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Research Article

METHODOLOGY AND SOME METHODS OF PEDAGOGICAL RESEARCH

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ABSTRACT
This scientific article discusses the methodology of pedagogy; levels and types of pedagogical research, as well as methods of pedagogical research.

KEYWORDS
Methodology, methodology of pedagogy, scientific and pedagogical research, object, subject, hypothesis, goal, research objectives, methods of pedagogical research.

INTRODUCTION
Methodology is the doctrine of the principles and methods of scientific knowledge of facts, patterns and mechanisms of the activity under study and its transformation. The methodology of pedagogy is a system of knowledge about the starting points of pedagogical theory, about the principles of approach to the consideration of pedagogical phenomena and methods for their study, as well as ways to introduce the acquired knowledge into the practice of upbringing, training and education. Methodology in a broad sense is understood as a system of principles and methods for constructing theoretical and practical

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activities. The methodology of pedagogical science is interpreted as the doctrine of the structure, logical organization, methods and means of activity in the field of pedagogical theory and practice.

Basic concepts of methodology.

Also, methodology is understood as a doctrine of the method of scientific knowledge and transformation of the world. The methodology of pedagogy is interpreted as a system of knowledge about the initial provisions, about the rationale and structure of pedagogical theory, about the principles of scientific approaches and methods of obtaining knowledge that reflect pedagogical reality; the doctrine of the basic provisions, structure, functions and methods of pedagogical research, of the knowledge and transformation of pedagogical reality.

Methodologists of pedagogical science provide a fundamentally reliable approach to the specifics of cognition of objects and phenomena of pedagogical reality. That is, a methodology is a set of norms of behavior that leads to certain results in accordance with the goals that need to be achieved.

It can be descriptive, exploratory, or normative. In methodology as a branch of science, it is legitimate to highlight the activity aspect, which is interpreted through the concept of "methodological activity" in two forms - methodological support and methodological research. The task of methodological research is to identify patterns and trends in the development of pedagogical science, its connection with practice, the principles of improving the efficiency and quality of pedagogical research, analysis of their conceptual composition and methods.

Sources for methodological research.

The sources of knowledge that make it possible to carry out methodological research are:

- General philosophical provisions and categories that make it possible to consider the problem through the prism of philosophical knowledge;
- General scientific methodology;
- Knowledge obtained as a result of methodological research in the field of pedagogy;
- Special-scientific theories that can become a means of methodological support for a particular study;
- The results of methodological reflection, the teacher's reflections on the methods of scientific knowledge used by him, on logic.

In recent years, educational institutions have a new function - research and search, the implementation of which helps to increase the efficiency of the entire pedagogical process. The teacher becomes a researcher, a subject of knowledge, therefore, his activity also needs scientific support, and above all methodological support. Methodological support is a set of means of cognition that acts as a regulator, with the help of which one's own scientific search and research process are planned, corrected and controlled.

RESEARCH APPROACHES

The teacher-researcher needs to know modern approaches to research activities and rely on them. The activity approach focuses on the study of the educational activity of the student and the professional activity of the teacher, on the identification of their structures and conditions of formation, types of indicative basis of action, and so on. It allows you to identify the possibility of forming individual abilities

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and personal qualities in schoolchildren, students and teachers in various activities.

The personal approach takes into account the fact that all external pedagogical influences always act through the internal conditions of the personality and individuality of a person. It focuses on the formation of a value attitude towards the child as a person, the study of the mechanisms of self-realization, self-development, self-regulation, social self-defense, adaptation of a person to social conditions and his integration into society.

This method provides for the study of the nomenclature of personal goals, the identification of the specific content of education, on the basis of which personal qualities and the main areas of individuality are formed, the justification of pedagogical systems and technologies aimed at achieving the goals of personality development.

A systematic approach requires considering all phenomena and processes in their interconnection. It focuses on the consideration of pedagogical phenomena from the point of view of such categories as system, relation, connection, interaction.

The application of this approach allows you to isolate the elements and determine the composition of the system; find the way in which the elements are interconnected; identify backbone, dominant factors; set the system integrity level; to study its interaction with the external environment; identify its functions.

The probabilistic approach focuses on isolating professional probable tasks that the teacher most often encounters. Having singled out a certain type of such problems, it is possible to develop a technology for solving them.

MODELING METHOD.

At present, the modeling method is widely used in pedagogical research.

Modeling is a method of creating and examining models. The study of the model allows you to get new knowledge, new holistic information about the object.

