



## A SYSTEMIC APPROACH WITHIN THE PEDAGOGICAL SYSTEM OF PHYSICAL EDUCATION

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### Abstract

The article examines the theoretical and practical aspects of applying a systems approach in the teaching of physical education. It reveals the essence of the systems approach as a methodological foundation of pedagogical activity and analyzes the structural components of the pedagogical system and their interrelations. Special attention is given to the practical implementation of the systems approach in physical education classes, including the development of motor skills, the enhancement of physical qualities, and the motivation of students. The provided examples demonstrate the effectiveness of a systematically organized learning process. It is concluded that the systems approach contributes to improving the quality of education, fostering students' personal development, and optimizing the educational process.

### Keywords

systems approach, pedagogical system, physical education, learning process, didactics, teaching methods, physical education, student motivation, educational environment, personal development.

### Introduction

Modern education requires a comprehensive and scientifically grounded approach to the organization of the learning process. This is particularly relevant to the subject of Physical Education, which integrates educational, instructional, and health-promoting objectives. One of the most effective methodological tools is the systems approach, which allows the pedagogical process to be viewed as an integral, dynamic, and interrelated system.

The relevance of this topic is determined by the need to improve the quality of students' physical education, to develop their sustained motivation toward a healthy lifestyle, and to enhance their physical development. The aim of this study is to reveal the essence of the systems approach in the teaching of physical education and to demonstrate its practical application.

### Theoretical Foundations of the Systems Approach

The systems approach is a methodology of scientific inquiry based on the consideration of objects as systems—sets of interrelated elements forming a unified whole. In pedagogy, this implies the analysis of the educational process in terms of its structure, functions, and interconnections.

The pedagogical system of the subject “Physical Education” includes the following components: (1) learning goals and objectives; (2) educational content; (3) activities of teachers and students; (4) forms and methods of instruction; (5) means and technologies for implementing the educational process.

All elements of the system are interrelated and function within a broader educational environment. The systems approach makes it possible not only to identify these relationships but also to manage them in order to achieve optimal results.

An important feature of the systems approach is the consideration of the pedagogical process as a dynamic and evolving structure. This means that each element of the system is not static: objectives may be refined depending on conditions, content may be updated, methods may be improved, and organizational forms may be adapted to specific pedagogical tasks. Thus, the system is in constant motion and development.



In addition, the systems approach involves taking into account both external and internal factors influencing the educational process. External factors include societal demands, educational standards, and material and technical conditions. Internal factors include students' level of preparedness, their motivation, psychological characteristics, and the teacher's professional competence. The interaction of these factors determines the effectiveness of the functioning of the entire pedagogical system.

A key principle of the systems approach is the principle of integrity, according to which the properties of a system cannot be reduced to the sum of the properties of its individual elements. Only through their interaction does a new quality emerge—the pedagogical outcome, expressed in the form of acquired knowledge, skills, abilities, and students' personal development.

Equally important is the principle of hierarchy. The pedagogical system of physical education functions as a subsystem of a higher-level system—the general education system, which in turn is part of the social system of society. This implies that the goals and content of instruction are determined not only by the internal logic of the subject but also by societal needs.

The systems approach is also based on the principle of feedback. In pedagogical practice, this is implemented through monitoring, assessment, and analysis of learning outcomes. The information obtained enables the teacher to timely adjust the content, methods, and forms of instruction, ensuring the stability and development of the system.

Thus, the theoretical foundations of the systems approach make it possible to view the process of teaching physical education as an integral, multi-level, and manageable system in which all elements are interconnected, interdependent, and aimed at achieving a common pedagogical goal.

## **Practical Application of the Systems Approach**

### **Example 1. Teaching Running Technique**

**Objective:** formation of correct sprinting technique over short distances.

**Content:** theoretical knowledge of the phases of running, practical exercises.

**Methods:** demonstration, explanation, repetition, error correction.

**Forms of organization:** individual and group work.

**Systemic aspect:** The teacher takes into account students' physical fitness, motivation, and coordination abilities. During the lesson, continuous feedback is provided: errors are analyzed, movements are corrected, and the level of physical load is adjusted. Thus, all elements of the system (objectives, content, methods, and students' activities) function in a coordinated manner.

### **Results:**

As a result of the systematic organization of the educational process, students gradually master correct running technique, the number of typical errors decreases, coordination of movements improves, and overall physical fitness increases. In addition, students' awareness of exercise performance develops, as they understand the structure of the movement and its significance.

### **Conclusion:**

The application of the systems approach in teaching running technique ensures not only the formation of motor skills but also the development of students' analytical thinking, as well as their ability for self-control and self-correction. The coherence of all elements of the pedagogical system enhances lesson effectiveness, making the learning process more manageable and result-oriented.

### **Example 2. Development of Endurance**

**Objective:** improvement of students' overall endurance level.

**Content:** middle-distance running, circuit training.

**Methods:** gradual increase in workload, heart rate monitoring.



## **Systemic aspect:**

The teacher plans the workload taking into account age characteristics and the level of students' preparedness. Elements of self-monitoring are used (students measure their heart rate), which enhances their active role within the system. When necessary, the intensity of exercises is adjusted.

## **Results:**

Students demonstrate a gradual improvement in endurance, as well as enhanced functional condition of the cardiovascular and respiratory systems. Skills of self-monitoring and the ability to regulate physical load are developed.

## **Conclusion:**

The systems approach enables appropriate load regulation, prevents overtraining, and ensures steady progress in the development of physical qualities. The interconnection of all system components contributes to the formation of students' responsible attitude toward their health.

## **Example 3. Formation of Motivation for Physical Activity**

**Objective:** development of a sustained interest in physical education.

**Content:** game-based activities, competitions.

**Methods:** encouragement, creation of success situations, team-based tasks.

## **Systemic aspect:**

In this case, the psychological component of the system plays an important role. The teacher takes into account students' interests and creates a positive emotional environment, which contributes to engagement and improves learning effectiveness.

## **Results:**

Students show increased interest in classes, higher levels of activity, and greater participation in lessons. A positive attitude toward physical education and a healthy lifestyle is formed.

## **Conclusion:**

The systems approach enables effective influence on the motivational sphere of the personality. Due to the coherence of objectives, methods, and forms of instruction, conditions are created for the development of a stable interest in physical education.

## **Example 4. Organization of the Learning Cycle (Topic: "Gymnastics")**

**Objective:** mastery of basic gymnastic elements.

**Content:** exercises for coordination, balance, and strength.

## **Stages:**

1. Introduction (familiarization with technique);
2. Practice of elements;
3. Consolidation;
4. Assessment and evaluation.

## **Systemic aspect:**

Each stage is logically connected to the previous one, ensuring a gradual increase in complexity. The teacher analyzes results and makes adjustments to subsequent lessons.

## **Results:**

Students master gymnastic elements at a higher level, their coordination, strength, and flexibility improve. The level of injuries decreases due to proper organization of the learning process.

## **Conclusion:**

The systems approach ensures a step-by-step and safe acquisition of learning material. A clear structure of the learning cycle contributes to more durable acquisition of motor skills and improves the quality of education.



## Conclusion

The systems approach is an effective tool for organizing the educational process in physical education. It makes it possible to:

1. view learning as an integral system of interrelated elements;
2. take into account the individual characteristics of students;
3. ensure coherence between learning objectives, content, and methods;
4. improve the effectiveness of the educational process;
5. create conditions for the self-improvement of the pedagogical system.

The application of the systems approach contributes not only to the physical development of students but also to personality formation, the development of motivation, and the acquisition of independent learning skills.

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