

## Functions and Methods of Pedagogical Research

Abdullaeva Komila Tursunovna <sup>1</sup>

Kobilova Zarnigor Bayramaliyevna <sup>2</sup>

Tantiyeva Dilrabo Berdinazar qizi <sup>2</sup>

### *Abstract*

*This article discusses the preparation of the young generation for life in this and future society, carried out through specially created state and public structures, controlled and corrected by society; purposeful influence on a person in order to form certain value orientations, principles of behavior, assessment systems, attitudes towards oneself, other people, work, society.*

**Keywords:** *Anatomy, physiology, integration, dialectical, historical materialism, science of science, sociology, aesthetics, technical sciences - cybernetic, mathematical, computer pedagogy, suggestology.*

<sup>1</sup> Independent researcher KARSHI STATE UNIVERSITY, Karshi.Uzbekistan

<sup>2</sup> Student, Karshi State University, Karshi.Uzbekistan

### **The concept of scientific research methods of pedagogical science**

Each subject is closely related to its methods.

Pedagogy is a set of methods and tools for examining and learning the internal connections and relationships inherent in the real processes of upbringing, educating and teaching the younger generation.

The methods of science depend on the essence and principles of its methodology. Such a solid and convincing philosophical basis of pedagogy is the dialectical method.

There are two opposing directions, the metaphysical and the dialectical, in the study of the phenomena of pedagogy and in the determination of their laws.

Metaphysicists view the phenomena and facts of pedagogy as immutable, unrelated to other social phenomena other than time, place, and specific circumstances.

The dialectical method, in contrast to the interpretation of metaphysics, requires the study of the processes of teaching, learning, upbringing, and their essence.

In order to enrich and update its content, pedagogy studies existing pedagogical events and processes in ways that are consistent with its goals and objectives. In this sense, the research methods of pedagogy are a set of ways, methods and tools for examining the internal connections and relationships that are inherent in the real processes of educating, educating and training the younger generation. Among other disciplines, pedagogy has its own research object and research methods.

The more correctly the research methods of pedagogy are chosen, the better the updating and improvement of the content of education will be, and the richer the science of pedagogy will be. Therefore, a dogmatic approach to pedagogical research methods is not possible. On the other hand, the system of scientific research methods is not yet fully developed in science.

Scientific research also helps to improve the science of pedagogy, to investigate some pedagogical phenomena, to identify ways to solve them. It is possible to think based on the following existing and developed research methods:

- 1) Observation method;
- 2) method of conversation;
- 3) Method of working with literature;
- 4) Test, survey method;
- 5) Study of school documents;
- 6) Experiment, test method;
- 7) Mathematical method;
- 8) Research results and methods of their implementation; [A.1].

### **Requirements for research methods.**

Therefore, the requirements of pedagogical research methods are such as objectivity, accuracy of research tasks aimed at improving the pedagogical activity of teachers, taking into account the age characteristics of students, the laws of child psychology. However, the practice of teaching

and educating children itself has always been a source of pedagogical research. Only school experiments are the validity of every scientific theory.

The choice of research methods is important for the science itself, the more perfect its methods, the more successfully the actual tasks facing the science will be solved. The current system of methods of pedagogical research can not be considered a complete solution.

"In the study of pedagogical experience, the following methods can be combined: observation, experiment, conversation, study of students' creativity, study of documents of educational institutions."

"The main methods of scientific and pedagogical research are the study of the results of activities, such as observation, conversation, inspection, experimental methods"

It currently works based on the following methods. These are: pedagogical observation, inquiry, study of student results and documents of educational institutions, pedagogical experiment, modeling, study and dissemination of best practices, processing of sociological, mathematical and statistical materials, cybernetics, methods such as questionnaires, interviews, and filming are used.

Pedagogical observation is complex and special. At the same time it is necessary to be able to see the essence of the observed pedagogical phenomenon, to determine the dialectic of the interaction of teacher and student movements, the individuality of each of them. Every educator must be an observer, able to notice the details of certain events and facts, to analyze them. Observations are effective if they are organized in a practical and systematic way, taking into account the most relevant evidence, the pedagogical and psychological conclusions drawn from this observation in a timely manner. Monitoring can be conducted to improve and enhance the educational process. For example, how children grow in the teaching process, how the unity of educational and upbringing tasks is carried out in the classroom; how students' thinking is activated in the study of the basics of science, and so on. [A.2].

### **Describe research methods**

*Observation* - The observer keeps a record of the pedagogical event to be studied from the point of view of a specific goal. Clear factual material related to the object of observation will be prepared. Monitoring is carried out according to a clearly defined plan. Observations are made not only to observe ordinary events, to collect, record and identify certain facts, but also to improve and enhance the educational process.

Scientific observations determine and analyze not only the natural activities of students, but also their formation of scientific worldviews, the power of the thought process, their activity in drawing conclusions. As a result of such observations, the content of pedagogical science is enriched.

Interviews are used to improve the educational process or to determine the accuracy of scientific hypotheses. Typically, the interview method is used when working individually and in groups with a team of school teachers and students, parents, and the general public. Before implementing the interview method, a plan is developed, ways to implement it are identified, the results are analyzed and appropriate conclusions are drawn. Interview is used as an independent or auxiliary method of research.

