

## EDU WORLD 2018 The 8<sup>th</sup> International Conference

### PEDAGOGICAL SYSTEM AND METHODOLOGY OF ITS RESEARCH IN THE HISTORICAL RETROSPECTIVE

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#### *Abstract*

The article analyses the essential characteristics of the concept of the "pedagogical system" as a category of pedagogy, makes an analytical overview of the approaches of the latest methodology of historical and pedagogical studies and substantiates approaches, principles and methods of investigating the genesis of the pedagogical system. The purpose of this article is to substantiate the essence and structure of the pedagogical system as a category of pedagogy, to identify the dominant approaches, principles and methods suitable for carrying out the historical and pedagogical study of the genesis of the pedagogical system of personnel training (hereinafter - the pedagogical system) for macroeconomics. The methodological foundations presenting the toolkit for historical and pedagogical research of the problem of formation, development and institutionalization of the pedagogical system of training personnel for the national economy serve as basic reference point. They reflect at the theoretical level a set of approaches, principles and methods of research, through which the essence of the phenomenon under investigation is studied, its current state is characterized and the conceptions of its future are modelled. Mentioned essential characteristic of the pedagogical system as a category of pedagogy, the grounds for choice and the content characteristic of the dominant approaches, principles and methods for carrying out historical and pedagogical research all together determine the methodology of studying at the macro level the genesis of the pedagogical system of personnel training for a specific field of activity (pedagogical, medical, law enforcement, engineering, military, firefighting and rescue, etc.).

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**Keywords:** Pedagogical system, category of pedagogy, substantiates approaches, principles, methods of investigating.



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## 1. Introduction

In the process of improving the educational system of the Republic of Belarus historical and pedagogical studies become highly relevant as their results enrich the history of the country's educational sphere with real content making it possible to use the positive experience of the past, to take into account the influence of various socio-cultural and economic factors and improve the efficiency of modern educational activities.

Being an integral part of the history of the humanities, the history of pedagogy has accumulated a large number of facts, descriptions, scientific generalizations. They codify and present: a) the range of education and upbringing problems that the society encountered at various stages of its development; b) specifics of actualization of these problems under the influence of socio-economic, political, religious, moral, cultural and other factors; c) ways and methods of solving these problems in different historical periods of development of society. Herewith, it is obvious that any descriptions and facts of history, especially the education history, taken separately, without corresponding multivariate analysis and interpretation support cannot be considered as scientific knowledge. They do not provide an opportunity to achieve the required consistency of knowledge, to gain an insight into a multitude of cause-effect, structural, functional, direct and indirect links and relations accompanying historical facts.

Therefore, implementation of historical and pedagogical research assumes at its initial stage the definition of categorial and methodological grounds on the basis of which systematization, comprehension, explanation, comparison and evaluation of historical pedagogical material (facts, events, ideas) will be realized; appropriate periodization will be constructed; the logic, regularities and mechanisms of genesis of pedagogical knowledge in its scientific manifestation will be revealed (Bobryshov, 2006).

## 2. Problem Statement

The methodological foundations presenting the toolkit for historical and pedagogical research of the problem of formation, development and institutionalization of the pedagogical system of training personnel for the national economy serve as basic reference point. They reflect at the theoretical level a set of approaches, principles and methods of research, through which the essence of the phenomenon under investigation is studied, its current state is characterized and the conceptions of its future are modelled.

## 3. Research Questions

In the process of determining the methodological foundations of historical and pedagogical research, the researcher inevitably faces the need to solve a number of following problems

- search for approaches to identifying system-building links and value-semantic parameters in the subject field of research. In this aspect it is important to determine the layer of the education history (periods and stages, researchers, content and procedure fragments of theoretical provisions and educational practice, etc.); to define the problems this investigation aims to reveal, what should be exposed based on the value of the research material about this period, the current state of pedagogical science and its perspectives;
- determination of the set of principles on the basis of which it is intended to comprehend, explain and evaluate historical and pedagogical facts, events, ideas, thoughts; revealing the logic,

regularities and mechanisms of the genesis of pedagogical principles, forms and methods of teaching; systematization of historical and pedagogical material, construction of appropriate periodization, chronologies, etc.

- formation of a research methods system adequate to the conceptual theoretical basis accepted by the researcher and the specifics of the exposed historical and pedagogical problems.

#### 4. Purpose of the Study

The purpose of this article is to substantiate the essence and structure of the pedagogical system as a category of pedagogy, to identify the dominant approaches, principles and methods suitable for carrying out the historical and pedagogical study of the genesis of the pedagogical system of personnel training (hereinafter - the pedagogical system) for macroeconomics.

