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José María Pino Suárez 400-2 esq a Lerdo de Tejada, Toluca, Estado de México. 7223898475

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TÍTULO: Tecnologías modernas de fitness en la educación física de los estudiantes.

AUTORES:

1. Ph.D. Valery Zhamardiy.
2. Ph.D. Olena Shkola.
3. Ph.D. Sergiy Bezpaliy.
4. Ph.D. Bohdan Kalynovskyi.
5. Ph.D. Olena Vasylenko.
6. Ph.D. Iryna Ivanochko.
7. Ph.D. Nadya Dovgan.
8. Ph.D. Igor Malynskyi.
9. Ph.D. Oleksandr Danylenko.
10. Ph.D. Grygoriy Griban.
11. Ph.D. Kostiantyn Prontenko.

RESUMEN: Este artículo presenta un análisis teórico de los problemas de aplicación de tecnologías de acondicionamiento físico en la educación física de los estudiantes. El estudio analizó las fuentes de los problemas, sus factores y características de transformación. Este trabajo determinó los conceptos básicos, sus características comunes y las diferencias entre ellos. Resumimos enfoques para comprender los conceptos de aptitud física, aptitud sanitaria y tecnología de aptitud física. Un análisis realizado de estos conceptos nos permitió resolver los problemas de

aplicación de tecnologías de acondicionamiento físico presentes en el proceso de educación física de los estudiantes.

PALABRAS CLAVES: aptitud física, tecnología física, educación física, estudiante.

TITLE: Modern fitness technologies in the physical education of students.

AUTHORS:

1. Ph.D. Valery Zhamardiy.
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9. Ph.D. Oleksandr Danylenko.
10. Ph.D. Grygoriy Griban.
11. Ph.D. Kostiantyn Prontenko.

ABSTRACT: This article presents a theoretical analysis of fitness technologies application problems in physical education of students. The study analyzed the sources of the problems, their factors and transformations features. This work determined the basic concepts, their common features and differences between them. We summarized approaches for understanding the concepts of fitness, sanative fitness and fitness technology. A conducted analysis of these concepts allowed

us to solve the fitness technologies application problems present in the process of physical education of students.

KEY WORDS: fitness, fitness technology, physical education, student.

INTRODUCTION.

Nowadays, the problem of fitness related technologies application during physical education classes is very relevant. Never the problem of organization of physical education process in higher educational institutions had such a significant pedagogical, social, technological and economic significance as now (Azhyppo, et al., 2018; Bolotin, & Bakayev, 2015; Griban, et al., 2019; Ivanchykova, Saienko, Goncharova, Tolchieva, & Poluliashchenko, 2018; Prontenko, et al., 2019).

The necessity for this problem consideration arises due to objective factors. Firstly, the development of the general culture of students depends on organization of educational process of physical education (professional competence and skills of teaching staff). Secondly, the quality of education of students in higher educational institutions is becoming increasingly important in our society. It ensures the competitiveness and ability of graduates to carry out professional duties in the conditions of modern socio-economic and political transformations; for instance, the entry of Ukraine into the European educational space and reformation of physical education system in accordance with European standards.

The processes of European integration are traditionally accompanied by the creation of not only scientific and innovation space, but also by the development of common criteria, standards and corresponding conceptual apparatus in the field of physical education and sports (Grigoriev, 2010; Ivashchenko, Blagoy, & Usachev, 2008; Kachan, 2017; Ilnytska, et al., 2016; Prysiazniuk, et al., 2019; Shkola, et al. (2019).

Different aspects of the problem of fitness technologies application during physical education classes were the subject of analysis in works of domestic and foreign researchers in the field of pedagogy, theory and methodology of physical education and sports (Dobrodub, 2011; Hawley, & Franks, 2000; Mozolev, et al., 2019; Romanov, Panfilov, & Borisova, 2013; Tymoshenko, et al., 2019; Usachov, 2006; Zhamardiy, et al., 2019). Analysis of these works showed different approaches to the interpretation of basic concepts used in respective studies.

DEVELOPMENT.

Methodology.

The aim of the article is to find out the content of main definitions of the study: "fitness", "sanative fitness" and "fitness technology".

Objectives of the article:

- 1) To study the existing scientific and theoretical approaches of scientists to the interpretation of concepts "fitness", "sanative fitness" and "fitness technology" in the context of their interpretation within the framework of pedagogical science.
- 2) To establish laws of interactions between the investigated concepts and theoretically substantiate their essential characteristics.

