

16. Biddle, S. J. H., Mutrie, N., & Gorely, T. (2015). *Psychology of Physical Activity: Determinants, Well-being and Interventions* (3rd ed.). Routledge.
17. Hagger, M. S., & Chatzisarantis, N. L. D. (2007). Intrinsic motivation and self-determination in exercise and sport. *Human Kinetics*. <https://doi.org/10.5040/9781492594815>
18. Dishman, R. K., & Sallis, J. F. (1994). Determinants and interventions for physical activity and exercise. In C. Bouchard, R. J. Shepard, & T. Stephens (Eds.), *Physical activity, fitness, and health* (pp. 214–238). Human Kinetics.
19. Bauman, A., Reis, R. S., Sallis, J. F., Wells, J. C., Loos, R. J., & Martin, B. W. (2012). Correlates of physical activity: Why are some people physically active and others not? *The Lancet*, 380(9838), 258-271. [https://doi.org/10.1016/S0140-6736\(12\)60735-1](https://doi.org/10.1016/S0140-6736(12)60735-1)

DOI: [https://doi.org/10.31392/UDU-nc.series15.2024.10\(183\).47](https://doi.org/10.31392/UDU-nc.series15.2024.10(183).47)

Anikeienko Larysa

**Senior Lecturer at the department of health and sports technologies, National Technical University of Ukraine
"Igor Sikorsky Kyiv Polytechnic Institute" Kyiv, Ukraine.
orcid: 0000-0002-9592-5457**

Bilokon Viktor

**Senior Lecturer at the department of health and sports technologies, National Technical University of Ukraine
"Igor Sikorsky Kyiv Polytechnic Institute" Kyiv, Ukraine.
orcid: 0000-0002-8750-8573**

THE FORMATION OF PROFESSIONALLY IMPORTANT MOBILE QUALITIES IN THE PROFESSIONAL AND APPLIED TRAINING OF STUDENTS NATIONAL TECHNICAL UNIVERSITY OF UKRAINE "IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE"

Vocational applied physical training is a specialized pedagogical process of targeted training that promotes the development and improvement of motor functions and skills in accordance with professional requirements and the nature of the educational process. The importance of professional-applied physical training in promoting health is to increase the nonspecific resistance of the body, expand the adaptive potential, increase the functional capabilities of the body and prevent diseases. The block (development of functions) determines the improvement of muscle-joint sensitivity and coordination of movements, the increase in muscle strength and endurance, the development of tactile sensitivity and dexterity, improving the reaction to a moving object and sensorimotor reactions. The essence of the block (increasing the efficiency of professional activity) lies in the fact that physical labor sports are based on a general motor stereotype that helps improve the functions and systems necessary to acquire professional qualifications. Special exercises determine the level of professional suitability, the strength of mastery of professional skills, the development of professional abilities, the improvement of professionally significant functions, and the increase in the level of professional performance. The leading principles of professional-applied physical training are: professional-applied orientation of physical education classes; the use of professionally applied physical training against the background of high physical activity; stages in the formation of professionally significant functions; coincidence of the functional orientation of sports and the requirements of professional activity; adequacy of forms and methods of physical education to the nature of work in professional activities; the complexity of the use of physical education means; improvement of individual psychophysiological properties that ensure the success of training for a specific professional activity; transfer of trainability of motor qualities from sports to professional activities.

Key words: students, university, vocational and applied physical training, physical education, physical qualities.