#### 5. Research Methods

Analysis (comparative-historical, chronological, comparative, genetic-construction), synthesis, modelling, generalization, prediction

#### 6. Findings

Considering the categories of pedagogy as concepts that constitute the basis of pedagogical science, it should be noted that for today there is no unity of views among researchers concerning the question what concepts of pedagogy could be considered as categories and which could not. Therefore, different sources present different classifications. It is of interest to determine the categorial framework of pedagogy substantiated by Kadtsyn (2008), in accordance with which the category "pedagogical activity" appears to be the starting point. Its types reflect the categories of "upbringing", "training" and "education", whereas the categories "pedagogical system" and "pedagogical process" reflect organized pedagogical activity in its integrity "(p. 45-46).

Speaking of the "pedagogical system", it should be noted that in the pedagogical literature the term "system" (the system of education, training, upbringing, didactic system, methodological system, the system of teaching aids, etc.) is often used in various contexts. The essence of the concept "pedagogical system" is presented in scientific sources in various definitions (Table 1).

**Table 01.** Essence of the term "pedagogical system"

Author	Definition
Bespalko, (1989)	"In our opinion, the pedagogical system means a certain set of interrelated means, methods and processes necessary to create an organized, purposeful and deliberate pedagogical influence on the formation of a personality with specified qualities. All pedagogical phenomena arising in the evolutionary process of formation and development of educational activity find explanation in the structural changes of the elements of the pedagogical system as well as in changes of the properties of its elements or the nature of the connections between them " (p. 6).
Zhuk, (2011)	"The educational system as a management object in modern research is regarded as a multisystem with specific features related to its social, cultural and personality functions, and the type of "industrial" relations in the "human-to-human" area. The educational system as a management object can be considered as:

	the pedagogical system where the educational process is realized; the economic system where financial and economic mechanisms of activity are realized; the social system where participants – people and groups of people - enter into social relations with each other and with the surrounding environment; the organizational system where efficiency of the educational system management and coordination of the pedagogical, economic and social aspects of its activities are ensured" (p. 5-6).
Kadtsyn, (2008)	"The category "pedagogical system" reflects organized pedagogical activity, which is a set of purposeful (managed) processes of upbringing and education in different types of educational institutions. Depending on the purpose, it is possible to distinguish between pedagogical systems of general (pre-school and school) education, vocational training, social adaptation and correction as areas of organized pedagogical activity" (p. 45)
Novikov, (2010)	"The pedagogical system is the unity of the set of the goals of human education and all the factors contributing to the achievement of these goals. The pedagogical system is a particular concept in relation to a more general concept - the educational system. Moreover, pedagogical systems can be viewed at different levels: the pedagogical system of the educational institutions, the pedagogical system of each particular teacher, lecturer, the pedagogical system of a particular training course, academic subject, topic, lesson, etc. That is, we deal with the hierarchy of pedagogical systems" (p. 125-126).
Podlasiy, (2004)	"The pedagogical process proceeds in the pedagogical system - the unification of components (elements) that remain stable under changes. If the changes (innovations) exceed a certain permissible limit (margin of safety), the system collapses, a new system with other properties appears in its place" (p.47).
Slastenin, (2002)	"The pedagogical system is a multitude of interrelated structural components united by a single educational goal of personality development and functioning in a holistic pedagogical process" (p. 117).
Spirin, (1994)	"Any association of people specially organized for realizing the aims of education and upbringing must be regarded as a pedagogical system. The pedagogical system arises whenever the educational, labour, scientific, environmental, aesthetic, social, moral, sporting, play activities of people become a source of pedagogical goals and a means of their simultaneous achievement. At the same time, the pedagogical system is a complex continuously changing social management system, in which educational tasks are solved and pedagogical goals are achieved " (p. 7).
Khitryuk, (2015)	"The pedagogical system is understood as a set of conditions, methods, technologies, processes and tools that ensure the purposeful formation of the necessary competencies (academic, social, personal and professional)" (p. 9-10).