The research involved usage of theoretical and empirical methods. We used following theoretical methods: search and analysis of scientific, pedagogical, philosophical, methodological literature, curriculum, educational plans and normative documents. We also used synthesis and generalization. Our research used such empirical methods as: observation of the educational process of physical education of students, system analysis method, methods of comparison and matching and method of functional and structural analysis.

Results and discussion.

The term "fitness" is used in all countries of the world without translation. It comes from the English verb "to be fit", which means "to be in shape", that is, to feel good, to have a charming look and be healthy (Borilkevich, 2003; Beliak, 2014; Cybulska, & Drobnik, 2015). Significant deterioration of health in the developed countries' population, as a result of hypokinesia, was an integral part of scientific and technological progress, which had led to the emergence of this recreational trend (Bolyak, A., Bolyak, N., Korch-Cherba, & Kizim, 2012; Davydov, 2001).

In one case, scientists interpret term "fitness" as a new social phenomenon, or the physical condition of a person, in another they treat it as a combination of means and methods aimed at achieving physical fitness, shape correction, or as a format of mass physical culture, or as a comprehensive health improvement program based on the means and methods of bodybuilding (Radas, Sesar, & Furjan-Mandic, 2017; Sinitsa, & Shesterova, 2010).

Fitness first appeared in the United States as a direction of sanative physical culture. President of the International Union of Sports Medicine, Dr. Holman considers the concept of "fitness" as a state of mental and physical readiness to succeed in a particular task. He includes in this term training of the cardiovascular system, correct technique of breathing, training of muscles that support the posture and create an attractive appearance, training of flexibility and ability to relax, and nutrition that provides body with the necessary energy (Saikina, 2005).

As noted by E. T. Hawley and B. D. Franks (2000), the semantic content of the word "fitness" gradually evolved from "physical state" to the denomination of the social phenomenon, the cultural phenomenon of the 20th century. The evolution of term went from the "physical health of man, which is expressed in his ability to work" to "the pursuit of an optimal quality of life, which includes physical, mental and social components". V. I. Grigoriev (2010) etymologically considers the term "fitness" as a way of putting money into physical development, restructuring leisure, and

world metaphor of absolute health and social progress of a person. The phenomenon of fitness arose as a natural reaction to the continued domination of financially low-cost and unattractive forms and types of physical culture and was considered as a culturological emanation of the Western lifestyle, strategy of success.

The basis of the concept of fitness is the principle of FITT, where F (from the English "frequency") stands for the frequency (number) of classes per week; I (from the English "intensity») is the characteristic of the load, which is determined by the heart rate; T (from English "time") is the duration of the class; T (from the English "type") is the type of occupation (i.e. intensity of training and the presence of encumbrances) (Griban, et al., 2018; Saikina, 2005; Bolotin, & Bakayev, 2015). In the textbook "Fitness Technology in Physical Education", this concept is disclosed as follows: "fitness is a system of physical exercises of physical culture and health orientation, coherent with the individual state of the psychophysical sphere of a person, its motivation certainty and personal interest" (Zinchenko, & Usachov, 2011; Borilkevich, 2003). In the textbook "The systemic approach in the professional activity of the fitness trainer" by A. A. Bolyak, N. L. Bolyak, O. V. Korch-Cherba and P. M. Kizim (2012), the concept of "fitness" is defined as "the components of health that provide a high quality of life".

Concept of "fitness" in its interpretation has certain differences, which allows us to make some refinements. T. Yu. Krusevich (2008) defines fitness (from the English "fitness" stand for adaptability, ability to endurance) as a direction of mass culture, sports and recreational physical culture, which is aimed at improving general state of the human body. It also includes training, the ability to rely on negative environmental factors through the implementation of simple and complex exercises in musical accompaniment or at a certain rate, fitness helps in correction of shape and weight of the body and allows to consolidate the achieved results.

E. T. Hawley and B. D. Franks (2000) claim that term "fitness" is not some frozen static state. This is a dynamic multifactorial process, consisting from several components: physical, mental, spiritual and social conditions that are subjected to development (training). It should be noted that some scholars, in particular V. N. Selyuyanov (2001), interpret the term "fitness" as a system of physical exercises for health, coordinated with the individual state of the psychophysical sphere, its motivational certainty and personal interest.

