

DEXTERITY, MOBILITY AND FLEXIBILITY, ESSENTIAL COMPONENTS IN THE DEVELOPMENT OF THE MILITARY STUDENTS' MOTOR SKILLS

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Abstract: Ensuring higher indices of development for the basic motor skills, essential components of the motor capacity, is an essential condition of performance in the specific activities carried out by the students in military educational institutions, but to fulfill this objective, activities to consolidate and perfect the body's intermediary capacity are necessary, i.e. the improvement of the indices that characterize dexterity, mobility and suppleness. Therefore, the motor capacity is formed on the one hand by the basic motor qualities of the body, the coordination capacities, the intermediate capacities, as well as the basic motor skills and utilitarian-applicative skills. All these components have their particularly important role in motor activities; between them there is a strict conditionality link. The paper presents aspects and opinions regarding the body's intermediary capacities and underlines the role of their development in the training, consolidation, development and improvement of motor qualities as well as of the motor skills and aptitudes, specific to ensuring the motor capacity of military students.

Keywords: motor skills, coordination, intermediate capacity, effort capacity, utilitarian-applicative skills

1. Introduction

Perceived as the essence of the external manifestations of the brain activity specific to the human body, motricity is defined as expressing an innate and acquired ability of the human body to perform certain movements of a physical nature. Due to some systems of the body involved in this activity, namely the osteo-articular system and the muscular system, which act in an indispensable connection with other systems and functions of the body, the locomotor apparatus successfully fulfills its tasks.

The motor capacity represents the native and acquired movement qualities through

which efforts of different intensities and durations can be made, being influenced by the psychic processes and biochemical processes in the body, as well as by the level of its physical development [1].

The acquisition of some knowledge specific to the development of basic motor qualities, as well as the consolidation and improvement of basic motor skills and utilitarian-applicative skills, which represent the goals of physical education and sports activity, is achieved through an intense activity. The components of the motor capacity are schematically presented in Figure no. 1.

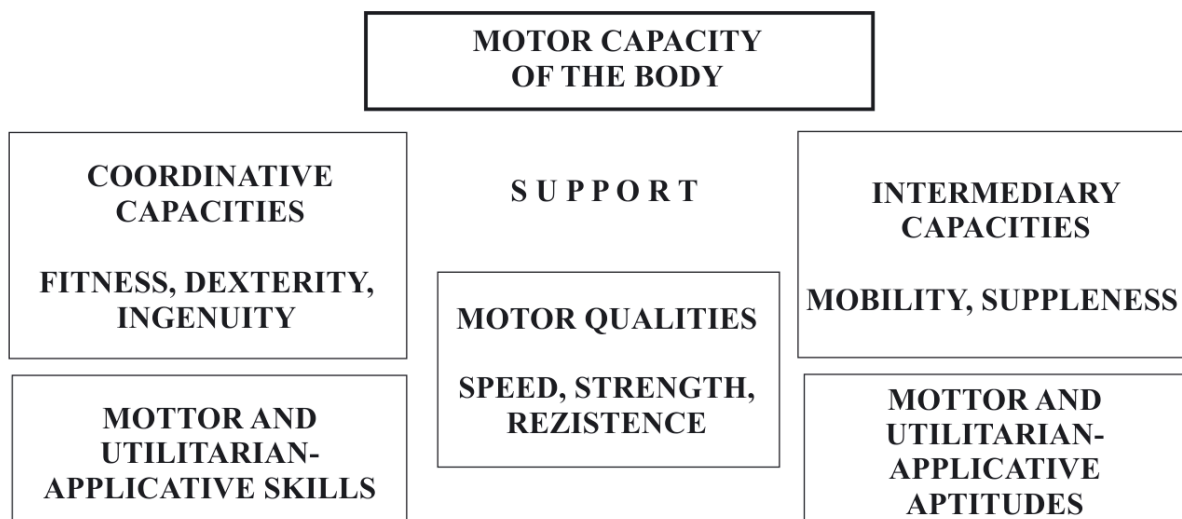


Figure 1. Scheme with the components of the motor capacity of the body
Source: Author

Of particular importance in carrying out the motor activity is the body's capacity for physical effort. This involves the execution and maintenance of a motor activity for as long as possible at certain parameters. Of course, the more the basic motor qualities are developed, the greater the capacity for physical effort, which leads to the acquisition of the basic motor and utilitarian-applicative skills at higher performance standards.