The analysis of the definitions of the term "pedagogical system" presented in Table 1 revealed that:

- a) the pedagogical system is a particular concept in relation to a more general concept - the educational system (Zhuk, 2011; Novikov, 2010);
- b) in the dynamics of interaction of structural components, the pedagogical system acts as a pedagogical process (Zhuk, 2011);
- c) the pedagogical system is a collection, a set of components (Slastenin, 2000), factors (Novikov, 2010), means, methods and processes (Bespalko, 1997; Khitruk, 2015), united (interconnected) by a common educational goal;
- d) educational goals can be differentiated and this is the reason for considering pedagogical systems at different levels Kadtsyn (2008), Novikov (2010) and in various fields of activity: educational, labour, scientific, environmental, aesthetic, social, moral, sporting Spirin (1994).

Thus, the analysis of essential characteristics of the concept "pedagogical system" allows us to draw the following conclusions:

1) the pedagogical system is a set of interacting components interdependent on a common educational goal;

2) the educational goal is a key element of the system determining its pedagogical purpose and distinguishing the pedagogical system from a number of other social systems;

3) the pedagogical systems can be differentiated according to the levels: the pedagogical system of the educational institution, the pedagogical system of the particular teacher, lecturer, the pedagogical system of the particular training course, academic subject, topic, lesson, etc.;

4) pedagogical systems can be considered in various types and branches of social activity (when activity becomes a source of pedagogical goals and a means of their simultaneous achievement): medical, educational, law enforcement, engineering, military, firefighting and rescue spheres of activity, etc.

5) the pedagogical system considered in the dynamics of interaction of structural components is an educational process.

Consequently, the concept "pedagogical system" as a category of pedagogy can be defined as a multilevel set of interacting components (objective, subjective, content, operational, technological, environmental, effective), which provides organizations of the country with qualified personnel in a specific field of activity (medical, educational, law enforcement, engineering, military, firefighting and rescue, etc.) and whose training is carried out at various levels of education (general secondary education, vocational education, specialized secondary education, higher education, postgraduate and additional adult education).

At the macro level the study of the above-mentioned pedagogical system of training personnel for a specific field of activity requires the researcher to determine the methodological approaches in order to carry out the research. The modern methodology of historical and pedagogical research supplies the researcher with a wide range of efficient approaches:

- system-based approach (V.P. Bespalko, I.V. Blauberg, V.A. Slastenin, E.G. Yudin, etc.), implying interconnection of individual phenomena with social development and the demands of society; enabling to divide the whole into constituent elements with the aim of their profound studying, to define integrative connections in order to have a holistic view of the structure and organization of system objects (Bespalko, 1997; Blauberg, 1973; Slastenin, 2000; Yudin, 1978);

- socio-historical approach (A.P. Bulkin, M.N. Rutkevich, etc.), making the researcher take into account all the details of the phenomenon under investigation in the context of social mechanisms determining this phenomenon and the peculiarities of the development of society;

- civilizational approach (M.V. Boguslavsky, B.G. Kornetov, L.I. Semennikova, etc.), meaning the study of social phenomena through the prism of civilization, the study of the past through the objectification of the subject of history in all spheres of human activity concerning labour, social, political, ideological spheres;

- axiological approach (M.V. Boguslavsky, V.I. Dodonov, V.P. Zinchenko, Z.I. Ravkin, V.A. Slastenin, etc.), implying identification of value-semantic reference points in the historical and pedagogical experience with the aim of their extrapolation on modern problems of education;

- anthropological approach (B.M. Bim-Bad, B.G. Kornetov, etc.), based on the analysis of the pedagogy and education history in terms of focusing on the person as a basic value and goal of education with emphasis on personality in the process of historical research;

- synergetic approach (M.V. Boguslavsky, V.G. Budanov, A.A. Dobryakov, L.Y. Zorina, O.P. Melekhova, etc.), emphasizing the possibility of obtaining knowledge from already known sources, based on the principles of integrity, interdisciplinarity, ideological and methodological pluralism, openness of the process of cognition, which makes it possible not only to obtain the new knowledge from already known sources, but also provide a deeper understanding of the historical and pedagogical processes;

- paradigmatic approach (B.S. Gershunsky, B.G. Kornetov, T. Kun, I.E. Shkabara, etc.), assuming the use of the scientific potential of the paradigm for making reflexive analysis and reconstruction of historical and pedagogical experience, for disclosing universal and particular historical forms of education, their genesis, transformation, logic, conditions, tendencies, trends, patterns and development alternatives (Shkabara, 2005);

- polyparadigmatic approach (L.A. Belyaeva, V.M. Rozin, I.G. Fomicheva, P.G. Shchedrovitsky, etc.), expanding the view on the educational process through the dominant attitudes to creating learning situations, teamwork, co-creation, reflection and self-development (Kozlova, 2015);

- diachronic approach (I.A. Baudouin de Courtenay, N.S. Trubetskoy, V.V. Chernykh, R.O. Jakobson, etc.), from the Greek. dia – through and chrónos – time. This allows us to study the sequence of appearing and developing the phenomena under study in the course of time (Chernykh, 2000);

- socio-cultural approach (S.I. Gessen, V.T. Kudryavtsev, A.M. Osipov, D.I. Feldstein, etc.), based on the interrelationship of culture, education and human activity, suggesting the analysis of the education sphere through the prism of system-building culturological concepts (culture, cultural values, patterns, value-semantic systems) (Yudin, 1978).