N. I. Volovik (2010) emphasizes that term "fitness" fully reflects the social (healthy lifestyle), biological (motor activity, physical state and physical readiness), psychological (motives, interests) recreational and other characteristics of the usage of physical education for health purposes. A number of authors (Cybulska, & Drobnik, 2015; Dobrodub, 2011; Mozolev, et al., 2019) under term "fitness" mean comprehensive health improvement programs, which are usually based on means and methods of bodybuilding. E. T. Hawley, B. D. Franks (2000) do not consider such priority necessary, and believe that the predominance of any component (athleticism, aerobics or stretching) is undesirable.

V. E. Borilkevich (2003) argues that "fitness" combines various types of physical activity. Fitness is not a sport of higher achievement, but physical activity, accessible and necessary for all. Such activity as running, skating on roller skates, swimming and cycling can be considered as "fitness". According to N. M. Buinova (2004), fitness is a way of life aimed at preserving health. N. I. Volovik (2010) defines term "fitness" as "general (and not only physical) readiness of a person to leave the "flow of life" and to ensure an effective naturalness for action in situations requiring mobilization of physical and spiritual forces. It is a state of psychological and physical preparedness for success in a specific task; fitness is a component of health that provides a high quality of life". In this aspect, the term "fitness" covers most of the terms that characterize the field of recreational physical culture (mass sports, conditioned training, recreation etc.).

L.Ya. Ivashchenko, O. L. Blagoy, Yu. O. Usachev (2008) define "fitness" as a new modern direction in the system of physical education that covers the developed countries of the world and is the answer of a modern man to a fast pace of life. The tasks of fitness encompass: health promotion, vitality increase, growth of general and special ability to work, formation of physical qualities, formation and correction of physiological abnormalities, psycho-prophylaxis, psycho-correction, psycho-regulation, acquisition of vital energy, vivacity, cheerful mood and resistance to stress.

According to V. Yu. Davydov (2001), "fitness" is a system of comprehensive recovery and maintenance of health through proper nutrition, physical activity, taking into account individual abilities. According to O. A. Kachan (2017), "fitness" is a popular method of improving the body, which allows you to lose weight, acquire desired forms and consolidate the result for a long time, combining both active workout and proper nutrition. And the diet and active load are selected for each individual, taking into account the level of physical training, contraindications, body structure and existing contraindications.

In our time fitness acts as a new form of physical education and wellness activities among students. Its basis consists from general development exercises, elements of dance, which are harmoniously combined with emotional and rhythmic music. It is one of the world's most popular healing systems, which allows a person to meet the modern needs of a person, make figure beautiful and healthy. Its main distinguishing feature is the individual approach to those engaged in it and personal selection of the diet. The basis of physical fitness training is aerobic exercise (Bolyak, Bolyak, Korch-Cherba, & Kizim, 2012; Bulatova, & Usachov, 2008; Prontenko, et al., 2019).

According to S. V. Sinitsa and L. E. Shesterova (2010), the main goal of fitness is "the achievement of internal harmony and the external attractiveness of a person and this is the main motive for people who want to have a good look and feel". According to their research, "the main task of fitness is to strengthen the health of population, increase vital tone, increase general and special

ability to work, education of physical culture, formation of body and correction of defects, increase mental and psychological mood, increase resistance to possible daily stress".

The results of scientific and methodological literature analysis in the field of pedagogy, theory and methods of physical education make it possible to define "fitness" as a system of physical culture and health techniques or programs, compiled taking into account age, sexual and physiological characteristics of students, aimed at the formation, preservation and strengthening of their health. In view of the above, we can consider fitness as a general physical preparedness of an organism, biological individual perfection, which is expressed in the transfer of genetic information to subsequent generations, a health improvement technique that allows you to improve the shape and weight of the student's body and permanently consolidate the result.

"Fitness" is a complex, multifaceted, social, dynamic, open, self-organized, multifunctional, managed system that can be considered as a process and the result of physical perfection, improvement health, level of physical capacity of students, set of material and spiritual values, specific product of recreational, motor and innovative services.

