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## ROLE OF IMPRINTING IN PERFECTION OF PHYSICAL CAPACITY OF SPORTSMEN

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In this paper we analyze the problem of using the motor imagery practice method through imprinting as a tool for stable physical capacity training and correct technique of an advanced routine training.

**Keywords:** *imprinting, motor imagery practice, physical capacity training.*

In order to understand the role of imprinting in physical education let us consider this phenomenon from the point of view of physiology.

A special state of the nervous system known as “critical period” is essential for imprinting development. This particular state involves whole hemispheric synchronization that provokes alpha brain waves activity. Different types of brain activity prevail at different stages of human life. Thus, infants tend to have delta and theta waves where as alpha frequency range is found in children up to the age of maturation. Alpha waves activity therefore appears during the period of most active accumulation of information which is, however, accumulated regardless of its value, without criticism. Beta waves are commonly observed in grown up individuals. Brain waves of that amplitude further maintain earlier psychic structure and function. Alpha rhythms may be found in adults during deep relaxation periods. It is notable that theta, delta and at some point alpha rhythms are characteristic for mystical experience and deep prayer. Moreover, it is commonly known that such states have both therapeutic and congruent effects. During regression hypnotherapy, holotropic breathwork and intensive stressful events, the hemispheric synchronization appears and brain waves frequency range slower till theta and delta rhythms, provoking therefore the stage of critical period [3. P. 87].

Characteristic features of imprinting that differ from other forms of learning are: its appearance mainly during early stages of postnatal (parturient) development (exception is parental imprinting); its possibi-

lity of occurring only at a particular life stage (called phase-sensitive); exceptionally rapid and apparently independent of the consequences of behavior nature of learning; relatively nonreversible results and considerable influence of imprinting upon further development of animal and human behavior [4. P. 145].

In psychology, imprinting is a mechanism of memorized involved procedure, personal background that occurred at a particular critical period of development. During critical periods, psyche works so that any memorization happens subconsciously without appealing to logic. These memories then become stable behavior [5. P. 132].

In physical education, the phenomenon of imprinting can be used for physical capacity development and athletic skill training.

In 20<sup>th</sup> century A. C. Puni suggested motor imagery practice to be applied for physical capacity training. Motor imagery practice essentially consists of mental performing of physical training. Such training is better to be performed not during the state of optimal conscious focus (while cortical center is best active) but during a deeply relaxed, semi-hypnotic state which allows concentrating on learning. Such state is typical for imprinting as well. During the motor imagery practice, particular sensitive phases are created for better physical capacity training [1; 2. P. 167].

In order to understand the subject-matter of motor imagery practice, it is essential to state the difference between mental performing of physical training and the ordinary imagery ability of a human being. Motor imagery practice includes detailed and focused learning

and revising of one particular memory image through a range of mental performances.

Some sportsmen are better at picturing specific images than movements in general. In addition to mental performing of physical movements through visual images, the majority of sportsmen use mental self-evaluation of kinesthetic sensations connected with motor memory [7. P. 45].

It is highly important for every sportsman to be able to develop and improve the sensations that are connected with a particular physical movement which is, as well, an aspect of physical training. Many coaches help their trainees to force an essential level of muscle tension for the necessary muscle group in advance. Those sportsmen who need to raise their emotional pulse beat before going on their marks try to imagine themselves in corresponding competing situations. Unlikely, those sportsmen who need to reduce stress attempt to imagine themselves performing exercises comfortable conditions.

Visual and kinesthetic mental performing of physical training is recommended for gymnasts and acrobats, because for them the most essential skill is to be able to imagine the body position in any phase of a particular physical movement. Mental revising is used to help sportsmen to better learn a pattern of advanced physical movement by visual and kinesthetic mental performing.

Developing one's abilities to mental performing of various situations gradually results in a better capacity of one's memory. Instead of just memorizing specific images for their future incorporation into a whole pattern, the full pattern in its development should be created so that specific images can be later subtracted from it.

The following factors insure the motor imagery practice success:

- motor imagery practice must be performed only during the state of optimal conscious focus;
- mental performing of physical training must be done in accordance with real physical training [3. P. 89].

The technique of the performance of a sportsman in many aspects depends on his ability to use one's imagery ability and understand its principle.

Principle:

- the more precise is the mental image of a physical action, the more exact is the performed action;
- only the imagery that connects the mental image of a physical action with proper physical muscle sensations of a sportsman can be called a motor imagery;

- the effect of mental imagery considerably increases if images and patterns are formulated in concrete statements;

- while learning a new physical movement one should imagine it in slow motion;

- while learning a new physical movement one should imagine the most true to actual performance posture possible;

- during motor imagery practice, physical movements start to feel real to an extent of provoking actual unconscious movements;

- before actually starting a training one shouldn't think of the final result.

The process of motor imagery practice training should be based on well-known learning principles: logic, accessibility, individualization. Aside from all that was mentioned above, the following special principles should be considered:

- principle of motivated interest, which means taking the method seriously;

- principle of universal effectiveness. Motor imagery practice can be effective in many aspects: learning technique of performance, being primed for the performance, cultivating creative attitude towards training;

- principle of dominance of effectiveness. Mostly the effect of training can be seen in mastering spatial adaptation and then time adaptation;

- principle of delayed effect. First trainings following this method tend to give no result. It happens due to the absence of mental performing of physical training programs in cerebral cortex;

- principle of individuality. Variants of motor imagery adapting depend on personal psychological characteristics of a sportsman. Sportsmen who have strong nervous system usually perform motor imagery practice right before the start. Those who have weak nervous system start performing the practice in advance, use it more often and with better effectiveness.

- principle of effectiveness dependent on context. The best effect from mental performing of physical actions can be achieved by motor imagery training based on physical muscle images of key moments of actions, its effectiveness;

- principle of verbalization. Verbalization as speaking through one's thoughts especially when it comes to key moments of physical actions further increases the effect of mental performing;

- principle of balancing. It is a good practice to repeat the task up to five times but when it comes to difficult tasks — once [6; 7. P. 94].

**Conclusion.** To sum up, to achieve the best effect from mental performing of physical actions it is necessary to:

- 1) create a very exact mental image of a given physical action;
- 2) transfer this image to the sphere of motor imagery maintaining its high accuracy so that in accordance with its mental image the corresponding muscle groups start to function;
- 3) find an appropriate form of verbalization for the key moments of physical actions that are being performed;
- 4) one should start practical application only after fulfilling all the previous conditions when motor imagery physical action pattern becomes clear and stable. Sequential fulfillment of suggested steps must considerably intensify the process of learning of a desirable physical action.

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