It should be noted that the whole range of principles and methods of research characteristic of pedagogical research (with the exception of the experimental method) can also be used in the historical and pedagogical research.

Proceeding from the brief summary of these approaches, principles and methods, it can be concluded that within the framework of historical and pedagogical research the researcher can rely on any of them, but at the same time it is very difficult to use all of them simultaneously. Consequently, the question of choosing the dominant approaches, principles and methods for a particular historical and pedagogical research is topical. What to take as the basis for choosing the dominant approaches, the researcher decides independently based on the specifics of the subject of the study. For example, the basis for determining the methodology for studying the pedagogical system for a particular field of activity at the macro level (medical, educational, law enforcement, engineering, military, firefighting and rescue spheres of activity, etc.) is the problem (what are the effective mechanisms of the long-term development of the pedagogical system of personnel training, taking into account the historical experience of establishing, institutionalization, development of this system under the influence of external and internal socio-cultural and economic factors) and the subject of research (genesis of the pedagogical system of training personnel for a specific field of activity at the macro level), as well as interrelation of approaches, principles and methods at the philosophical, general scientific and specific scientific levels. Further, it is important to consider the rationale for choosing approaches, principles and methods.

The principles of dialectics (development; interconnection and complementarity of the general, specific and individual; the unity of dialectics, logic and the theory of knowledge; interrelation between the abstract and the concrete; the unity of the logical and historical factors), interdisciplinarity, historicism,

complexity, objectivity construct the philosophical basis of the methodology of the historical and pedagogical study of the genesis of the pedagogical system for a specific field of activity at the macro level (hereinafter referred to as the pedagogical system).

At the general scientific level the dominant approaches used in the historical pedagogical study of the genesis of the pedagogical system are system-based, diachronic and socio-cultural approaches. What are the reasons for their choice?

The choice of the system-based approach (V.P. Bespalko, I.V. Blauberg, V.A. Slastenin, E.G. Yudin, etc.) (Bespalko, 1997; Blauberg, 1973; Slastenin, 2000; Yudin, 1978) is conditioned by the following provisions:

First, by the system characteristic of categories: "education", "pedagogical process", "personnel training".

Secondly, by the need to define specific scientific (historical and pedagogical) principles and methods of studying the process of training personnel for a specific field of activity at the macro level (for example, the training of personnel for the firefighting and rescue service of Belarus) as a set of system components interacting in the historical and cultural perspective (educational goals, subjects, content, forms, methods, means).

Thirdly, by consideration of the process of training personnel for a particular field of activity at the macro level as a dynamic object, recognizing it as an open pedagogical system interacting with the surrounding environment in specific territorial (for example, Belarus) and chronological (for example, the 20s of the XX - the beginning of the XXI century) framework.

Thus, the concept based on the modern understanding of a holistic pedagogical process as a dynamic characteristic of the pedagogical system (the pedagogical process as interaction of the elements of the pedagogical system, the pedagogical process as a changing situation in the pedagogical system) is placed at the heart of the historical and pedagogical study of the genesis of the pedagogical system. On the one hand, it makes it possible to single out the pedagogical core of the problem under consideration (the unity of education, training and all the components of the pedagogical system: goals, subjects, content, forms, methods, means), on the other hand, it standardizes the process of historical and pedagogical research defining the core set of dominant principles and methods of research.

The use of the diachronic approach (I.A. Baudouin de Courtenay, N.S. Trubetskoy, V.V. Chernykh, R.O. Yakobson, etc.) (Chernykh, 2000) in the historical and pedagogical study of the genesis of the pedagogical system is due to the following:

1. Analysis from the diachronic perspective involves the consideration of the pedagogical system of training in specific time intervals (chronological periods or stages in accordance with the criteria characterizing the state of the processes of teaching and educating specialists: the relationship between the aims of education and the needs of society, the number of students, the number and qualifications of teaching staff, the change of the content of training, forms, methods, means of instruction, etc.), interconnected within the context of historical and cultural events and possessing discretization, consistency, orientation along the axis of historical development.

