

## SCIENTIFIC RESEARCH METHODS OF PEDAGOGICAL SCIENCE

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**ANNOTATION:** This article is devoted to the analysis of scientific research methods of pedagogy, their essence and significance in the modern educational process. Pedagogy uses various scientific research methods in order to enrich and update its content. These methods allow studying, analyzing and improving pedagogical processes aimed at personal education. The article presents the main methods such as observation, conversation, questionnaire, interview, pedagogical experience, document analysis, and describes in detail the procedure for their application and specific features.

**Keywords:** pedagogy, scientific research methods, research, process, content, person.

Any science has its own scientific research methods. Through these methods, it enriches and updates its content. In life and in the theory of knowledge of the objective world, there are issues of what to teach and how to teach, who to educate, and they are interconnected. Pedagogy studies existing pedagogical phenomena and processes with methods that are consistent with its goals and objectives in order to enrich and renew its content [ 1 ] .

The more perfect, reasonable, and correct the scientific research methods of pedagogy are chosen, the more the renewal and improvement of the content of education will improve, and the science of pedagogy will also be enriched. Pedagogical scientific research methods are methods of special investigation and knowledge of the internal essence, connections, and laws of the pedagogical process that determine the principles, object, and subjective factors of educating a person and providing him with deep, thorough scientific knowledge in certain areas [ 2 ] .

In modern conditions, the following methods are used to conduct research in the pedagogical direction:

1. Pedagogical observation method.
2. Interview method.
3. Questionnaire method.
4. Interview method.
5. Method of analyzing educational institution documents.
6. Test method.

7. Pedagogical analysis method.
8. Method of studying children's creativity.
9. Pedagogical experiment method.
10. Mathematical-statistical method

Pedagogical observation method. In the process of its application, the state of the problem under study [ 1 ] is determined based on the study of the educational process of educational institutions, and information is obtained about the difference between the indicators obtained before and after the experiment. Pedagogical observation is complex and has its own characteristics. Observation is carried out with a clear goal, continuously, consistently and systematically. If carried out, the expected result can be achieved. If the pedagogical observation being conducted serves to improve the quality of education and the formation of the student's personality, the importance of this method increases even more. It is important not to make mistakes when organizing pedagogical observation. This requires the researcher to:

- 1) have a clear goal in the observation process;
- 2) systematically organize observation;
- 3) solve specific tasks at each stage of observation;
- 4) carefully study the essence of each situation;
- 5) not rush to draw conclusions.

Interview method. This method helps to enrich the information obtained in the process of pedagogical observation, correctly assess the current situation, create pedagogical conditions that allow finding a solution to the problem, and involve the capabilities of the subjects of experimental work in solving the problem. The interview is conducted individually, in groups and in mass form, as appropriate. It is important to achieve a full manifestation of the capabilities of respondents during the interview [ 3 ] .

Questionnaire method (French - verification). With the help of this method, the evidence collected during pedagogical observation and interview is enriched. The questionnaire method is also based on organizing a dialogue with respondents on the basis of structured questions. Answers to questionnaire questions are most often obtained in writing. Based on the nature of the process being studied, the questionnaire questions are as follows:

- 1) open-ended questions (questions that allow respondents to give free, detailed answers);
- 2) closed-ended questions (respondents answer questions by choosing answer options such as “yes”, “no”, “partially” or “positive”, “satisfactory”, “negative”, etc.)

The interview method ensures that the respondent expresses his or her attitude to a phenomenon that illuminates one or another aspect of the problem being studied. The interview is conducted on the basis of presenting a series of questions to the respondent. The researcher's response to the questions asked during the interview process increases its effectiveness. Method of analyzing educational institution documents. In order to verify pedagogical phenomena and evidence, it is advisable to examine information that illuminates the content of the activities of educational institutions. This method is used to study the implementation of the requirements of the Law of the Republic of Uzbekistan "On Education" and the "National Program for the Training of Cadres" in the practice of educational institutions, to identify the level of activity in this regard, achievements and shortcomings, to popularize best practices and improve the pedagogical experience of the educational institution. Documents that reflect the essence of the activities of an educational institution include: a schedule of training sessions, a curriculum, group (or class) statements, personal sheets of students, orders, a notebook with minutes of the Pedagogical Council meeting, resolutions of the Pedagogical Council, an estimate and passport of the educational institution, a plan of educational work, reports on the organization of educational work, a notebook with a record of the equipment of the educational institution (desks, tables, chairs, soft furnishings, etc.), etc. [ 2 ] .Pedagogical analysis method. The purpose of using this method in the process of conducting research is to determine the level of study of the selected problem in philosophical, psychological and pedagogical directions, and serves to substantiate the theoretical validity of the idea put forward by the researcher. Method of studying children's creativity. This method is used to determine the competence, abilities of students in certain areas, as well as the level of knowledge, skills and qualifications in certain fields of science. In its application, students' creative works - diaries, essays, written works, abstracts, reports - serve as an important tool. The advantage of the method is that it creates a basis for seeing, assessing and developing the individual potential inherent in a particular student [ 4 ] .

Scientific and research methods of pedagogy play a key role in educating the individual, improving educational processes and developing the science of pedagogy. Through these methods, it is possible to develop students' knowledge and skills, analyze pedagogical processes, identify existing problems and solve them. In modern educational conditions, the use of methods such as observation, interview, questionnaire, experiment and mathematical-statistical analysis makes pedagogical activity more effective. At the same time, it is necessary to take into account the uniqueness and expediency of each method [ 5 ] .

Conclusion: Scientific and research methods of pedagogy play a key role in educating a person, improving educational processes and developing pedagogical science. Through these methods, it is possible to develop students' knowledge and skills, analyze pedagogical processes, identify existing problems and solve them. In modern educational conditions, the use of methods such as observation, interview, questionnaire, experiment and mathematical-statistical analysis makes pedagogical activity more effective. At the same time, it is necessary to take into account the uniqueness and expediency of each method.

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