During the interview, the researcher should pay attention to the following:

Ask a question in advance for the interview.

Set a time and place.

Create a comfortable environment for conversation and the opportunity to speak freely.

Immediate analysis of the results of the interview, comparison, drawing appropriate conclusions and applying them to school life is of pedagogical value.

*The study of school records* is a source of objective information about the state of education, the level of education of students, the study of personal files, reports of Methodists, class journals, diaries, minutes of meetings and conferences. Examination of school documents provides accurate information about teachers and students, their pedagogical activities.

*The word "experiment"* comes from the Latin word for "experiment," "experiment." Experimental work is carried out mainly to determine the scientific process of application of scientific hypotheses or practical work related to the educational process. The experiments will focus on identifying the legal links between education and training, implementing new methods based on the results, and improving the effectiveness of education. It also allows you to predict the progress, structure and results of the educational process.

The experimental method is carried out in 3 ways, depending on the conditions:

- 1) Natural experiment.
- 2) Laboratory experiment.
- 3) Practical experience.

*Mathematical method* - used in the analysis of mass materials (for example, to summarize the materials or data collected through questionnaires). This method ensures that the results of the experiment are accurately evaluated and the conclusions are reliable [A.3,4].

*Research results and their implementation.* In pedagogy, this process can take many forms. For example, researchers' presentations on the results of research at seminars and scientific conferences can be scientific articles, publication of books, methodological recommendations for teachers. There are many unresolved issues in pedagogy. These can be solved through research.

So, pedagogy is a science about the essence and laws of education, development, composition of the individual for a specific purpose.

### **Questionnaire, description of cybernetics, sociological methods**

*Questionnaire method.* Questionnaire is a French word that means check. The questionnaire method is a method of asking students in a certain way to get the necessary information about the quality of the composition of students, to determine their opinions and views, as well as to determine the direction of the profession carried out. The following requirements must be met when using this method:

1. Questionnaires should not become a source and universal tool for compiling pedagogical and psychological characteristics of students.
2. Questionnaires should not be too large and vague.
3. When conducting the questionnaire, the age characteristics of children should be taken into account and time should be given in the norm, etc. [A.4,5,].

**Cybernetics method.** Cybernetics is a Greek word meaning the art of controlling, managing, controlling a role. Cybernetics develops general principles and tools for managing production, technology, living organisms, and human activities. The content of cybernetics consists of basic theories such as information, programming, control systems, modeling.

Pedagogical cybernetics has its own characteristics as a separate form of management of the learning process, teaching and learning processes, because there is a huge difference between the pedagogical process and the automation of production processes.

Sociological method. We need to be aware that the number of students being studied using the methods listed above is limited and their disadvantage is the same. At this time, the majority of students are required to apply the sociological method in solving this or that problem of pedagogical science. For example, a survey based on quick questionnaires to determine how high school students spend their free time is conducted by many students and a clear conclusion is reached.

In recent years, mathematical methods and methods of processing statistical materials, in particular, are widely used in pedagogy. For example; When studying the homework of students in mathematics in one of the schools, it was found that independent homework in the IV grade - 80 (, in the VI grade-75 (, in the VIII grade-55). The main reason for this should be determined. can occur in two ways. First, it is necessary to look for the complexity of the curriculum of the subject of mathematics or the low quality of teaching this subject.

One of the methods of scientific research of pedagogy is the method of analysis of theoretical pedagogical ideas. (Method of theoretical analysis of pedagogical ideas). This method is not with a scientific generalization of deeply important issues of education. Perhaps the new laws in its implementation are based on experience (empirical method). This can be proved by the following example. The general purposeful development of the person takes place in interaction with the all-round development of the person.

It would be correct to draw such a conclusion from this. The process of upbringing should ensure the full development of the individual. [A.6, 7].

### **Conclusion**

Modeling is the creation of a special template (model) that is exactly similar to the real existing pedagogical system, in which it works on a material or imaginary scale, repeating the principles of organization and operation of the system. With the help of modeling, it is possible to deviate from the features of the system that are not important in this particular case. When a research educator uses this method, he or she will be able to synthesize integrated systems in controlled conditions instead of analytically studying individual features, forms, and processes.

Teachers of different disciplines used unique research methods to achieve their goals in working with students. For example, a math teacher achieved her goal using the cybernetics method, a physics teacher using the student creativity method, a chemistry teacher using the questionnaire method, and an elementary school teacher using the conversation method.

### **References**

1. Davletshin M.T., Tuychieva S.M. "General Psychology" T., 2002.
2. Zunnunov A, Khairullaev M., History of pedagogy. T: Sharq, 2000.

3. Zunnunov A. History of Uzbek pedagogy. T: The Teacher, 1997.
4. Comenius Ya.A., The Great Didactics, T., "Teacher", 1975.
5. Mavlonova R, Turaeva O., Pedagogy. T: The Teacher, 2001.
6. Munavvarov A.Q. under editing. Pedagogy. T: The Teacher, 1996.
7. The idea of national independence: basic concepts and principles. –T .: O'zbekiston, 2000.