

Problems of Inclusive Education in the Field of Physical Culture in Technical University

S.V. Pryakhin

MIREA - Russian Technological University, Moscow, Russia

Abstract

At all phases of formation of a motor skill, the formation of both neuromuscular and vegetative components takes place. At the same time, vegetative reactions are becoming more specific and reflect requests from the motor sphere. The present article discusses the formation of a sequence of mental action programs, allowing to improve the quality of inclusive education in the field of physical culture at the university.

Keywords: physical education, inclusive education, mental activity.

1. Introduction

A person with disabilities who is not recognized as disabled by the law may have special educational needs [1, 2]. It includes, among other things, the possibility of studying at a higher educational institution according to an adapted educational program. The concept of individuals with disabilities covers the category of persons whose livelihoods are characterized by any restrictions or lack of ability to carry out activities in a manner or within the framework considered normal for a person of a given age. This concept is characterized by excessiveness or insufficiency compared with the usual behavior or activity, and can be temporary or permanent, as well as progressive and regressive. Persons with disabilities are those with problems in physical and (or) mental development, having significant deviations from normal mental and physical development, caused by serious congenital or acquired defects and, therefore, need special training and education conditions.

Physical exercise is a system of unconditionally reflex movements of a motor action that is controlled by the mind and will of a person under the control of consciousness and higher nervous activity in order to fulfill the stated pedagogical task.

2. Research method

At the initial stage of training, the most important problem of organizing training of cognitive and motor activity of students and athletes, which includes three tasks, is solved. The essence of the first task is to develop knowledge about principle of learning motor actions in students. A principle is a clause that determines knowledge of the content of the subject of study, the methods of holistic and separate learning, and organization of the learning process. The essence of the second task was to generalize, and later thoroughly acquaint students with the mechanisms of thinking and methodological techniques for mastering knowledge of performing motor actions. The third stage of training is to ensure that students are able to form motor skills based on

knowledge and acquired experience. The teacher is obliged to know that in addition to the acquired knowledge of motor sensory analyzers and the principle of learning how to perform a motor action, students who are trained must have motor experience. Under the motor experience it is more convenient to understand the sensations of movements in the process of performing the motor of any exercise [3]

In the future, in process of learning, students will gradually form a dynamic stereotype (skill) of performing motor actions. Each motor action includes: the amplitude of movements: legs, arms, head and torso; the direction of the developed efforts of the legs, arms, head and torso, the speed of movements of the arms and legs; continuity and succession of the developed efforts of the legs and arms, etc.; reduction in the number of movements of the legs and arms during exercise.

3. Results and analysis

Following the physiological principles, we can conclude that the mental program of action is formed and implemented in the following sequence:

- at the first stage, under the influence of light, the retina of the visual analyzer perceives the elements of the content of the game task from 2 or 3, etc. alternatives;
- at the second stage, the visual analyzer processes the information into a bioelectric signal;
- at the third stage, bioelectric information via neural networks through synapses (intercalated neurons) is transmitted to the cortex of the big hemispheres;
- at the fourth stage, information is reflected in the primary sensory field;
- at the fifth stage, information from the first sensory field passes to the second sensory field, in which information is finally recognized;
- at the sixth stage, this information enters all analyzers of the cerebral cortex;
- at the seventh stage, this information enters all parts of the cerebral cortex and blocks: memory, representation, thinking, imagination, subconsciousness and consciousness, and the sensory

motor field of the cerebral cortex;

- at the eighth stage, under the control of consciousness, a block of memory, all analyzers and all parts of the cerebral cortex, all information received on the sensory-muscular field forms the mental-motor program of the technique for performing the action;
- at the ninth stage, with the participation of external and internal auditory analyzers in the sensory fields of the cerebral cortex, the image of the word is recognized, the bioelectrical information of which also enters the sensory-muscular field and also forms the mental-motor program for performing the action;
- at the tenth stage, the formed bioelectric program of action, taking into account the external conditions of activity, is transmitted via neurons through synapses to the spinal cord. The spinal cord performs the functions of a bioelectric system, which adopts a bioelectric program and directs its bio-currents to the executive muscles to perform a whole response motor action.

If the response action is performed by a child who was not in a similar situation, then he makes a mistake and cannot adequately react, for example, to a flying ball and falls. The neurons of the central nervous system that perform the functions of memory and are associated with blocks of thinking, representation, and imagination will remember the conditions of the child's task and the result of correct or incorrect execution of the motor action. Gradually, the child accumulates experience and, under the control of consciousness based on the law of reflection, forms memory and thinking for the optimal performance of such a motor action. The situation is corrected by the central nervous system and the memory block with the participation of all parts of the cerebral cortex. Gradually, the accumulated similar information in the memory unit, under the influence of the central nervous system, is corrected, selected and again sent to the memory unit. If it happens that a similar situation arises in front of the child, then, under the control of consciousness, it develops an adequate program for the formation of a response. This motor program is implemented through the spinal cord by a system of movements from individual muscles of the body, legs, arms, etc. baby So gradually, the child learns adequate activity in such situations and forms mental and muscular memory, which is associated with performance, imagination, subconsciousness, consciousness, etc.