Another notable concept used in the study is the concept of "sanative fitness". It, like the concept of "fitnes", is the basic category of fitness technology. Today in pedagogical science there is no single understanding of them, sometimes these concepts are used as synonyms. Because of this, often in scientific works and dictionaries, researchers try to give their definition of the content of these concepts and find out their relationship. In physical education practice, the term "sanative fitness" refers to a set of various types of motor activity that contribute to improving the physical condition of those involved.

In the manual "The systemic approach in the professional activity of the fitness trainer", by A. A. Bolyak, N. L. Bolyak, O. V. Korch-Cherba and P. M. Kizim (2012), the notion of "sanative fitness" (physical state, physical fitness) is interpreted as "the optimal physical state, which includes the

achievement of a certain level of results of the performance of motor tests and low risk of the development of health problems". N. I. Volovik (2010) considers the notion of "sanative fitness" as "an effective set of means of selective influence, which, in a number of fundamental circumstances, corresponds to the classification level of the biological, social, conceptual, probable, integral, complex system".

According to L. Ya. Ivashchenko, O. L. Blagoy, Yu. O. Usachev (2008), "sanative fitness" serves as effective means of the most common in our time diseases prevention. For example: atherosclerosis, hypertension, coronary heart disease, impaired posture with lesions of the bone and muscular apparatus, stroke and myocardial infarction. However, inadequate volume and intensity of exercise that exceeds the functionality of an organism often leads to negative consequences, and in some cases it leads to irreversible changes. This occurs when person is ignorant or deliberately ignoring the basic principles of the use of physical education and health education.

According to N.I. Volovik (2010), Yu. O. Usachov (2006), G. Ilnytska, et al. (2016), "sanative fitness" is aimed at achieving and maintaining physical well-being and reducing the risk of diseases (cardiovascular system, metabolism, etc.). The improvement of the fitness level is associated with a low risk of disease and an improvement in the quality of life. Authors point out that "the target of the desired influence of sanative fitness is considered to be the physical condition of a person which characterizes (in accordance with the definition of the International Committee for Standardization of Tests) his personality, state of health, body and constitution, functional capacity of the body, physical capacity and preparedness".

The conducted analysis of scientific literature and Internet sources revealed that the existing definitions of the concepts studied in our research do not fully reflect the essence of the concept of "sanative fitness", which leads to terminological and methodological confusion. "Sanative fitness" is a way of life of a modern person, which includes the qualities necessary for efficient functioning

of all physiological systems of the body of students through maintaining a healthy lifestyle. It includes fitness contests, festivals involving student teams and their individual representatives and also aimed at achieving and maintaining physical well-being and reducing the risk of developing diseases. At the same time, it is necessary to reveal the content of fitness technology. Semantically, the concept of "fitness technology" is characterized as "the result of finding effective ways to ensure a form of physical activity that is favorable for students" (Buinova, 2004).

In the context of the consideration of the conceptual apparatus of our study, we note the publications T. Yu. Krusevich (2008), who defines the notion of "physical culture and health technology". This concept combines the process of using the means of physical education for recreational purposes and as scientific discipline, which develops and improves foundations of methods for constructing physical culture and health process. V. B. Zinchenko and Yu. O. Usachev (2011) indicate that the concept of "technology" in the context of the health-oriented focus of physical education, "covers the paradigmatic foundations of special knowledge and practical experience in the implementation of physical culture and recreational potential of different (both traditional and new), as a rule, innovative forms of motor activity, using modern means their methodological support and control".

Under the term "technology", we must understand the set of methods for changing the properties of the object of influence. In essence, it is a way of organizing well-balanced organizational, material, informational and human resources of health services industry. It covers the entire set of processes of maintaining health and formation of high physical conditions of consumers of services, through which the integrity of training, physical development and personal development, regulating the operational composition of the content of motor activity of people of all ages is realized. Linguistically, the concept of "fitness technology" can be defined as an independent social phenomenon, which consists from the regular usage of available types of motor activity and

available physical activity during physical training sessions for the purpose of preservation and strengthening of health, improving physical fitness level and physical workability of students.

"Fitness technology" is a pedagogical process that includes the content, means and methods of modern varieties of physical culture, sanative areas and systems of physical exercises for the physical perfection of students, enhancement and maintenance of mental and physical efficiency in everyday life, training and future professional activities.

Analysis of scientific works, which deal the concept of "fitness technology", allows us to conclude that there is no single point of view on its term. M. M. Bulatova and Yu. O. Usachov (2008) under the term "fitness technology" understands the process of using various means of physical education with a health purpose. In her opinion it is a scientific discipline, which develops and improves foundations of methods of physical culture and recreation classes.