The essential features of the model are: visibility, abstraction, an element of scientific fantasy and imagination, the use of analogy as a logical method of construction, an element of hypotheticality. In other words, a model is a hypothesis expressed in a visual form.

An important property of the model is the presence in it of a creative, creative imagination. Various concepts, paradigms, scenarios, business, cognitive and other games can become forms of modeling the educational process.

The process of creating a model is quite laborious, the researcher, as it were, goes through several stages.

1. A thorough study of the experience associated with the phenomenon of interest to the researcher, analysis and generalization of this experience and the creation of a hypothesis underlying the future model.
2. Drawing up a research program, organizing practical activities in accordance with the developed program, making adjustments to it prompted by practice, clarifying the initial research hypothesis taken as the basis of the model.
3. Creation of the final version of the model. If at the second stage the researcher, as it were, offers various options for the constructed phenomenon, then at the third stage, on the basis of these

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options, he creates the final sample of the process (or project) that he is going to implement.

In pedagogy, modeling is successfully used to solve important didactic problems. For example, a teacher-researcher can develop models: optimizing the structure of the educational process, activating the cognitive independence of students, a student-centered approach to students in the educational process.

The modeling method opens up for pedagogical science the possibility of mathematization of pedagogical processes, that is, the introduction of mathematical methods in pedagogy. The mathematization of pedagogy carries a huge epistemological potential, that is, there are great opportunities for human knowledge of the world. The use of mathematical modeling is most closely associated with an ever deeper knowledge of the essence of educational phenomena and processes, and a deepening of the theoretical foundations of research.

Test method. Of particular relevance in our time are issues related to the development of tests by teachers. An analysis of the psychological and pedagogical literature shows that there are various definitions of the concept of "test".

So, for example, in the psychological dictionary, a test is defined as "a short, standardized, usually time-limited psychological test, designed to establish inter-individual differences in comparable values."

The concept of "test" is used in the narrow and broad sense of the word.

In a narrow sense, a test is "a short, highly standardized test that allows a result to be quantified and therefore enables mathematical processing." In a broad sense, the concept of "test" is interpreted as "a means, since from a didactic point of view the concept of "means" covers the entire toolkit, which is the link between the goal and the result of psychological and pedagogical activity and also includes various methods, forms, techniques" .

Along with the concept of "test" there is the concept of "test task", which can be considered as the simplest and at the same time an integral structural element of a certain test.

The concept of "testing" should also be considered as a specific procedure for measuring properties using a test.

The means by which the testing of knowledge, skills and abilities in learning is carried out are usually called didactic tests or success tests, or tests for measuring achievement.

Under such tests, most often they mean a set of questions and tasks, from the answers to which they receive information about the level of assimilation of some educational material.

The mistake of many teachers is the identification with the test of certain tasks, consisting either of tasks with a choice of correct answers, or providing unambiguous answers to which questions are posed.

A correctly composed test should have the following approximate structure:

- A certain set of tasks;
- Rules for working with tests for subjects;
- Instruction to the experimenter;
- Theoretical description of the properties measured by the test;

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- Property measurement scale;
- The method of deriving an estimate by chalet.

Today, testing is an entire industry. Tests are widely used in the education system.

Let's briefly consider their various classifications.

Tests are distinguished by their focus: achievement tests, ability tests, personality tests, creativity tests, projective tests, criteria-oriented tests. Under such tests, most often they mean a set of questions and tasks, from the answers to which they receive information about the level of assimilation of some educational material.

In the scientific and pedagogical literature, the following features of tests are distinguished: objectivity, model, standardization.

Objectivity implies the exclusion of the influence of random factors, intentional influences on the person being tested. It is achieved mainly by the unity of the task, a single instruction, the unity of the principles for recording test results.

Modeling means that the test, with the help of tests, consists of tasks that express some kind of complex whole.

Standardization provides uniform procedures for conducting and evaluating test performance. Standardization affects verbal instructions, time, materials, and environment. We emphasize that the considered signs of testing are especially important to take into account in the process of conducting diagnostic studies.

Thus, pedagogical practice shows that tests, firstly, are scientifically progressive part of the methodological tools; secondly, they allow to "measure" typical mistakes and difficulties of trainees; thirdly, to put forward the level of mathematical and other abilities of students at various stages (periods) of education; fourthly, based on the analysis of the received material, to model (design) a coherent, logically scientifically based system of teaching and educating children. This, in turn, requires serious methodological, theoretical and methodological preparation from the teacher.

