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Theoretical prerequisites of psycho-physical training in physical education

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Abstract.

In this article, research provides the results of theoretical prerequisites for the formation of individual's structural components in the area of physical education. The authors believe that such prerequisites relate to the scientific achievements made by representatives of several scientific branches who have studied the mutual impact of the human body and mind. Within this context, there are considered such aspects as: the treatment to the issue of the physical in human beings through philosophy, psychoanalysis, the body-based approach in psychology, the psychosomatic approach in medicine, the psychology of development, and body-oriented psychotherapy. The authors consider that the results of the research in these areas provide evidence for specialists of physical education to assume that it is possible to form components of the mental structure through the influence on the human body (via physical exercises).

Keywords:

*physical education
organism
mental health
psychoanalysis
body-based approach
psychosomatic approach*

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Recently, the researchers' interest towards the study of psychological, psycho-physical and even psychotherapeutic possibilities of physical education has increased. The reason is that physical education appears to be successful in this context. Meanwhile, it remains unclear which theoretical foundations may be used as the basis for raising such a question as a problem. The authors have attempted to provide some answers in this article.

In this research, psychophysical preparation is considered as a part (aspect) of physical education of students which is focused on psychological and psycho-physical features related to their future professional activity [1]. As the result of such preparation, they have psychological and psycho-physical availability.

This research is based on the statement that the theory of physical education is correlated with many other sciences, and therefore should rely on principles discovered there and use their achievements. The nature of these relations is determined by the subject matter of each science and its place in the general system of science.

It is necessary to examine those scientific areas that have studied the mutual impact of the body and mental aspects since physical education is directly related to the effect on the organism and the subject of interest is mental components. Representatives of various scientific areas, such as philosophers and biochemists, examined this issue.

Philosophers began to investigate the question of the mutual influence of the human body and mental health since the 17th century. They called it a «psychophysical problem». There are two approaches for understanding: one by R. Decart and the other by G. Leibniz. R. Decart proposed a solution for the psychophysical problem within the perspective of psychophysical interaction. According to his theory, the living body is a kind of machine, while consciousness, as a separate entity from the body. On the one hand, it feels its influence (through feelings, reactions, etc.), and on the other hand, it is also able to control it (for example, through a conscious effort). To solve the psychophysical issue, G. Leibniz introduced the concept of psycho-physical parallelism. Contrary to the previous approach, it rejected

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interaction and affirmed the principle of parallel mental and physical processes.

Referring to the problem of the physical in human beings is one of the search directions of contemporary philosophical thought. Nowadays, it can be stated that there is a conceptual openness towards the issue of the human body and its acceptance as one of the most important factors of human being. O. Gomilko [2] pointed out the wrongness of a stereotype about the understanding of body, which «rejects» it to the purely natural world. She believes that a person has a physical body not just as a natural prerequisite of his or her being. Her thesis is that the body is as important constitutional aspect of a person as the mind, will, or social environment.

The idea of the psycho-physical integrity of the human being is also the foundation of such a branch of contemporary psychology that is known as psychoanalysis. According to this theory, an individual is considered as a whole psycho-physiological entity. Following this assumption, it is explained how unconscious beliefs may affect the most elementary physiological functions.

Another attempt to merge the mind and body is known in psychology as the body-based approach. Kurt Goldstein is one of the representatives of this research area [3, 4]. He concluded, through his own observations and researches, that for one to understand the functions of any part of the body, it is necessary to learn more about the general laws of the whole human organism. The mind and body are an entity. Both physiological and psychological aspects have an impact within the whole body.

Representatives of the psychosomatic approach in medicine also insist on the psycho-physical unity of a person. It is thoroughly analysed by F. Alexander and S. Selesnik [5]. They emphasise that the main principle of the modern psychosomatic approach is that the personality and the body create a single entity, and that human issues need to be considered from the perspective of the interaction of psychological and somatic aspects.

The issue of the interaction of the mental, physical, and social in a person is thoroughly considered in such a sphere

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of psychological science as psychology of development [6]. The concept of «development» refers to changes that occur over time in the structure of the body, the way of thinking or behaviour of a person as a result of biological processes that occur in the human organism or under the influence of the environment [6, p.15]. According to experts in the field of psychology of development, the development of a person is determined by the interaction of the biological, mental and social aspects. It is also noted that the environment that surrounds a person consists of a number of certain areas that constantly interact with each other and influence human development through this interaction [6, p.16].

Researchers of psychology of development identify three areas in which such development takes place: physical, cognitive and psychosocial [6, p.17]. To the physical area are referred such physical characteristics as size and shape of the body and organs, changes in brain structure, sensor capabilities and movement skills. The cognitive sphere includes all cognitive abilities and mental processes. Personality characteristics and social skills, individual style of behaviour and emotional reaction are included in the psychosocial sphere [6, p.17]. The development of a person within these three areas is simultaneous and interconnected. The authors emphasise that there is a complex interaction between different areas of development. The development is not a sequence of separate and uncoordinated changes, but is a comprehensive and systemic process, whereby changes in one area cause changes in another [6, p.18].

Thus, the research in the area of psychology of development demonstrates the complex interaction of physical, mental and social aspects in the formation of human personality.

There are also attempts at theoretical analysis of psychophysical issues in psychotherapy. First of all, this concerns such a direction as body-oriented psychotherapy. It includes a group of psychotherapeutic methods that are focused on the study of the body, the patient's awareness of physical symptoms, the study of their needs, desires and feelings in different physical conditions, and the learning of practical ways to eliminate dysfunctions in this area. There are several

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varieties of body-oriented psychotherapy, but all of them are related to W. Reich's research [7, 8]. W. Reich considered that psychological defence mechanisms and related self-protective behaviour contribute to the development of a «muscle carapace», which appears through tension of various muscle groups, hard breathing, etc. It is possible to counter psychological defence mechanisms by improving the body condition and affecting the tensed area.

According to W. Reich, the structure of the muscle carapace is formed by seven main protective segments that consist of muscles and organs of the appropriate functions. These segments form a row of seven horizontal circles that are arranged at right angles to the spine. The main segments of the carapace are arranged in the area of the eyes, mouth, neck, chest, diaphragm, stomach, and pelvis. This approach consists of «disbanding» the carapace in each segment, from eyes to pelvis. These segments are considered to be relatively independent, which can be handled separately.

The analysis of theoretical approaches provides the basis for the conclusion that in contemporary research, the concept of the mutual interaction of the human body and mental health is generally accepted. Such statement is extremely important for physical education within the context of psychophysical training. The researches in the areas of philosophy, psychoanalysis, body-based theory in psychology, developmental and psychosomatic approach in medicine, body-oriented psychotherapy provide the foundation for specialists in the area of physical education to assume that it is possible to develop mental characteristics by affecting the human body (via physical exercises).

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