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PECULIARITIES OF MARTIAL ARTS TRAINING TECHNIQUES FOR STUDENTS OF HIGHER EDUCATION INSTITUTIONS

The purpose of the study is to determine the main characteristics of martial arts training techniques as a factor in the formation of physical abilities of student youth and the scientific substantiation of the means of positive influence of martial arts, which contribute to the education of young people in patriotic skills, values of a healthy lifestyle, comprehensive development, increasing the level of health according to the method of the species martial arts sports. The article presents material on the concept and approaches to the classification of physical exercises and methods of martial arts for students of higher education institutions. As a result of the study, it is possible to conclude that the practical significance of the obtained results lies in the introduction into pedagogical practice of the method of raising schoolchildren's interest in physical education in a general secondary education institution, which includes various forms and methods of educational work, methodological recommendations for raising schoolchildren's interest in physical education classes in a general secondary education institution.

The obtained results will be useful to class teachers, teachers of physical culture and defense of Ukraine, leaders of sports clubs and sections on combat horting, students of higher education institutions, teachers of higher education institutions in physical education and sports when teaching the theory and methods of combat horting, physical education, special courses for teachers in the system of postgraduate pedagogical education. research materials can be used in training courses for physical education teachers and heads of sports sections in the system of postgraduate pedagogical education, as well as during the preparation of training programs, methodological manuals and recommendations.

Key words: martial arts, students of higher education, physical education, physical exercises.

Туряниця І., Соболєнко А. Особливості техніки навчання бойових мистецтв для студентів закладів вищої освіти. Метою дослідження є визначення основних характеристик техніки навчання бойових мистецтв як чинника формування фізичних здібностей студентської молоді та наукове обґрунтування засобів позитивного впливу бойових мистецтв, що сприяють вихованню у молоді патріотичних навичок, цінностей здорового способу життя, всебічного розвитку, підвищенню рівня здоров'я за методикою виду спорту бойових мистецтв. В статті викладено матеріал щодо концепції та підходів до класифікації фізичних вправ і методик бойових мистецтв для студентів закладів вищої освіти.

Ключові слова: бойові мистецтва, здобувачі вищої освіти, фізичне виховання, фізичні вправи.

Formulation of the problem. The article presents a method of effective training and improvement of technique in martial arts using a mathematical matrix of training. learning techniques, matrix, improvement, martial arts, structure of the process. What is the way to master the technique, can it be imagined as a smooth, gradual ascent to the goal? The accumulated practical experience and its theoretical understanding give the right to say: mastering the technique is not a monotonous and uniform process, it has degrees, leaps, and can be divided into stages. What are these stages? In the definitions of different authors, they are close, similar, but in many respects they do not coincide. There is no unity of opinion here.

Analysis of literary sources. Considering physical exercises as a motor skill, A. M. Krestovnikov identified three phases: 1) studying individual elements and combining a number of individual partial actions into one integral action; 2) elimination of unnecessary movements and excessive muscle tension; 3) further improvement of motor skills by specifying the activity of a number of afferent systems.

A very important note: "depending on the complexity of the movements, the number of phases in the formation of a motor skill can change." In general, this is closer to sequential pedagogical tasks than to the disclosure of the stages of the

formation of a skill in physiological and psychological terms. V.S. Farfel [4] believed, that "the first stage of the formation of a motor skill is the improvement of the sensitivity of the afferent system and the acceleration of the response to afferent impulses from the central nervous system". These are typical physiological features. Next, he drew attention to the transition from irradiation (excessive spillage of excitation) to precise dosing of pulses.

Three stages of the formation of a dynamic stereotype are described in the light of changes in lability and assimilation of rhythm: 1) growing and unsurmountable discoordination (irradiation of excitement); 2) learning the rhythm; 3) persistent motor stereotype. Stages: 1) generalization of reflex responses; 2) their clarification; 3) maximum coordination - highlights N.U. Zimkin, naming the phases of 1) generalization; 2) concentration of inhibitory-excitatory processes and 3) stabilization (or automation) (textbook "Human Physiology"). However, in his definition of human motor skills, M.M. Yakovlev emphasized its specificity: "in humans, a motor skill is an acquired form of a conditioned reflex motor reaction that is formed by the interaction of the first and second signal systems."