The method of studying and summarizing advanced pedagogical experience. First of all, let us clarify the concepts of "pedagogical experience", "mass pedagogical experience" and "advanced pedagogical experience".

Pedagogical experience should be understood as the practice of teaching, upbringing and education, i.e. an organized purposeful pedagogical process and its results, which are reflected in the quality of the student's personality.

Mass pedagogical experience is a typical experience of the work of public education institutions, which characterizes the achieved level of teaching practice, education and implementation of the achievements of pedagogical science in it.

The concept of "advanced pedagogical experience" is used in a broad and narrow sense. In a broad sense, best practice is understood as the high skill of a teacher, i.e. a practice that gives a high stable pedagogical result. Professor M.N. Skatkin believes that "the experience of a teacher may not contain anything new, original, but based on the successful application of the principles and methods established by science, it will be a good model for those teachers who have not yet mastered the teaching skills." In a narrow sense, advanced pedagogical experience is

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understood only as a practice that contains elements of creative search, novelty, originality, what is otherwise called innovation. The innovators of pedagogical work include Sh.A. Amonashvili, O.S. Gazman, N.P. Guzika, E.N. Ilyina, V.A. Karakovsky, S.N. Lysenkov, V.F. Shatalova and others.

Scientific study and generalization of pedagogical experience is aimed at solving various research goals:

- Identifying the existing level of solving educational and educational problems;
- Identification of bottlenecks, "white" spots and contradictions that arise in practice;
- Identifying leading trends, original ideas, elements of innovation, progressive, born in the daily creative search for the best teachers, as well as characteristic shortcomings and mistakes; studying the availability and effectiveness of scientific recommendations that become the property of science and practice.

But what does it mean to study, to understand the essence of advanced pedagogical experience? The question is not easy. The fact is that a considerable part of teachers (especially beginners) do not have a clear idea of how to study advanced pedagogical experience and what to study in it. And this is quite justified. Because the method of studying and summarizing advanced pedagogical experience is indeed a rather complicated path of scientific research.

The essence of this method lies in the fact that, firstly, it is based on the study and theoretical understanding of the leading (strategic) ideas of the practice of the best schools and teachers who successfully carry out training, upbringing, development and education; secondly, it allows you to identify the most pressing scientific problems; thirdly, it creates a theoretical and methodological basis not only for establishing external patterns of the pedagogical process, but also for getting an opportunity to get closer to understanding the hidden (internal) pedagogical patterns; fourthly, it presents an opportunity to study pedagogical innovation, i.e. experience containing their own, original pedagogical findings.

What are the criteria for excellence in teaching? Let us name the criteria that seem to us the most indisputable and important.

Novelty and originality in the activities of the teacher. This feature can manifest itself in varying degrees: from the introduction of new provisions in science to the effective application of already known provisions and the rationalization of certain aspects of educational work.

High productivity of pedagogical work: high quality of knowledge, significant changes in the level of upbringing, in general, and in the special development of students.

A methodological system that represents a scientifically based model (paradigm) of an improved process of education and upbringing.

The stability and effectiveness of the experience, in which positive results are retained for a sufficiently long time.

Opportunity for creative application of best practices ideas by other educators.

The application of these criteria provides a comprehensive assessment of pedagogical experience and gives grounds, in our opinion, for its qualification as an advanced one.

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From the foregoing, we can conclude that the study and generalization of advanced pedagogical experience is not a temporary company, not an episodic event held once a year in the form of a scientific and practical seminar or conference, but an indispensable element of the daily activities of the entire teaching staff .

Thus, our analysis of the methods of scientific and pedagogical research allows each of these methods to play its specific role and help to study only certain aspects of the educational process. For a comprehensive study, the entire set of the considered methods in their interconnection and interdependence is used. Only their complex use can give the desired results. Pointing to the variety of methods in pedagogy, it is appropriate to note that in order to improve them, it is necessary to apply a wider range of innovative teachers to research activities, to teach them pedagogical creativity.

Documentation of pedagogical research.

The research documentation under study should be in the form of not only verbal descriptions of the observed phenomena, but also numerical characteristics (tables, charts, diagrams, visual-sensory displays, film and photo documentation). And the more diverse its forms, the more it gives to penetrate into the essence of the object under study.

Work on pedagogical research.