2. From the point of view of diachrony the analysis of the evolutionary processes of the development of society, thinking, language, culture is realized through the prism of education and upbringing in various countries. The interrelationship between the development of society and education makes it possible to

discern common signs of diachrony - the cyclical nature of forms of development, the change in the initial simplicity of the state of the pedagogical system (the stage of formation), the stage of flourishing, stabilization (functioning), inevitably changing to the stage of decline (degradation) or further development.

The diachronic vector of the historical analysis of the pedagogical system allows us to consider the process of education and training specialists in a broad cultural context. At the same time in the context of globalization, historical, philosophical, civilizational and functional aspects acquire special importance, which reflects the authenticity of the studied pedagogical system and predetermines the logic of its further development.

3. The diachronic approach allows us to link historical periods and define general trends in the development of the pedagogical system in a specific historical epoch determined by the chronological framework of the study. The study of the subject of research includes an analysis of the end-to-end historical stratification, the top layer of which is the modern socio-cultural situation. The use of the diachronic approach opens up the following possibilities:

- to study the genesis of the modern pedagogical system;
- to determine the stages and cycles of its development and changes;
- to forecast the development of the pedagogical system for a long-term period.

The choice of socio-cultural approach (S.I. Gessen, V.T. Kudryavtsev, A.M. Osipov, D.I. Feldstein, etc.) (Yudin, 1978) is caused by the need to identify factors that determine the mutual influence of education and socio-cultural processes that take place in society. Socio-cultural approach supposes:

- a) understanding of culture as a multilayered, hierarchical phenomenon, the structural component of which is the subculture conditioned by the specifics of the professional activity of the individual;
- b) consideration of the subculture as a programme of activity of the individual;
- c) taking into account mutual influence of subcultures conditioned by two professional activities: pedagogical and industrial (medical, pedagogical, law enforcement, engineering, military, firefighting and rescue, etc.).

In the process of implementation of the historical pedagogical study of the genesis of the pedagogical system at the general scientific level the use of logical schemes of social constructivism (P. Berger, J. Bruner, L.S. Vygotsky, T. Lukman, etc.) is also relevant. They are based on the following propositions:

- 1) the process of education and upbringing is, by its nature, one of the kinds of the personality's social activity characterized by the fact that social norms, values of social reality are not perceived by the person in passive perception, but they are constructed in the process of social interaction;
- 2) the use of natural science laws is impossible to describe the factors and processes occurring in the social, economic, political spheres as social factors are constituted in a situation taking into account the content of their relationships.

At the specific scientific level the historical and pedagogical study of the genesis of the pedagogical system is based on the following set of principles and methods:

- 1) the principle of historicism taking into account the historical retrospective for understanding the functioning of public institutions (the Ministry of Education, the Ministry of Health, the Ministry of Internal Affairs, the Ministry of Economy, the Ministry of Emergency Situations, etc.) in the country (for example, Belarus) in general and the pedagogical system of training personnel for the definite industry in particular;

- 2) general theoretical methods: analysis, synthesis, modelling, generalization, prediction;

3) historical and pedagogical methods: comparative-historical analysis (for studying the state of the problem in different sources, for determining the initial theoretical and methodological provisions of the study); chronological analysis (for highlighting the stages of the process of formation and development of the pedagogical system); comparative analysis (for comparing the patterns of development of foreign and domestic processes of training personnel for a specific field of activity at the macro level); genetic-construction analysis (for actualization of the past events that have scientific and practical value for modern pedagogical theory and practice).

## 7. Conclusion

Thus, the above-mentioned essential characteristic of the pedagogical system as a category of pedagogy, the grounds for choice and the content characteristic of the dominant approaches, principles and methods for carrying out historical and pedagogical research all together determine the methodology of studying at the macro level the genesis of the pedagogical system of personnel training for a specific field of activity (pedagogical, medical, law enforcement, engineering, military, firefighting and rescue, etc.).

A distinctive feature of methodology substantiated in the main part of the article is a specific set of interconnected at three levels (philosophical, general scientific and specifically scientific):

- a) approaches: system-based, diachronic, socio-cultural;
- b) principles: dialectics, interdisciplinarity, historicism, complexity, objectivity;
- c) methods: analysis (comparative-historical, chronological, comparative, genetic-construction), synthesis, modelling, generalization, prediction.

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