Presentation of the main research material. Highlighting only two stages of the formation of a conditioned reflex (generalization and concentration), they warn: "we cannot yet connect the indicated stages in the formation of conditioned reflexes with various, more numerous stages of the formation of skills, motor skills, which differ in the pedagogical process." Here, apparently, the authors for the first time persistently indicate the difference between the physiological stages of the formation of a conditioned reflex and the formation of a dynamic stereotype, on the one hand, and the formation of a human motor skill, on the other hand. The same line was developed in detail by V. D. Maznichenko, who showed the correspondence of the stages of learning to the stages of formation skills. It should be noted that all the above definitions are completely derived only from the physiological mechanisms of the conditioned reflex or the system of unconditional and conditioned reflexes of the dynamic stereotype. Apparently, the mechanism of temporal communication was accepted here as a comprehensive explanation of mastering the technique. Currently, the reflex theory has gone through a difficult and rapid path development, enriched with new ones we are experimental data, new ideas, new approaches. Modern reflex theory under the influence of new neurophysiological concepts has taken a significant step forward.

M.O. Bernstein [2], denying the reflex theory as the basis of all life activities, including motor activities, developed the theory of level construction of movements based on the mechanism of sensory corrections in case of deviations from the programmed solution of the motor task. However, it is now almost universally recognized that the complete juxtaposition of the reflex theory and the theory of the biology of M.O.'s activity is invalid. Bernstein. Now it is important for us to appreciate the most important thing that distinguishes modern views on movement control. Table 1 Stages of skill formation and stages of training (according to V.D. Maznichenko).

In his main monograph "On the Construction of Movements", M.O. Bernstein [2] defined a motor skill as a coordination structure, which is the mastered ability to solve one or another type of motor task. The entire process of building a motor skill was divided by M.O. Bernstein [2] In the first period (without a special name), the leading level of movement construction, movement composition, necessary corrections and the process of automation (switching, background corrections of movements at lower levels) are established.

If all previous authors believed that the automation stage ends the entire formation of a skill, then here it ends only the first period, and this is extremely important. In the second period (stabilization), levels are activated, the motor structure is standardized, and the motor act is stabilized (stability against deviation). The leading level is determined by the goal of the motor task, and in almost all motor actions of the athlete, it is the cortical level of "visual action". The motor composition is established by imitation, by explanation with demonstration - with the inevitable individualization of movements. Establishing corrections includes the search for sensitive control over the course of movements with using "backgrounds" (corrections of subordinate movements that can be used independently) and the formation of "automatisms" (specially created corrections of grassroots levels to serve the leading level - the semantic structure of the action).

Here the automation that completes the first period continues in the second; there is the use of old backgrounds and automatisms, as well as produced new ones that qualitatively change the control of movements. The second period of building the skill begins with the activation of the coordinating elements of the skill among themselves, the elimination of differences and reconciliation between them. Standardization processes are taking place in parallel and together. By them here is understood the preservation of stable, standard forms of movement within the limits of variability that is allowed (preservation of automation).

This also includes methods of overcoming reactive forces (binding, exclusion, use). In addition, M.O. Bernstein [2] singles out stabilization processes that provide resistance to disruptive influences. It is very important that both standardization (reduction of variability) and stabilization (expansion of the range of permissible variability) lead to an increase in the stability of the motor act. So, in the most condensed form, the main stages of building movements based on the principle of sensory corrections. The most important thing in this skill development is "not memorizing a constant formula of motor impulses." This fundamental position leaves an imprint on the entire sports pedagogy: the search should not be for a constant way of solving a problem, but for the process of solving this problem in variable ways.

These provisions oppose the incorrect, simplistic view of stereotyping in reflex theory, as the supposedly absolutely exact repetition of the same movement in all conditions. But these provisions do not contradict the idea of dynamic stereotyping as a plastic, adapted system in the work of the brain. Moreover, new views, correctly understood and applied, concretize and develop the concept of dynamic stereotyping, as about adapted systematicity. According to D. Donsky [3], the issue should be resolved differently. "There cannot be, under the mentioned conditions, typical, the same for all periods, stages or stages. But performing in different combinations and sequences are essentially similar processes. And these processes solve certain, objectively arising tasks.

Therefore, it is not so much about the periodization of learning in general, but about the setting of real pedagogical tasks". Three such main groups of tasks can be distinguished: this is familiarization with the motor task and the proposed best

way to solve it; mastering the basics of the solution method; effective application of the method of solving the motor task. And these pedagogical tasks will arise in this sequence more than once. As the subsystems and the whole system of movements are formed in the development along an upward curve (as in a spiral), these tasks will probably have to be set more than once, but, as a rule, each time at a higher level levels. These groups of tasks include three stages of learning: - studying the situation (reconnaissance); - solving the problem; - memorizing the solution. For more successful learning, you can and should use the principles of so-called programmed learning, even if no technical devices are used. .