The documentation of a teacher-researcher can be divided into those that facilitate the collection of factual material (work diary, information and reference catalog) and help to keep the collected factual material in memory for comprehension, i.e. visual display of the received information in the form of text, a graphic sign and an image and their combinations.

Let us dwell on the main forms of maintaining scientific documentation.

One of the most common forms of fixing the studied facts is the researcher's working diary, where separate extracts from books are made in a convenient form, data on the phenomena encountered related to the research topic, own thoughts that arose in the process of observations and conversations are recorded.

The researcher's diary is documentation for oneself, to help memory. Records are kept "for the future", including facts, thoughts, figures that are not directly related to the topic. They got into the diary because during the observation it seemed to the researcher that this fact, thought or figure could be useful to him.

"The efficiency of the diary" depends mainly on the thoroughness of the record, the culture of its design. Experience shows that a significant part of the materials turns out to be unused not because of their uselessness, but due to the lack of a culture of registration: the researcher often cannot restore in memory the purpose and meaning of the previously made notes (it is not known where the quote came from, who owns the idea, where, when and in what circumstances the fact occurred, in connection with which the judgment arose, etc.)

In the process of scientific research, simultaneously with the diary, an information and reference catalog is maintained - a bibliographic card file, as well as a card file of persons and institutions related to the research problem. Documentation of an informational nature makes it possible to have all known sources of facts in view, as needed to return to these sources.

Descriptions of individual phenomena in the form of observation protocols are of great importance for subsequent generalizations. A particularly important

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role is played by careful descriptions of complex educational activities or those situations in the lives of children to which the researcher attaches special importance. In such descriptions, it is important to reflect as accurately as possible the situation against which the phenomenon occurs, the nature of the purposeful activity of educators, and the reaction of children.

Subsequently, looking at the records, the researcher has the opportunity to analyze the phenomenon, determine its internal logic, clarify, correct the thoughts that appeared during direct observation. Of course, this is possible only if the phenomenon is described very carefully, accurately, and if the researcher fixes not only thoughts, but also the facts that caused these conclusions.

Descriptions and protocols, kept in a single form, help to give a comparative analysis of similar phenomena observed at different times and in different places. Comparing the descriptions, one can draw conclusions about the general conditions, about the effectiveness of certain measures of influence on students. An important role in the analysis of the studied phenomena is played by diaries of observations of individual children and groups, as well as file cabinets of facts.

Hundreds of records characterizing the words and actions of a child in various situations over the course of several years make it possible to trace the formation of his personality, the process of the formation of one or another quality, the change in the nature of his relationship with his comrades and family.

CONCLUSION

Comparison of systematic diary entries about the child's behavior with materials from conversations, essays, etc. helps to reveal the process of formation of his personality under the influence of various factors. A comparison of similar materials characterizing the behavior of a number of children makes it possible to reasonably judge the effectiveness of the impact of these factors.

REFERENCES

1. Selivanov V.S. Fundamentals of general pedagogy: theory and methodology of education: textbook. allowance for students. ped. universities / V. S. Selivanov; ed. V. A. Slastenina.—4th ed., stereotype.—M.: Academy, 2005.—336 p.
2. Druzhilov S.A. Fundamentals of practical psychology and pedagogy for bachelors: textbook. manual for students of technical universities.-M. Flint, 2013.-241s.
3. Smirnov V.I. General pedagogy in theses, definitions, illustrations. – M.: Ped. total Russia, 1999. - P.57-67
4. Stolyarenko A.M. General pedagogy: textbook. allowance for university students studying in pedagogical specialties (030000) / A.M. Stolyarenko. – M.: UNITI-DANA, 2006, ch.2.
5. Kodzhaspitrova G.M. Pedagogy in schemes, tables, reference notes. - M .: Higher education, 2006. - pp. 42 - 47.
6. (S.A. Gutsanovich, A.M. Radkov. Testing in teaching mathematics: diagnostic and didactic foundations. - Mogilev, 1995. - P. 19 – 20)
7. M.N. Skatkin. Methodology and methods of pedagogical research. - M., 1986, p. 7.
8. Uzokov O.Kh., Muhidova O.N. (2021). Factor determining the efficiency of innovative activities of a teacher. International journal of discourse on innovation, integration and education. Vol. 2 No. 1, pp. 81-84.