In practice, "fitness technology" in the physical education of students is used through fitness programs as forms of motor activity, specially organized within group or individual (personal) classes. Classes may have a health-conditioning orientation to reduce the risk of developing diseases, achieve and maintain an adequate level of physical condition or promote the development of motor abilities for the purpose of sports improvement of students. V. I. Grigoriev (2010) notes that "fitness technology" is a set of scientifically grounded methods and methodical means aimed at improving the efficiency of the sanative process, meeting the individual needs of participants in the exercises in activity, formation of positive emotions, a positive attitude towards a healthy lifestyle and social performance.

V. B. Zinchenko and Yu. O. Usachov (2011) define the concept of "fitness technology" on the one hand as the process of using various means of physical education with sanative purpose, on the other hand as scientific discipline that develops and improves the basis for methods of conducting physical culture and recreation classes. V. A. Romanov, O. P. Panfilov, V. V. Borisova (2013)

consider "fitness technology" as a modern comprehensive recreational directions of physical culture and systems of physical exercises (rhythm, rhythmic gymnastics, aerobics and its varieties, stretching, bodyflex, pilates) aimed at physical improvement of the population, enhancement and maintenance of mental and physical capacity in everyday teaching and labor activity, formation of physical and sports culture.

O. G. Saikina (2005) states that fitness technology in education increases the level of traditional exercise by physical culture, produces positive emotions, satisfies the needs of the child in strengthening health in forming a positive and active attitude to a healthy lifestyle, success and prosperity, compliance with the modern lifestyle, contribute to development of motor abilities of students, their physical development and physical preparedness. These are technologies that provide effectiveness in fitness classes, they include a set of scientific methods, steps, techniques, formed in a certain algorithm of actions that are implemented in a certain way in the interests of improving the efficiency of the health process, which ensures the guaranteed achievement of the result, based on free, informed and motivated selection of physical exercises using innovative means, methods, organizational forms of fitness classes, modern equipment and tools. These methods encompass various types of classical and dance aerobics, step aerobics, fitness yoga, stretching and author's respiratory practices.

Scientists interpret the term "fitness technology" ambiguously, due to the fact that fitness combines not only a large number of physical activity types, but it also includes rational nutrition, psycho-emotional self-regulation, disease prevention and other components of a healthy lifestyle. For all different formulations, the repetition of the individual structural elements of this concept is quite noticeable. The most commonly mentioned characteristics of fitness technologies, such as the formation of a healthy lifestyle, prioritization of sanative fitness, aimed at health promotion, the use of physical exercises to improve the physical qualities of students, correction of body posture

disorders, psychological regulation and self-regulation, balanced nutrition, refusal from bad habits. Most of researchers in the content of the concept of "fitness technology" distinguish a lifestyle that helps to ensure a high-quality life with a high level of physical and mental health, to be in harmony with the outside world (Beliak, 2014; Buinova, 2004; Davydov, 2001; Griban, et al., 2018; Hawley, & Franks, 2000; Mozolev, et al., 2019; Usachov, 2006; Zhamardiy, et al., 2019).

Data obtained as a result of the content analysis of the concepts of "fitness", "sanative fitness" and "fitness technology", allows us to consider fitness technology as an integral entity, a multidimensional result of physical training of students, which involves the implementation of a pedagogical task to strengthen their health due to the implementation of fitness programs using specially organized forms of motor activity of personal orientation.

The conducted analysis of scientific and methodological literature (Borilkevich, 2003; Bulatova, & Usachov, 2008; Dobrodub, 2011; Grigoriev, 2010; Ivashchenko, Blagoy, & Usachev, 2008; Romanov, Panfilov, & Borisova, 2013) has allowed us to highlight a number of common characteristic features of modern scientifically sound fitness technologies: the focus on the achievement of fitness goals (sanitation, improvement of physical and mental development, physical capacity, development of physical abilities); innovation (priority use of innovative means, methods and forms of conducting classes, modern inventory and equipment); integration and modification (integration of means and technologies from different types of physical culture in both domestic and foreign countries, their modification); variation (variety of tools, methods, forms of classes); mobility (rapid reaction to the demand of population for certain types of motor activity, the emergence of new inventory and equipment, changes in external conditions); adaptability to contingent, simplicity and accessibility (simplicity and accessibility for those who are engaged); aesthetic expediency, usage of art (musical accompaniment, elements of choreography and dance), orientation towards the upbringing of the "school of movements"; emotional orientation (mood

increase, positive emotional background); monitoring (medical and pedagogical control in the process of classes); performance (satisfaction from occupation).

