

Methodology of Teaching Physics at the Requirement of International Assessment Programs (Pisa)

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Annotation. The article tells about the worldwide educational program PISA, about the purpose, functions, systematic composition and directions of the program. It is considered in what forms of training the implementation of the educational program is organized and what results are obtained from this program, how the PISA program is monitored.

Key words: relevance, PISA international program, quality of education, level of education, analysis, testing, assessment problems, educational achievements.

Analyzing the problem of assessing educational achievements, it should be noted that this problem was considered by researchers from various angles. A large group of works in didactics and methods of teaching physics is devoted to the study of the functions of testing and evaluating knowledge in the educational process, methods of accounting for knowledge in the traditional system of education (I.Ya. Lerner, E.I. Perovsky, M.N. Skatkin, S.E. Kamenetsky, N.S. Purysheva, V.G. Razumovsky, N.A. Rodina, E.E. Evenchik and others). Other areas are related to the study of the educational functions of assessment, the study of the impact of assessment on the formation of self-esteem of students (B.G. Ananiev, L.I. Bozhovich, A.B. Vorontsov, etc.), the use of various methods and forms of verification in control and evaluation activities teachers (V.P. Bospalko, Yu.I. Dik, A.E. Maron, V.P. Shatalov, O.V. Onoprienko, P.M. Erdnieva, etc.), using test technologies to assess educational achievements in physics (P. Karpinchik, V.A. Orlov, N.S. Purysheva, I.I. Nurminsky, G.G. Nikiforov, N.E. Vazheevskaya and others).

The Program for International Student Assessment (PISA) is a monitoring study of the quality of general education that answers the question "Do 15-year-old students who have received compulsory general education have the knowledge and skills they need to fully function in modern society, i.e. to solve a wide range of problems in various spheres of human activity, communication and social relations? This program is implemented by the Organization for Economic Cooperation and Development (OECD - Organization for Economic Cooperation and Development). The study has been carried out in three-year cycles since 2000.

An international PISA survey is planned every year. As part of the study, computer testing of 15-year-old students in reading science, mathematics, and solving global problems will be carried out. Additionally, financial literacy testing will be conducted on a part of the sample.

The quality of education is assessed within the framework of the international PISA program. There are benefits to participating in the PISA survey of schoolchildren. PISA (from English - programmer for student assessment) is an international program for assessing the educational

achievements of students PISA is carried out by the Organization for Economic Cooperation and Development. The purpose of the study, as reflected in the project documents, is to assess whether students who have received general compulsory education have the knowledge and skills necessary to fully function in society. In addition to the assessment of educational achievement, the impact on these achievements of various factors related to students and their families, school and educational opportunities that exist outside of school is studied.

The object of the study is the educational achievements of 15-year-old students. The choice of these students is explained by schooling, and the programs of study in different countries have much in common. It is at this stage of education that it is important to determine the state of the knowledge and skills that may be useful to students in the future, as well as to assess the ability of students to independently acquire the knowledge necessary for successful adaptation in the modern world.

PISA studies are conducted in three-year cycles. It was first developed in 1997 and first used in 2000. To date, a total of 7 tests have been conducted under the PISA program (2000, 2003, 2006, 2009, 2012, 2015 and 2018), the next tests were scheduled for 2021, but were postponed to 2022 due to the global pandemic the world.

In each cycle, the main attention (two-thirds of the testing time) is removed to one of the three areas of research indicated above. For the other two, a generalized characteristic of students' literacy in this area is obtained. In 2000, the main direction was "reading literacy", in 2003 - "mathematical literacy", in 2006 - "science literacy".

But the purpose of participating in this program is not to conduct tests or prepare students for testing, but to develop the skills of the 21st century in young people, to create a solid foundation for creating competitive personnel.

What is the purpose of the PISA program, why is it needed and on what basis are the questions built?

The 21st century is the century of information technologies. The current century requires competencies from its specialists that are completely different from previous ones. If earlier a strong memory, encyclopedic knowledge, professionals who knew as much information as possible in their field were highly valued, but now this knowledge is no longer of decisive importance. Search engines, online encyclopedias, excellent online industry databases have been created, and now the need to remember this information has faded into the background.

The ability to analyze this knowledge and generate new information from it becomes more and more important for a modern specialist.

PISA tests are conducted to reflect the same changes in the education system, to determine the extent to which students have the skills to analyze, draw conclusions and communicate based on real events, as well as how well the education system adapts to these changes.

The content of the PISA test. PISA tests are conducted in 6 areas: reading, math literacy, science, creative thinking, collaborative problem solving and financial literacy.

The test focuses on students' knowledge of the most basic concepts, basic knowledge and skills in these areas that they can use in real life situations! These tests are not designed to test students' knowledge of specific topics during the lesson!

PISA tests use four testing methods:

1. Tests with one answer;
2. Tests with multiple answers;
3. Questions with short or detailed answers;
4. The student's opinion about solving a specific problem (usually the examiner has general answers to such questions, the student's answer does not have to exactly match the answer of the test compiler, the student's creativity is supported).

It is also expected to conduct surveys of students simultaneously with tests.

PISA: main directions

Reading literacy: the ability of a person to understand and use written texts, to reflect on them and to engage in reading in order to achieve their goals, expand their knowledge and opportunities, and participate in social life.

Here the concept of reading literacy has a broad meaning. The purpose of this

direction is for students to understand the text from a given work of art, biographies, letters, documents, articles from newspapers and magazines, various manuals, maps, diagrams, images, maps, graphs and tables. Identify competencies such as the ability to think about content, evaluate the content of a text, and express one's own opinion about what one has read.

Mathematical Literacy: The ability of an individual to formulate, apply and interpret mathematics in a variety of contexts. It includes mathematical reasoning, the use of mathematical concepts, procedures, facts, and tools to describe, explain, and predict phenomena. It helps people understand the role of mathematics in the world, make well-informed judgments and make decisions that should be made by constructive, active and reflective citizens.

The term literacy in this section is used to indicate that the purpose of this section is usually not to determine the extent to which a student has mastered the knowledge required by the school curriculum. The focus is on the use of mathematical knowledge using various methods that require thinking and intuitive decision making in various life situations. But answering such questions may require the knowledge and skills provided by the school curriculum.

These directed tests usually offer mathematical situations that can be encountered in various areas of life (medicine, home, sports, etc.).

Science literacy: the ability to identify problems that can be solved scientifically in life situations, to draw conclusions based on observation and experimentation. These conclusions are the main goal of this section - to understand the world around us and develop the ability to understand the changes that occur in it as a result of human activity, and accordingly make the necessary decisions.

Introduction into practice of international programs for assessing the knowledge of students of educational institutions of Uzbekistan. An analysis is made of international programs that determine the quality and level of education, which are widely used as a criterion for further improving the quality of education in different countries. The relevance of this topic is due to the growing interest of educational institutions of Uzbekistan in a new monitoring system for assessing the quality of education, based on identifying and comparing with international assessment programs. The purpose of our study is to show the positive aspects of the international program PISA - a system for assessing literacy and competence to improve the educational process in schools in Uzbekistan. Global social, economic and ideological changes in the life of the Uzbek society entail changes in the field of education. In this regard, on November 12, 2018, an agreement was reached between the State Inspectorate for Quality Control of Education under the Cabinet of Ministers of the Republic of Uzbekistan and the International Organization for Cooperation and Development on participation in the international program for assessing knowledge and students.

One of these international programs is the PISA program - the literacy assessment system.

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