Анікеєнко Лариса, Білоконь Віктор. Формування професійно важливих рухливих якостей в професійно-прикладній підготовці студентів НТУУ "КПІ ім. Ігоря Сікорського". Професійно-прикладна фізична підготовка – це спеціалізований педагогічний процес цілеспрямованого навчання, що сприяє розвитку та вдосконаленню рухових функцій і навичок відповідно до професійних вимог і характеру навчального процесу. Значення професійно-прикладної підготовки у фізичній культурі полягає в підвищенні неспецифічної резистентності організму, розширенні адаптаційних можливостей, підвищенні функціональних можливостей організму та профілактиці захворювань. Блок (розвиток функцій) визначає вдосконалення м'язово-суглобової чутливості та координації рухів, збільшення м'язової сили та витривалості, розвиток тактильної чутливості та спритності, удосконалення реакції на рухомий об'єкт і сенсомоторних реакцій. Суть блоку (підвищення ефективності професійної діяльності) полягає в тому, що фізичні трудові види спорту базуються на загальному руховому стереотипі, який сприяє вдосконаленню функцій і систем, необхідних для набуття професійної кваліфікації. Спеціальні вправи визначають рівень професійної придатності, міцність оволодіння професійними навичками, розвиток професійних здібностей, удосконалення професійно значущих функцій, підвищення рівня професійної працездатності. Провідними принципами професійно-прикладної фізичної підготовки є: професійно-прикладна спрямованість занять з фізичного виховання; застосування професійно-прикладної фізичної підготовки на фоні високих фізичних навантажень; етапи формування професійно значущих функцій; збіг функціональної спрямованості спорту та вимог професійної діяльності; адекватність форм і методів фізичного виховання характеру праці у професійній діяльності; складність використання засобів фізичного виховання; вдосконалення індивідуальних психофізіологічних властивостей, що забезпечують успішність підготовки до конкретної професійної діяльності; перенесення тренуваності рухових якостей зі спорту в професійну діяльність. Багато випускників, вищих технічних навчальних закладів, які пройшли курс фізичного виховання, оволоділи міцними

навичками у використанні фізичної культури та спорту у трудовому процесі, найпростішими руховими навичками, необхідними у виробничій діяльності. Тому перед кожним вищим закладом ставиться завдання – вести підготовку фахівців на високому науково-технічному рівні із застосуванням сучасних методів, організацій навчально-виховного процесу, які забезпечують використання ними здобутих знань та умінь у практичній роботі чи наукових дослідженнях.

Ключові слова: студентство, ВНЗ, професійно-прикладна фізична підготовка, фізичне виховання, фізичні якості.

Formulation of the problem.

In the conditions of the unstable economic, political and social situation in Ukraine, the demands placed on specialists of technical universities undergo constant changes. Today, they must possess not only thorough knowledge in the field of their professional activity, the ability to apply it in practice, but also well-developed professionally significant personal qualities, such as activity, mobility, creativity, flexibility, sociability, the formation of which is greatly facilitated vocational and applied physical training in university conditions. Vocational and applied physical training at universities is a component of the professional training of students, it allows to develop leading physical qualities, movement skills, skills and functions of the body, contributing to more successful mastery of the profession and further improvement in it.

Analysis of literary sources. The problems of professional and applied physical training were the subject of scientific interest of many domestic and foreign scientists: Antoshkiv Yu.M., Petryshyn Yu.V. [1], Bondar T.G., Syrovatko Z.V. [2], Ishychkina L.M. [3], Polukhin Y.V., Khokhlov A.V. [4].

Scientists have defined the following main tasks of physics culture: ensuring human motor activity, maintaining an appropriate level of health and working capacity; acquiring and using knowledge about health and increasing the level of physical and psychophysical qualities that would contribute to the high efficiency of future specialists; formation of positive character traits, promoting the harmonious development of the individual. Physical education (based on the analysis of literary sources) can be considered as a specialized pedagogical process of purposeful systematic influence on a person through physical exercises, hygienic factors with the aim of strengthening health, developing physical qualities, improving morphological and functional capabilities, forming and improving basic vital motor skills, abilities and related knowledge; ensuring a person's readiness for active participation in social, industrial and cultural life.

According to normative documents, physical education in higher educational institutions is aimed at preserving and strengthening the health of students, ensuring their physical readiness for life and high productivity labor. Its important component is professional and applied physical training. However, it is advisable to consider it not only in close connection with physical education, but as a component (subsystem) of the general system of training a specialist in a university, of the general process of education and upbringing of students, focused on the formation of their professional readiness. Special scientific research conducted in recent years, practice of physical education of students expanded their understanding of the meaning and content of professional and applied physical training of future technical specialists.

The scientists found out that in the process of professional and applied physical training students successfully develop a complex of psychophysiological and personal qualities determined by the requirements of their future professional activity. These requirements need to be systematized and clarified in connection with the modern development of technologies and changes in the functions of specialists holding their positions [1].

