balance, endurance, ability to optimize one's functional state under prolonged hypodynamia, high temperatures, sharp temperature fluctuations, high humidity, and other adverse natural and environmental factors.

Special physical qualities: speed endurance, sensorimotor coordination, general agility, hand and finger dexterity, endurance of the eye muscles.

Psychological qualities: sense of time, space, and shape; observation skills; switching, distribution, concentration, and volume of attention; emotional stability, operative thinking, long-term and short-term memory; discipline, purposefulness; executive discipline, independence, responsibility, initiative; courage, decisiveness, self-control, persistence.

Integral qualities: stability – the ability to maintain high working capacity under stressful, emergency, and interpersonal situations; ability to perform work and production operations for extended periods – both under prolonged hypodynamia with minimal physical load, and during phases of high motor activity; ability to dose small efforts with precision, amplitude control, and differentiated tension.

Tasks of PAPT for the Technical Group:

- improvement of cardiovascular and nervous system functioning through optimal aerobic endurance loads using cyclic sports activities;
- development of strength, static and speed endurance, general agility, coordination, hand dexterity and strength of the shoulder girdle, differentiation of movements of the legs, arms, and trunk;
- development of psychophysiological qualities – sensory perception, attention, thinking, memory, information processing. Special improvement of the functions of the visual and motor analyzers; optimal improvement of the vestibular system and thermoregulation. Optimization of the psychophysiological state to maintain general work capacity.

Physical Qualities for the Natural-Agrarian Group

General physical qualities:

- strength and static endurance
- speed endurance
- explosive strength

Special physical qualities:

- simple reaction of differentiation, choice reaction, reaction to a moving object, observation reaction
- sensorimotor coordination
- ability to quickly acquire new skills
- ability to act quickly and accurately with the hands; fine motor skills
- sense of balance
- strength of the shoulder girdle
- static endurance of the neck and back muscles
- endurance in various natural and climatic conditions (high/low temperatures, sudden temperature changes, high humidity)

Psychological qualities:

- emotional stability, ability to concentrate, creative thinking, strong analytical abilities
- well-developed sense of time, space, observation, volume, distribution and switching of attention, operational thinking, long-term attention
- goal-orientation, discipline, initiative, independence, courage, persistence, self-control
- creative attitude to work, desire for self-improvement
- high level of verbal-logical and visual-logical memory
- empathy, tolerance, ability to sympathize, analytical thinking

Integral qualities:

- ability to work under irregular schedules, in diverse conditions and terrain
- ability to analyze and synthesize numerous facts, ability to relax muscles, optimize the visual analyzer

Tasks of Professionally Applied Physical Training (PAPhT):

- development of general endurance, strength endurance of all muscle groups; optimal development of static endurance of all muscle groups, strength of the shoulder girdle, trunk, legs; agility, flexibility, coordination, speed of movements of arms, legs, trunk;
- development of psychophysiological qualities — especially important in improving thermoregulation mechanisms; ability to relax muscles and optimize the functional state to maintain general working capacity under irregular work rhythms and in natural or occupationally harmful conditions, usually without basic everyday comfort;
- acquisition of special knowledge in the theory and practice of PAPhT; use of applied exercises from athletics, gymnastics, sports games (especially table tennis, swimming, badminton, squash, tennis, hockey), as well as athletics, cycling, skiing, equestrian sports, motor sports, helicopter and water sports;
- due to the large amount of information received through the visual analyzer, it is necessary to perform a comprehensive program to train, develop, and optimize the state of the eye muscles: superior and inferior rectus, inferior and superior oblique, medial and lateral rectus muscles.



Psychophysical Readiness: Key Concept for Professional Efficiency

Psychophysical readiness is a complex, integrated state of the individual that combines optimal physical qualities, functional capabilities, mental stability, and professional-specific psychomotor skills. It reflects the balance between the body's physical potential and the psychological mechanisms that ensure effective, safe, and productive performance in professional activities.

Psychophysical readiness determines how well a future specialist can:

- withstand professional physical and cognitive loads,
- operate effectively in stressful and unpredictable conditions,
- maintain high performance during prolonged work,
- quickly adapt to changing environments, tasks, and temperatures,
- make accurate and coordinated movements,
- preserve attention, concentration, memory, and emotional stability.

In the context of **Professionally Applied Physical Training (PAPT)**, psychophysical readiness is both **the primary goal** and **the main indicator** of the effectiveness of the training system. It integrates three major components:

1. Physical Readiness

Includes:

- strength, endurance, flexibility, coordination, speed qualities;
- specific muscle groups required in the profession;
- resistance to fatigue, temperature changes, and prolonged physical or static loads.

2. Physiological and Functional Readiness

Includes:

- cardiovascular and respiratory efficiency,
- thermoregulation stability,
- sensory system readiness (vision, vestibular function, proprioception),
- optimal functioning of psychomotor reactions.

3. Psychological Readiness

Includes:

- attention stability, distribution, switching;
- short-term and long-term memory;
- emotional stability and self-regulation;
- stress resistance and self-control;
- motivation, discipline, initiative, and responsibility.

Psychophysical readiness forms the basis for:

- accelerated professional learning,
- prevention of occupational diseases and injuries,
- long-term professional longevity,
- maintaining high performance throughout the workday and work week,
- effective functioning in extreme or unpredictable professional conditions.

Thus, **PAPT is not only about physical fitness**—it is a system aimed at creating a specialist who is physically strong, mentally stable, professionally competent, and capable of working efficiently and safely in all conditions.

PSYCHOPHYSICAL READINESS