2. Dexterity, mobility and suppleness. Their characteristics and role in the development of the students' motor skills

The intermediary capacities of the body have two essential components: mobility and flexibility.

2.1. Dexterity

The complexity of this motor quality is given by the multitude of the existing definitions and also by its implications from the point of view of conditioning, training and perfecting the motor acts and actions. It has a wide area of use, both in everyday activities but especially in sports activities. Dexterity can be defined as *"the aptitude to master motor coordination and make the transfer from certain actions to others in accordance with the*

requirements of the environment in continuous movement" [2].

This motor quality is required in specific learning and improvement activities of the motor actions that require a certain degree of coordination. From what has been presented, three essential elements that characterize dexterity can be distinguished:

- ✓ the capacity of the body to acquire and learn certain elements;
- ✓ the capacity of controlling the movements specific to the different motor actions;
- ✓ the capacity of the movement to adapt and transfer.

The value of dexterity is conditioned by several factors of a biological, psychic, motor, and so on nature.

From a biological point of view, dexterity is dependent on the quality of the central nervous system (mobility of the cerebral cortex).

Such features can allow the cerebral cortex to select the information received by the analysers of sight, hearing, equilibrium and retain the significant ones. Thus, through sustained training, the body has superior possibilities of integrating the acts and motor actions in space and time coordinates.

Also, the extremely important equilibrium in the manifestation of dexterity is conditioned by the quality of the vestibular apparatus. Of great importance is the ability to rapidly contract and relax muscles, as well as to coordinate the activities of large muscle groups.

From a psychological point of view, the ability to anticipate, memory, creative thinking, the ability to adapt, the will represent elements that substantially contribute to the conditioning of the value of this motor quality. From a motor point of view, the range and variety of motor skills and utilitarian-applicative aptitudes mastered by the individual is extremely important.

They are closely related to the level of development of the other motor qualities, each of them involving aspects of coordination, regulation and integration of the body functions.

There is a link of conditionality between the motor experience of the individual and this quality, dexterity manifesting itself at higher quality indices in relation to the range and variety of the existing motor experience.

There are two types of dexterity, in accordance with the nature of the motor activities involved:

- ✓ *general dexterity*;
- ✓ *special dexterity*.

General dexterity represents the possibilities of the body to perform motor actions in a logical, rational and efficient way as a result of the native qualities of the body.

Special dexterity presents characteristics specific to the different sports disciplines or activities that involve motor acts and activities.

The forms of manifestation of dexterity are multiple, being able to analyze the skill according to the degree of complexity, the precision index of the movement in space, the speed index, the strength index, the synchronization index, as well as the resistance index.

2.2. Mobility – is defined as being the amplitude of the movements carried out around the joints. Mobility conditions the efficient performance of the technical procedures and the acquisition, consolidation and improvement of the basic motor and utilitarian-applicative skills specific to most sports disciplines, military and sports physical education assignments and sessions.

The development of mobility makes possible the maximum utilization of the other motor qualities, being considered a basic support in maximizing the parameters of the body's motor capacity.

"Mobility is the human ability to perform movements of different amplitudes with the body segments." [3]. This is expressed in degrees, knowing the fact that the segments of the locomotor apparatus make different angles between them.

The structure and type of joints determine the nature of the movements that can be performed between them and the amplitude is mainly dependent on the quality of the ligaments, tendons and muscles.

Within them, muscle elasticity has a particularly important role, since in various exercises, muscle contraction begins before stretching, ensuring the relaxation of the antagonists. Here are the factors that determine the manifestation of mobility:

- ✓ environmental temperature;
- ✓ the rhythm of the 24 hours;
- ✓ the type of joint;
- ✓ the stretching capacity of the capsulo-ligamentous apparatus.