Professional and applied physical training is a professionally oriented component of physical education, which affects the upbringing and preparation of a specialist for future professional activity, strengthening his health, development of physical, moral-willed and intellectual abilities with the aim of harmonious personality formation, development of his active life.

The block (forms of professionally applied physical training) involves the integrated use of various forms of physical culture: morning gymnastics, introductory gymnastics, industrial gymnastics, general training, special training, restorative gymnastics. The block (types of sports) is based on the differentiated development of motor qualities and psychophysiological indicators. Cyclic sports (running, cycling) develop endurance. Gymnastics and acrobatics develop coordination of movements. Playing sports develop the speed of information processing, the mobility of nervous processes and dexterity. The choice of specific sports and physical exercises is determined by the characteristics of professions. For practical purposes of professional applied physical training, a typological grouping of professions is appropriate. For professions of the (man-nature) type, the following professional qualities are required: a high volume of visual-figurative memory, observation, interest in the life of animals and plants, good physical performance, a high level of development of visual, auditory and tactile sensations, a tendency to influence the environment, sufficient muscular endurance, high stability of attention. Professions of the (human-technical) type make demands on spatial imagination, coordination of movements, distribution and concentration of attention, color perception, speed of sensorimotor reactions, emotional stability, speed of information processing, observation, proprioceptive and muscular-articular perception, technical thinking, stereoscopic of the eye [4].

Professionally important qualities for professions of the (person-to-person) type include goodwill, sensitivity, responsiveness, the need for communication, sociability, responsibility, consistency of one's actions with team, ability to manage people, emotional stability, tactfulness, distribution of attention, coordination of motor acts. For operator-type professions (a human-sign system), the following qualities are required stability of distribution and switching of attention, readiness for emergency actions, accuracy of perception, ability to operate with abstract concepts, good coordination of movements, perseverance, absence of speech defects, high level of visual development sensations (acuity and visual fields, color perception), high speed of sensorimotor reactions. In professional applied physical training, a special place is given to physical exercises that develop certain qualities: endurance, strength, coordination and accuracy of movements, differentiation of muscle efforts, agility, reaction speed, etc. Endurance is the ability to perform any activity for a long time without reducing its effectiveness. It trains by performing exercises with large muscle groups at a moderate-to-moderate pace. Muscular strength is the ability to overcome or resist external resistance through muscular effort. Exercises with weights help develop strength.

Dexterity is the ability to correctly perform movements, coordinating them in terms of effort, time and space. The following exercises help improve agility: running in combination with various jumps and turns; sequential and simultaneous movements of the arms, torso and legs; somersaults, various jumps with turns of 30, 60, 90, 180 and 240°. Numerous studies of the connection between the functioning of the body and the impact of training in general education institutions have convincingly shown that the nature of the educational process has a significant adverse effect on health. In this regard, the search for new methods of managing the functional state of the body is of relevance [3]. Prerequisites for optimizing educational activities in higher educational institutions are the identification of risk factors that hygienically determine the functional state of the body. Specific features of universities are high levels of average daily teaching load. Due to this, the weekly teaching load is 7.3-10.0% higher than the norm. The high intensification of the educational process is evidenced by the high density of classes (81.6-88.9%) and the proportion of time spent mastering new material (29.6-35.3%). The hygienic determinants of the educational process in universities are the large volume of daily and weekly workload (on 20-30% exceeding the norm), intensification of training by increasing the density of classes (up to 85.0-91.4%) and increasing the time of independent work (up to 33.9-36.2%), high monotony of classes (4-6 types of operations). Research results indicate that the general hygienically significant characteristics of training in higher educational institutions are the intensification of educational and cognitive activity: the use of problem-search methods, high levels of assimilation of knowledge and skills, and provision of interdisciplinary connections. The lack of a regulatory framework and educational and methodological support also contributes to the increasing difficulty of teaching students. Optimization of students' educational activities involves compliance of the organization of training with the functional capabilities of their body. Physical education, in particular professional-applied physical training, plays a special role in optimizing the interaction of the "student-learning" system. When applied to students, it allows you to maintain a high level of mental performance during classes and restore it after them, ensures the prevention of possible unfavorable factors in educational activities, and improves socially significant qualities.

