

METHODOLOGICAL FOUNDATIONS OF THE IMPLEMENTATION OF THE PISA INTERNATIONAL ASSESSMENT SYSTEM IN THE SECONDARY GENERAL EDUCATION SYSTEM

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Abstract. *The article discusses the methodology and results of the application of non-standard tasks (PISA) in teaching physics in secondary school.*

Keywords: *PISA, non-standard tasks, pedagogical experiment, national program.*

At the moment, a variety of pedagogical innovations are used in school education. It depends, first of all, on the traditions and status of the institution. Much attention is paid to the standardization of research procedures. The study of international assessment systems is carried out in strict accordance with the uniform instructions and rules developed by the international coordination center.

The main purpose of the international study is a comparative assessment of the quality of mathematical and natural science education in primary and secondary schools.

In accordance with the goals set out in the Strategy of Actions for the Further Development of the Republic of Uzbekistan, the issue of the need for qualified teaching staff is being resolved in connection with the full coverage of preschool children with preschool education, the introduction of 11-year secondary education by correspondence (special incomplete), evening (shift) secondary education, higher education and training in joint educational programs with by foreign countries.

The National Center for International Studies on the Assessment of the Quality of Education (hereinafter referred to as the National Center) under the State Inspectorate for Quality Control of Education under the Cabinet of Ministers of the Republic of Uzbekistan, having defined its main tasks and activities.

In order to ensure full participation in international assessment programs and competitions for assessing students' literacy, to effectively use the potential of the structural units of the Ministry (Republican Educational Center, Republican Center for Vocational Guidance and Psychological and Pedagogical Diagnostics), if necessary, to review the functions of the relevant units.

Methods of pedagogical research are a set of techniques and operations aimed at studying pedagogical phenomena and solving various scientific and pedagogical problems.

It is important to emphasize that research methods are chosen taking into account the specifics of the tasks set by the scientist for himself, and not by simply listing all known methods in pedagogy.

The tasks of the experiment are set in the sequence that is determined by the purpose of the experiment. In accordance with the tasks, the stages of experimental research are established, its structure is determined.

To set the tasks of the experiment, it is useful to use the method of bottom-up analysis, that is, having imagined the final result, ask the questions: what knowledge should be available to get this result, what steps should be taken to get this knowledge?

During the experiment, it is necessary to establish the nature of changes in the level of formation of students' skills with the introduction of tests and non-standard tasks in astronomy. Let's find out what tasks need to be solved to achieve the research goal.

Table 1.

Questions	Tasks of the experiment
1. How to determine the nature of the change in the level of formation of skills?	1. Compare the level of skills formed under the influence of the algorithmic method with similar skills, the formation of which was carried out without its use.
2. What do you need to know to compare the two intended values (skills)?	2. Measure the levels of formation of these skills.
3. How to measure the level of formation of the skill?	3. To develop a way to assess the level of skill formation by introducing tests and non-standard tasks in astronomy.
4. How to get the necessary data on the nature of the skills formed in students with the introduction of tests and non-standard tasks in physics?	4. Conduct experimental training using the introduction of tests and non-standard tasks in astronomy in the most natural conditions and measure the learning outcomes.
5. How to get data on the nature of a similar type of skills formed under the influence of other teaching methods?	5. To carry out control measurements of the relevant skills in classes in which experimental training was not carried out.

The tasks assigned to the experiment allow us to identify the following main stages of experimental research:

1. Diagnostic experiment to establish the level of formation of skills in natural conditions.
2. A formative experiment to establish the formation of skills with the introduction of tests and non-standard tasks in astronomy.
3. Diagnostic experiment to determine the results of experimental training.
4. Activity-based, personal, systemic approaches are of great importance in psychological and pedagogical research.

The activity approach requires studying pedagogical processes in the logic of a holistic consideration of all the main components of activity: its goals, motives, actions, operations, methods of regulation, control and analysis of the results achieved. With this approach, the developed system of measures acquires a complete, complete character: from the purpose of the activity to its final result.

