

METHODOLOGICAL FOUNDATIONS OF BUILDING A PEDAGOGICAL  
MODEL AND ITS CONCEPTS

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**Annotation:** *This article introduces the concept of "pedagogical validity," a special concept used to describe the effectiveness of models in model creation. It is reliable and close to adequacy but distinct from it. The article reflects, replicates, and serves to improve skills.*

**Keywords:** *Model, pedagogical, schema, adequacy, visual representation, process, analogy, object, pedagogical validity, modeling, functions, components, conceptual, aspects, methods.*

In modern literature, methodology is primarily understood as the methodology of scientific knowledge, that is, a doctrine about the principles, forms, and methods of scientific and cognitive activities. The methodology of science describes its object, the subject of analysis, the research task (or problem), the components of scientific research, the set of research tools necessary to solve this type of problem, as well as shaping the understanding of the sequence of research. The most important points in the application of methodology are problem formulation, the construction of the research subject, the construction of scientific theory, and the verification of the accuracy of the results [1].

The Philosophical Encyclopedic Dictionary additionally emphasizes that methodology can be both theoretical and practical in its definition: "Methodology is a system of principles and methods for organizing and constructing theoretical and practical activities, as well as being a doctrine of this system" [2].

In other encyclopedic publications, the concept of "methodology" is defined as follows:

"Methodology 1) a set of research methods used in any science; 2) a doctrine about the method of scientifically knowing and transforming the world" [3]. The subject of the methodology of science, and its methodological analysis, encompasses the various methods, techniques, and operations of scientific research, its norms and ideals, as well as the forms of organizing scientific knowledge [4].

"Methodology is the doctrine about the methods of organizing and constructing human theoretical and practical activities" [5].

"Methodology is the doctrine about methods; it is the science of organizing human activity. Traditionally, the most developed field of methodology is the methodology of cognitive activity and the methodology of science" [6].

According to V.A. Slastenin, the most vivid approaches to defining the concept of methodology are as follows: "Some researchers consider methodology as a doctrine about the structure, logical organization, methods, and tools of theoretical activity; others, about the principles and rules of formulating and applying methods of knowing and transforming reality; others still, about the most general principles for solving complex practical problems, and research methods; the fourth approach views it as a system of principles and methods for organizing and constructing both theoretical and practical activity, as well as

the doctrine of this system; the fifth considers it as a doctrine about the basic (fundamental) principles, structure, functions, and methods of scientific-pedagogical research; the sixth considers it as a system of principles and methods for organizing and constructing both theoretical and practical activities, as well as the doctrine of this system" [7].

Thus, the concept of "methodology" has two main meanings: 1) a system of specific methods used in a particular field of activity (such as science, politics, art, etc.); 2) a doctrine about this system, the general theory of methods, and the theory in action [8].

The methodology of science, as an independent research field, strives to clarify the content, possibilities, boundaries, and interactions of scientific methods.

V.P.Bespalko identified three levels of methodological analysis:

-the exact scientific methodology deals with its methods, techniques, and standards, shapes the principles and methods of specific scientific activities, describes and justifies them.

-General scientific methodology is a doctrine about the principles, methods, and forms of cognition that correspond to the subject and object of study in various sciences, functioning across multiple disciplines.

-Philosophical analysis of knowledge involves philosophical ideas, approaches, and reasoning methods that can be applied in studying scientific and cognitive activities under specific conditions [7].

V.I.Bushinskiy distinguishes four levels of methodology:

-Philosophical methodology – the general principles of epistemology as a theory of knowledge, the dialectical method of cognition, and the overall structural content of science.

-General scientific methodology – general concepts and theories that influence all or most scientific fields, related to solving broad methodological problems.

-Exact scientific methodology – a set of methods, approaches, and specific scientific research in a particular field of study.

-Scientific research methodology – a set of procedures ensuring the collection of empirical material and its initial processing [7].

Thus, today there is no unified, universally accepted, established, and complete system of views on the understanding of methodology.

Methodology is still in its initial stages.

Thus, the general concept of methodology as a level of philosophical knowledge is a doctrine about methods, which aims to establish the necessary conditions for human cognitive activity. At the philosophical level, the essence of methodology is viewed by various researchers as a doctrine about the structure, logical organization, methods, and tools of human activity in the fields of theory and practice.

To justify the appropriateness of applying the unity of methodological approaches in teaching informatics, we will examine the principles of the general educational process.

The systems approach is a direction of the methodology of scientific knowledge and social practice, based on considering objects as systems.

The use of the systems approach involves developing pedagogical models that simulate the processes under study as systems, which allows for acquiring knowledge about their operational laws and principles for effective organization [9].

In general secondary education, the process of forming students' core competencies is interpreted by us as the purposeful formation of knowledge acquired by the student, as the subject of their own activity. The use of the systems approach in our research allows us to:

- To study the structure of the process of forming core competencies;
- To develop a methodological model (Figure 1).

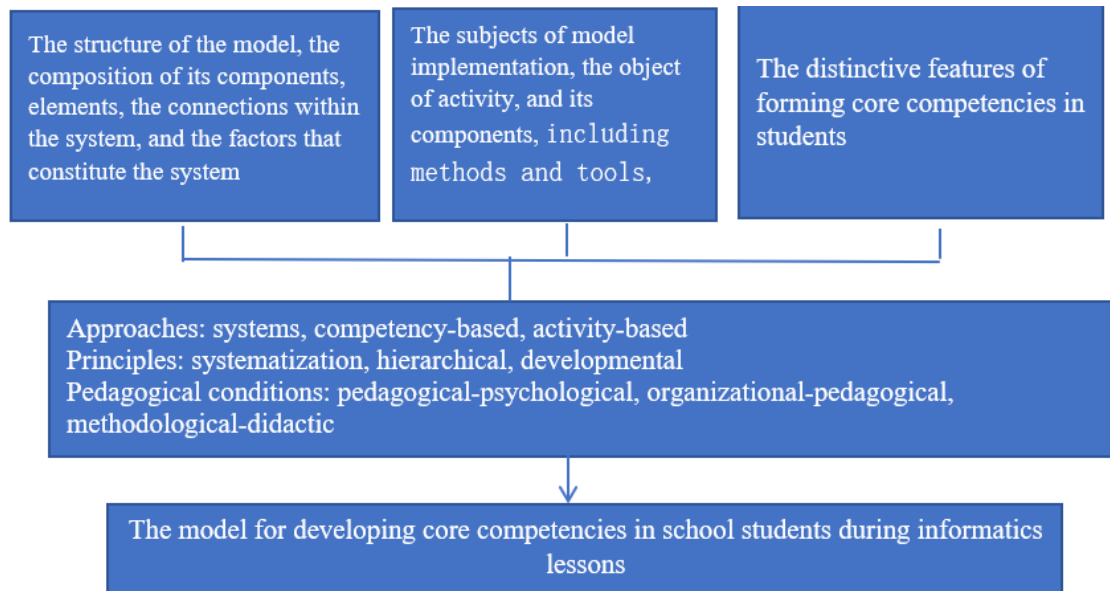


Figure 1. Methodological Foundations of Building a Methodological Model

The main idea of the competency-based approach is that when determining the content of education, it should not be limited to specifying a certain amount of knowledge and skills acquired by students within the formal school education system.

The practical aspect of education should take into account the following: for knowledge gained within the formal school education system to be truly effective, it must be integrally linked with broader knowledge.

In addition to the formal education content, it is advisable to include competencies related to everyday life activities, such as politics, culture, environmental protection, healthcare, and others.

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