The choice of forms and methods of using physical exercises is based on the characteristics of the educational process. If static load prevails in educational activities, introductory gymnastics should be carried out 15-20 minutes after the start of classes. Monotonous work requires frequent, short breaks with active recreation. With significant muscle effort, introductory gymnastics should be carried out according to the principle of warming up. Work associated with precise, fine movements of the fingers requires introductory gymnastics based on the principle of preventive active rest. During classes with a significant load on the visual analyzers, it is advisable to carry out corrective exercises for the eyes (blink your eyes for 40-50 seconds, then close them for 30-40 seconds, sitting quietly in a comfortable position). The purpose of introductory gymnastics is to create conditions for the rapid restructuring of the body for educational activities, accelerating entry into the stage of sustainable performance. Introductory gymnastics is carried out before starting work in a well-ventilated area. Both during theoretical classes and during practical training, physical activity is a powerful health-improving factor that expands the functional capabilities of students. The effectiveness of the impact of physical education on the body of students depends on the compliance of the physical loads with the state of health, as well as the nature of the activity during training at basic enterprises [2]. The direction of physical exercise depends on the nature of the upcoming activity. For students with a low level of motor activity during practical training and prolonged attention tension, the complex of introductory gymnastics includes combined or coordinated exercises for muscle groups not related to the upcoming work. Introductory gymnastics for students with a significant component of physical labor in their studies consists of simple exercises with the sequential inclusion of muscle groups that bear the main load. The duration of the introductory gymnastics complex is 10-15 minutes, the physical education pause is 5-8 minutes. The power of the load depends on the pace of the movements. Most of the exercises in the introductory gymnastics complex are performed at an average pace. The principle of accessibility is achieved by following the rules "from easy and simple to difficult and complex." Visibility is ensured by explanation, demonstration of the exercise, and the use of visual aids. Maintaining performance in the dynamics of the school day is facilitated by monitoring the development of fatigue. Chronological observations have established that among students there are mainly three types of fatigue.

Symptoms of visual fatigue are manifested by visual discomfort and unpleasant sensations (pain in the temples and forehead, heaviness and pressure in the eyes, the desire to close them). With postural fatigue, pain occurs in various parts of the body. General fatigue is characterized by a deterioration in well-being and mood, the appearance of negative emotions, drowsiness and painful experiences, loss of interest in work, and slower perception of time. When students show initial signs of fatigue, a physical training session lasting 50-70 seconds is carried out, 2-3 exercises are performed (stretching, bending, turning the body, breathing movements). Features of the educational and production process determine the choice of forms and methods of physical exercise. With static muscle tension, introductory gymnastics begins 15-20 minutes after the start of classes. Monotonous work requires frequent short breaks with the organization of active recreation. With significant muscle efforts, introductory gymnastics is carried out according to the principle of warming up. Work associated with precise, fine movements of the fingers requires introductory gymnastics based on the principle of preventive active rest. During classes with a significant load on the visual analyzer, corrective exercises for the eyes are advisable: students blink for 40-50 seconds, then close their eyes and sit quietly in a comfortable position for 30-40 seconds.

Conclusions.

Analysis of materials from studies of working capacity in the dynamics of the working day allowed us to establish interesting patterns. For students who performed introductory gymnastics and a physical education break, after work changes were minimal, the indicators remained virtually unchanged. Students who did not engage in industrial gymnastics showed significant and multidirectional shifts in most of the studied indicators. In these individuals, the spread of indicators of reaction to a moving volume and the time of visual-motor reaction significantly increased, which indicated an increase in inhibition processes. Along with this, their accuracy of reaction with differentiation of stimuli and reaction to a moving object increased, apparently due to the inclusion of higher levels of regulation. It is known that mismatch of functions and increased inhibitory processes indicate developing fatigue.