In turn, the motor program of the spinal cord is realized on the basis of alternate contraction and relaxation of flexor and extensor muscles as a result of the interaction of excitation and inhibition processes in the corresponding centers of the spinal cord under the influence of impulses entering the brain from proprioceptors. The spinal cord also carries reflexes from internal organs to skeletal muscles, from internal organs to receptors and other skin organs, etc. It has been revealed that the motor program of the spinal cord is implemented on the basis of alternate contraction and relaxation of flexor muscles and extensor muscles as a result of interaction excitation and inhibition in the corresponding centers of the spinal cord under the influence of impulses entering the brain from proprioceptors. Reflexes from the internal organs to the skeletal muscles, from the internal organs to the receptors and other skin organs, etc. are also performed through the spinal cord. It is known that the central motor program is considered as a prepared set of basic motor commands and ready-made corrective subroutines that implement movements taking into account the current afferent signals and information of the central nervous system. Excitation to perform movement occurs in the subcortical and cortical motivational zones. The idea of movement is formed in the associative zones of the cortex. The formation of the movement program occurs with the participation of the basal ganglia and the cerebellum acting on the motor cortex through the nuclei of the thalamus. The motor cortex and the underlying stem and spinal centers implement a program of action. It is known that motor memory contains generalized classes of motor programs that are implemented in the process of performing a motor task in accordance with the claimed human needs. The program is modified in accordance with the situation. Movement of the same type is performed faster or slower with a larger or smaller

amplitude. It is known that the same program can be performed by a different set of muscles. For example, a person's handwriting while writing maintains the characteristic features of writing with his left or right hand.

Under the norm of physical fitness in the framework of the program on physical culture, you should understand the result in a physical exercise that meets the estimated requirements of physical fitness, which allows you to project existing techniques on the field of inclusive education. In sports, this is the limit value of the result, which makes it possible to attribute it to a specific classification group.

It is necessary to allocate comparative, individual and due norms. Comparative norms are determined by comparing the indicators of physical fitness with the average standards for any one homogeneous group (for example, for one age and gender). Individual norms are based on a comparison of the indicators of preparedness in one person over time (for example, indicators of the state of fitness). In determining the proper standards, it is reasonable to proceed from the requirements for physical fitness, which is necessary for solving specific tasks of professional activity, including inclusive features.

The criterion of rationality of loads in physical culture, i.e. their rational structure and size, - achieving and maintaining a standard level of physical fitness (motor skills). Concrete in the regulation of loads requires consideration of the issue of standards of motor skills (physical fitness). The criteria for the standard of motor skills of students in the framework of inclusive education should not be a comparative norm based on average standards, but a proper one based on its correspondence to a high level of health, professional and everyday working ability. Consequently, to substantiate the standard of motor quality, objective data are needed, according to which it would be possible to establish that students who completed the standards of physical fitness have a higher level of health, i.e. higher resistance to disease factors and fatigue than those who did not comply with regulations.

4. Conclusion

The improvement of motor functions in ontogenesis occurs both due to the maturation of congenital mechanisms that continue for the first years after birth, which are involved in coordination of movements that form the basis of programs of certain specific motor acts. Coordination of new habitual movements has characteristics that distinguish it from coordination of the same movements after training. Motor skill is a form of motor actions developed by mechanism of the conditioned reflex (dynamic stereotype) as a result of the corresponding systematic exercises. The simplest motor skills are the ability to walk and run, as well as swim, the ability to throw and catch, etc. It is obvious that people with different motor skills acquire new ones in different ways. A qualified athlete acquires a new combination much faster than a novice. The formation of motor skills can be divided into three phases: generalization, concentration, automation. The generalization phase is characterized by the fact that extra muscle groups are involved in the work, there is an unreasonably high strain on the working muscles, etc. The movements are stiff, angular, poorly coordinated and inaccurate, uneconomical. In the phase of concentration, excessive tension disappears, movements become precise, economical, free, i.e. concentration of excitation occurs in the desired areas of the brain. In the automation phase, the skill is so refined and fixed that the execution of movements becomes, as it were, automatic and does not require mind control. This skill is highly stable. Automation of skills makes it possible to simultaneously perform several motor actions, which is especially important when building programs for inclusive education.

References

- [1] Chermit K.D., Zabolotny A.G., Pryakhin S.V. Squatting Practices // Theory and Practice of Physical Culture. 2018. No. 4. S. 16.
- [2] Kudzh S.A., Kochetkova L.N., Nazarenko M.A. The philosophy of quality management // Russian Technological Journal, 2015. 4 (1), P. 1-8.
- [3] Rodionov A.V., Topyshov OP, Uskov V.A. Mechanisms for solving operational-tactical tasks in team sports // Theory and practice of physical culture. 2002. № 6. P. 31.