All the material of the learning process is strictly divided into "elementary acts of learning". The analysis of the structure of the material itself and the successful assimilation of each individual task in their sequence can serve as a basis for dismemberment of the educational material. Further, effective control over the learning of each elementary task is needed, and urgent control. If the task is completed, if it is solved, then it is necessary to move on. If not, then further promotion is in vain.

It is the postoperative monitoring of absorption that provides the necessary individualization. The success of such training is determined by the culture of analysis of both future tasks and methods of their implementation. The culture of analysis is considered here as a deep understanding of the nature of movements, the ability to reveal the course of their changes, to predict. Mastering new movement systems in sports largely depends on the level of physical fitness. It goes without saying that for many types of equipment, strength, speed, and endurance are required to be sufficiently developed. It will be about the reserve of motor skills or skills. L.A. Orbelly made two very important points. 1). First, when forming a new system of movements (speaking in modern language), "old elements of activity" can be used. It can be added that they must be somehow rebuilt, reworked, adapted to the solution of a new problem. 2). Second, "new forms of behavior require that old forms be inhibited." We are talking about subsystems that interfere with the performance of the task of the new system under construction. By the way, both use and braking will probably be carried out more than once. And these processes, apparently, will manifest themselves to varying degrees in other performance of the motor action. At the same time, we are talking about the formation of completely new subsystems that meet the requirements of the new task (automatism), according to M.O. Bernstein [2]).

Finally, from the system-structural point of view, all subsystems will begin to operate, forming a new system based on: 1) . Use and adaptation of suitable old ones; 2). Suppression of unfit old people; 3). Formation of completely new subsystems. From the point of view of physiology, permanent, natural connections (unconditioned reflexes) are embedded in these subsystems; to them are added temporary connections formed during life (conditional reflexes of many orders, built on top of each other). Researches of recent decades (in the light of new ideas of cybernetics) show that temporary (conditional) connections are probably not the only physiological mechanism underlying the complex control of motor acts. When forming complex systems, emergentness is revealed.

New properties appear, absent in subsystems and their elements. "The whole has such properties that none of the parts have separately, but these properties arose due to the presence of these parts in the whole" [58]. There is an extraordinary enrichment of bonds in the system, which during its interaction with the environment "transform the system that passively obeys external actions into a relatively more active system, one that appropriately adapts to conditions and develops" [1]. If this is characteristic of cybernetic inanimate devices, it is clear that this regularity is manifested in the motor apparatus of living organisms. All practical activity on the "refinement" of technology is a constant practical analysis and synthesis in their change and combination, management of differentiation and integration tendencies, and in the regulation of voluntary human movements, the role of the second signaling system (language irritation and reinforcement when mastering a skill) is very important. When talking about sports technique, they often mix different concepts and change its meaning.

It is absolutely correct when sports technique is understood as a system of movements, as a real action of an athlete. Sometimes sports technique is considered as the presence of skills and abilities, capabilities of an athlete. Possibilities, of course, are revealed in action. But technology is not the possibilities themselves, which still need to be realized in reality: either it will work or it will not work. Technology is the action itself, after all. It is wrong to believe that sports technique is only a reflection in our consciousness of action, knowledge about the system of movements [1]. The triangle in fig. 1 demonstrates a progressive and systematic increase in the potential of the cardio-respiratory and neuromuscular systems of the body during the development of motor skills in martial arts. The morpho-functional basis of such a system is the formation of a systemic "structural trace" [180] in response to physical exertion. This is manifested by an increase in the activity of motor center neurons

Conclusions. Thus, relying on special literature and the results of own research, one of the main sections of judo theory - teaching technical actions - can be presented as follows he eighth phase, individualization, proposed by us. After this phase, the throw (in judo) becomes the "crown" in the performance of the athlete with his individual style of activity. By "crown" execution, we understand the execution of the speed-force parameter of the movement and the anticipatory parameter of coordination in the leading range of execution (80-100% of the maximum values) with a 95% probability of execution. When working out the crown technique, rectangular matrices that set the dosage, pace of movement and resistance of the opponent showed high efficiency in practice. Training is planned every day with a change of horizontal and vertical directions, which introduces an element of novelty into each training of athletes and lowers the threshold of mental fatigue from exercise.

The use of this technique halves the term of acquiring motor experience. The direction of further research is the use of high-speed video cameras to build digital models of technical actions.

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