Reference

1. Antoshkiv Yu.M., Petryshyn Yu.V. 2004. The relationship of the level of general and of special physical fitness in the system of vocational and applied physical training of the changing composition of higher education institutions of the Ministry of Emergency Situations of Ukraine // Young sports science of Ukraine: Collection. of science articles in the field of physical culture and sports. - L., - Vol. 8. - Vol. 3. - 6 – 10 p.
2. Bondar T.G., Syrovatko Z.V. Professional-applied basis of differentiation of aqua fitness tools in the process of physical education of future musicians. Scientific journal series 15 "Scientific and pedagogical problems of physical culture/physical culture and sport/" Issue 3 K (110)19, Kyiv - 86-90 p.
3. Ishyckina L.M. 2003. Diagnosis of the level of physical fitness of personnel of fire protection units // Concept of development of the field of physical education and sports in Ukraine: Collection. of science pr. – Rivne, – Part 1.-170-174 p.
4. Polukhin Y.V., Khokhlov A.V. 2011. Professionally demanding physical training as an integral part of the educational and educational process of students. Scientific journal. Kyiv, branch of the NPU named after Drahomanova. -. -with. 193-196 p.

DOI: [https://doi.org/10.31392/UDU-nc.series15.2024.10\(183\).48](https://doi.org/10.31392/UDU-nc.series15.2024.10(183).48)

Chekhovska Liubov

Doctor of Science (Physical Education and Sport), Professor
Lviv State University of Physical Culture named after Ivan Boberskyj
<https://orcid.org/0000-0003-3833-5212>

Dutchak Myroslav

Doctor of Science (Physical Education and Sport), Professor;
National University of Physical Education and Sport of Ukraine
<https://orcid.org/0000-0001-6823-272X>

Zhdanova Olha

PhD (Physical Education and Sport), Professor
Lviv State University of Physical Culture named after Ivan Boberskyj
<https://orcid.org/0000-0003-2447-1475>

Luzhna Maryana

PhD (Physical Education and Sport)
Lviv State University of Physical Culture named after Ivan Boberskyj
<https://orcid.org/orcid/0000-0002-2888>

SUBSTANTIATION OF THE PROFESSIONAL STANDARD OF "PERSONAL FITNESS TRAINER" IN UKRAINE

Professional staff is needed for the effective functioning of health fitness. There are no professional standards for fitness staff in Ukraine, so there is no single standardized approach to determining the list of job functions, general and special competencies, the required knowledge, skills and practical abilities. The purpose of the study is to substantiate and develop a professional standard of "Personal Fitness Trainer" taking into account international experience. Methods: analysis and generalization of scientific and methodical literature, pedagogical observation, functional analysis, documentary method, method of expert evaluations, methods of mathematical statistics.

Results. The development of a professional standard for "Personal Fitness Trainer" was based on regulatory acts and the algorithm formed for the health fitness system. There have been identified 60 necessary labor actions which ensure the performance of 9 labor functions of a fitness trainer. The professional standard takes into account the needs of employers, consumer requirements and will be the basis for the industry standard of higher education in the relevant specialty.

Conclusions. The developed professional standard for "Personal fitness trainer" is relevant, complies with regulatory acts and established algorithm, adapted to the system of fitness. The expediency of developing a professional standard "Personal fitness trainer" was based on the study of the actual state and prospects of application of fitness staff. The professional standard provides requirements for the content and quality of professional activity; list of general competencies; requirements for the level of qualification, medical contraindications to work, work experience, level of education of a fitness trainer; a list of labor functions and labor actions and the necessary knowledge, skills and abilities; list of subjects and means of work and definition of professional competencies, etc. The professional standard "Personal fitness trainer" should be the basis for the industry standard of higher education in the relevant specialty.

Key words: professional standard, health fitness, personal fitness trainer.

Чеховська Л., Дутчак М., Жданова О., Лужна М. Обґрунтування професійного стандарту «персональний фітнес-тренер» в Україні. Для ефективного функціонування оздоровчого фітнесу необхідний фаховий персонал. Професійні стандарти для фітнес-персоналу в Україні - відсутні, тобто немає єдиного стандартизованого підходу до визначення переліку трудових функцій, загальних та спеціальних компетентностей, необхідного обсягу знань, умінь та практичних навичок. Мета дослідження - обґрунтувати та розробити професійний стандарт «Персонального фітнес-тренера» з врахуванням міжнародного досвіду. Методи: аналіз та узагальнення науково-методичної літератури, педагогічне спостереження, функціональний аналіз, документальний метод, метод експертних оцінок, методи математичної статистики. Результати. Розроблення професійного стандарту для «Персональний фітнес-