Since personalities necessarily interact in pedagogical phenomena, a personal approach is also very important for research. The pedagogical basis of the personal approach is the teaching about the role of the individual in society, about the relationship between the collective and the individual, about the comprehensive, harmonious development of the individual, about the simultaneous consideration of the individual as an object and subject of education.

A systematic approach requires considering all possible forms and methods of solving pedagogical tasks in a holistic and interrelated manner and choosing optimal options based on comparing the capabilities of each of them.

The experimental effect is only on one class. And the indicators of both classes are evaluated, on the basis of which conclusions are drawn about the influence of the experimental factor.

The main purpose of the pedagogical experiment is to determine the reliability of the results of the master's thesis.

To do this, we chose as a control class 8 "A" of secondary school No. 69 of the Tashkent region of the Yashnaobod district, and as an experimental class 8 "B".

It was decided to conduct an experiment using the method of having a single similarity in order to identify the reliability of data on the use of a new technique that increases the level of knowledge of students. This technique was applied by one teacher, in one class, along with other forms of organization of the educational process.

The training experiment was conducted by conducting lessons with the solution of tests and non-standard physics problems based on PISA. The comparison was conducted with classes where tests and non-standard physics problems based on PISA had not been used before. During the experiment, the physiological and psychological characteristics of the students of the control and experimental classes were taken into account.

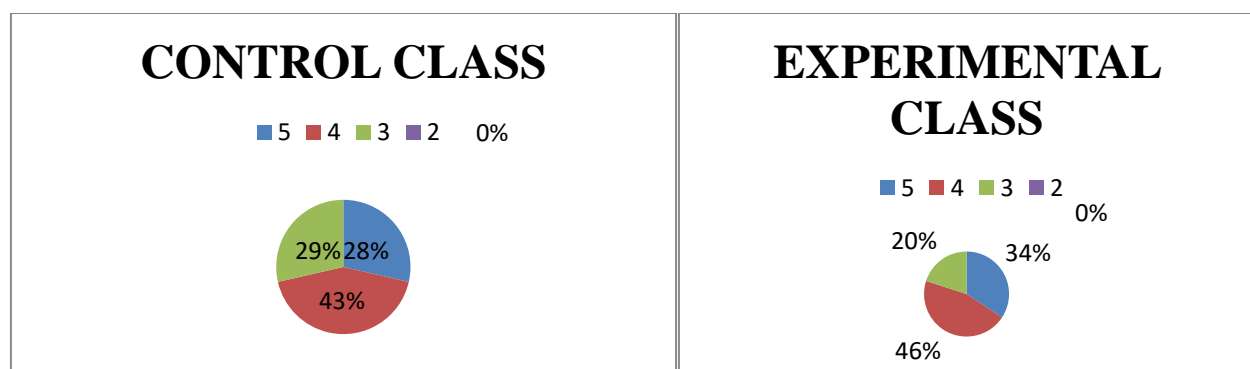
With the help of the developed tests and non-standard tasks on PISA physics based on PISA and the development of lessons from our side, gaps in students' knowledge were identified and shortcomings that arose during the lessons were corrected.

The experiment tested the effectiveness of lessons using tests and non-standard physics tasks based on PISA.

Table 2

Generalized table of test results of student of 8 "A" and 8 "B" classes

Control class 8 "A" class					Experimental class 8 "B" class						
Number of students	Evaluations Class				Knowledge quality analysis	Number of students	Evaluations Class				Knowledge quality analysis
	5	4	3	2			5	4	3	2	
35	5	4	3	2	71 %	35	5	4	3	2	80 %
	10	15	10	-			12	16	7	-	



The diagram shows that in the experimental class the results differ from the control class by 9%. The results of the experiments showed an increase in the level of knowledge among students, which allowed us to conclude that it is the new technique that has a beneficial effect on the level of knowledge of students. This indicates that the effectiveness of lessons using tests and non-standard tasks in physics and astronomy based on PISA in a secondary school is more effective than the traditional method of teaching physics.

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