2.3. Suppleness – can be considered an important quality of the motor capacity, being at the level of the other qualities [4].

Also called flexibility, suppleness is the individual's ability to perform large-amplitude movements in one or more joints [5]. Flexibility refers to two components of the locomotor system:

- ✓ joints or joint mobility;
- ✓ muscles, tendons, ligaments and their stretching capacity.

Flexibility varies depending on the joints and the nature of the effort. These differences can derive either from the anatomical particularities or from the forms of exercises specific to different sports depending on the muscle sectors employed.

Manno considers that suppleness can be classified in the following way [6]:

- ✓ *active suppleness* – resulting from the action of muscles that relax, antagonists signifying the maximum amplitude of a joint;
- ✓ *passive suppleness* – resulting from the action of inertia or body weight gravity or from the action of a partner or a device; according to the opinion of the vast majority of specialists, passive suppleness refers to the articular amplitude of an individual under the effect of an external force;
- ✓ *mixed suppleness* – determined by the interaction between active suppleness and passive suppleness under different forms.

Suppleness is conditioned by a series of factors of a physiological and neuro-physiological nature, among which the following are highlighted [7]:

- ✓ the type of the joints of the body;
- ✓ the structure of the muscular mass;
- ✓ the capacity of relaxation of the body;
- ✓ the structure of the osteo-ligamentous apparatus;
- ✓ the capacity of muscular elasticity;
- ✓ the tiredness of the body;
- ✓ the ability to eliminate stress.

In the organization of movement, suppleness has only limited effects on its regulation, without a significant involvement of energetic processes [8].

2.4. The benefits of developing the intermediary capacity in military physical education

In the training of military students, dexterity, mobility and flexibility play a particularly important role due to the multiple effects they exert on the body. They ensure the acquisition of higher quality indices of the combat skills

specific to both self-defense and other forms of fighting due to the possibility to acquire the motor acts specific to the execution of procedures in judo, karate or hand-to-hand combat at the highest possible parameters.

It is known the fact that their acquisition, consolidation and perfection depend to a large extent on the level of development of the motor qualities of the body, of the coordination qualities, as well as on the intermediary ones.

At the same time, the effects of these abilities can be found in the execution of the applicative exercises, such as throwing mine grenades or crossing obstacle courses, which are involved in the crossing of obstacles in the execution of climbing or jumping over various obstacles existing on the battlefield, in the execution of the crawling procedures or walking in equilibrium.

Passing through limited spaces that are represented by crevices, narrow windows, access doors, moving on reduced support surfaces, passing over balance beams, various bridges, parallel cables, pillars, stones, etc., requires a very good level of dexterity development, mobility and suppleness.

The role of these capacities can also be found in the execution of specific skiing procedures, where also the acquisition, consolidation and improvement of skiing skills are directly proportional to the level of development of the intermediary capacity.

In this way, a series of characteristic elements are improved, such as equilibrium, tempo, sliding or mobility of the execution, or the ways of passing over different forms of relief or terrain conditions and obstacles appearing in the mountains.

The benefits of attaining a developed level of these capacities can certainly be found also in ensuring the quality indices of the specific skills of swimming and military applicative swimming, where the complexity of the exercises specific to

equipped swimming or weapons transport demands the body's qualities to the maximum.

Of great importance is the already recognized fact that most of the aptitudes and the specific skills of the physical activity carried out by the military students depend to a very large extent on the level of development of the intermediary qualities. As I have already mentioned, there is a close connection of direct proportionality between them.

3. Conclusions

The specific contents and means for the development of dexterity, mobility and suppleness represent a useful and effective way of physically adapting military

students to the new demands imposed by the modern battlefield. The development of a model for optimizing physical training, carried out on the basis of the analysis the effects of the development of these qualities of the body, provides significant benchmarks in the projection of the planning and management of education documents in the discipline of military physical education. In conclusion, the paper tries to open new avenues of action aimed at making the activity of physical education and sports more efficient by adapting some methods and models of optimization of the physical training of the Romanian Army's future officers.

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