Accordingly, the main directions of health developmental activity in physical education classes should be: rational organization of the educational process for the physical education of students with the use of fitness technologies; creation a well-developed university environment; rational organization of physical education; educational work with students, aimed at forming the value of health and healthy lifestyles, disease prevention and monitoring of health.

CONCLUSIONS.

Based on the analysis of scientific, scientific-methodical and special literature in the field of pedagogy, psychology, theory and methods of physical education, sports and human health, we isolated and unified the main views of scientists and formulated the our own interpretation of the concept of "fitness technology".

"Fitness technology" we understand as a rational way of purposeful interaction of participants in the pedagogical process based on varieties of motor activity aimed at obtaining the maximum possible health effect and realization of human health needs and careful attitude towards health through conscious regulation of physical activity.

The difference between fitness technology and health-saving, recreational and sanative education technology is that main means of fitness technology are fitness equipment, fitness complexes and fitness programs that are geared towards harmonious development, increase of motor activity and functional capabilities of students.

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DATA OF THE AUTHORS.

- 1. Valery Zhamardiy.** Ph.D. in Pedagogics, Lecture of the Department of Physical Education and Health, Physical Rehabilitation, Sport Medicine, Ukrainian Medical Stomatological Academy (Poltava, Ukraine). E-mail: shamardi@ukr.net
- 2. Olena Shkola.** Ph.D. in Pedagogics, Associate Professor, Head of the Department of Physical Education, Municipal Establishment "Kharkiv Humanitarian and Pedagogical Academy" of the Kharkiv Regional Council (Kharkiv, Ukraine). E-mail: alesikk1974@gmail.com.
- 3. Sergiy Bezpaluy.** Ph.D. in Physical Education and Sport, Associate Professor, Professor of the Department of Weapon Training, National Academy of Internal Affairs (Kyiv, Ukraine). E-mail: s_bezpaluy@ukr.net.

4. Bohdan Kalynovskyi. Doctor of Law, Associate Professor, Head of the Department of Constitutional Law and Human Rights, National Academy of Internal Affairs (Kyiv, Ukraine). E-mail: kalinbogdan@ukr.net.

5. Olena Vasylenko. Ph.D. in Pedagogics, Associate Professor of the Department of Theory and Methods of Pre-School Education, Municipal Establishment "Kharkiv Humanitarian and Pedagogical Academy", Kharkiv Regional Council, Ukraine. E-mail: velen1981@ukr.net.

6. Iryna Ivanochko. Ph.D. in Law, Associate Professor of European Law Department, Ivan Franko National University of Lviv (Lviv, Ukraine). E-mail: iryna.ivanochko@lnu.edu.ua.

7. Nadya Dovgan. Doctor of Pedagogical Sciences, Professor of the Department of Horting and Rehabilitation, National University of the State Fiscal Service of Ukraine (Kyiv, Ukraine). E-mail: dovgan_n61@ukr.net.

8. Igor Malynskyi. Ph.D. in Physical Education and Sport, Professor, Professor of the Department of Horting and Rehabilitation, National University of the State Fiscal Service of Ukraine (Kyiv, Ukraine). E-mail: horting@meta.ua.

9. Oleksandr Danylenko. Ph.D. in Pedagogics, Head of the Department of Navigation, Danube Institute of the National University "Odessa Maritime Academy", Ukraine. E-mail: obdan@i.ua.

10. Grygoriy Griban. Doctor of Pedagogical Sciences, Professor, Professor of the Department of Physical Education and Sport Improvement, Zhytomyr Ivan Franko State University (Zhytomyr, Ukraine). E-mail: gribang@ukr.net.

11. Kostiantyn Prontenko. Doctor of Pedagogical Sciences, Associate Professor, Associate Professor of the Department of Physical Education, Special Physical Training and Sport, S. P. Koroliov Zhytomyr Military Institute (Zhytomyr, Ukraine). E-mail: prontenko-kostya@ukr.net.

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