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OCLC – 1242041055 METADATA IF – 8.145
Publisher: Master Journals

9. Uzakov.O.X. (2021). Innovative technologies and methods training in education. ACADEMICIA: An International Multidisciplinary Research Journal Vol. 11, Issue 1, January pp.1304– 1308.
10. Uzakov. O.X. (2020). Chaos as the basis of order. Entropy as measures of chaos. International Journal of Advanced Academic Studies, 2(2): 16149-16154.
11. Uzakov. O.X. (2020). The emergence of chaos. International Journal of Advanced Academic Studies.2(2): 221-223.
12. Sh M Mirzaev, O KhUzakov(2000). Solar absorption refrigerating unitNº (2),C. 68-71
13. YakubovYu.N, MirzaevSh.M, Boltaev S.A, Uzakov O. Akhmedov A.A. (1996). An increase in the sorbent efficiency in sun refrigerating plantsApplied solar energy № (1),pp. 65-68
14. Muhidova O. N. (2020). Methods and tools used in the teaching of technology to children. ISJ Theoretical & Applied Science, 04 (84), pp. 957-960.
15. Halimovna, K. S., Nurilloevna, M. O., Radzhabovna, K. D., Shavkatovna, R. G., & Hamidovna, R. I. (2019). The role of modern pedagogical technologies in the formation of students' communicative competence. Religación. Revista De Ciencias Sociales Y Humanidades, 4(15), pp. 261-265.
16. Muhidova O.N. (2021). Forming technological competence using visual tools technology lessons. Academicia: An International Multidisciplinary Research Journal. Vol. 11 Issue 1, January, pp. 852-855.
17. Muhidova O.N. (2021). Development of creative abilities in technology lessons. International journal of discourse on innovation, integration and education. Vol. 2 No. 2, pp. 119-122.
18. Muhidova O.N., Alekseeva N.N.(2021). Development of students creative abilities in technology lessons. International journal for innovative engineering and management research.Vol 10 Issue04, pp. 188-191.
19. Muhidova O.N. (2021). Development of students creative abilities. Euro-Asia Conferences, 5(1), pp. 178–181.
20. Kulieva Sh. H., Mukhidova O.N., Kulieva D.R., Rakhmonova G.Sh., Razhabova I.H. (2019). El papel de las tecnologias pedagogicas modernas en la formacion de la competencia comunicativa de los estudiantes.Religación. Revista de Ciencias Sociales y Humanidades. 4(15), pp. 261-265.
21. M. N. Karimova (2017) Manufacture of Modern Sewing and Knitting Products, Used by Mass Demand. Eastern European Scientific Journal №3 стр.71-73.
22. Kulieva Sh., Karimova M.(2021).Interactive Technologies as a Means to Improve the efficiency and Quality of the Educational Process.Interactive Technologies as a Means to Improve the efficiency and Quality of the Educational Process. Vol.3, pp.182-186.
23. Juraeva N., Kulieva Sh., Juraev Kh., Karimova M., Azimova M. (2020).Interactive Technologies as a Means to Improve the Efficiency and Quality of the Educational Process.International Journal of Psychosocial Rehabilitation. №24, pp.591-596.
24. Karimova M. (2020).Features of professional activitythe modern teacher of the subject" technology" ACADEMICIA: An International Multidisciplinary Research Journal10, №4. pp.585-588.
25. RZ Samadovna, KS Narzullayevna, SG Ergashevna (2020). Technology for the development of logical thinking in students in primary school. Journal of Critical Reviews 7/6. pp. 485-491.
26. T.M. Mukhamadovna, K.M Djamshitovna, Q.S Narzullayevna (2021). Art as a significant factor of forming world outlook of students.Middle European Scientific Bulletin vol. 11 pp. 426-430.

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Publisher: Master Journals

27. Kurbanova Sh.N., Toymurodova N. (2021). Methodology for conducting technology lessons on working with paper and cardboard. Academicia: An International Multidisciplinary Research Journal. Vol. 11 Issue 1, pp.588-596.
28. Mirjanova, N.N. (2020). Methods of teaching technology and the meaning of the term of pedagogical technology. ISJ Theoretical & Applied Science, 04 (84), pp. 961-963.
29. Mirjanova,N.N.(2021). The use of advanced educational programs is a guarantee of improving the quality of education in universities.International journal of discourse on innovation, integration and education, 02(3), pp. 315-318.
30. Mirjanova, N.N.(2021). The importance of developing technical creativity in students in technology lessons. International journal on orange technologies, Vol: 03 Issue: 05, pp.139-142.