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PISA INTERNATIONAL ASSESSMENT PROGRAM

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Abstract: This article examines the PISA international assessment program and the importance of measuring mathematical literacy in it. The PISA program assesses students' ability to apply mathematical knowledge in practice. Also, the results of participation and the weaknesses of the education system in Uzbekistan, including textbooks, teaching methods, and student motivation problems were analyzed. Recommendations for creating practical textbooks, training teachers and increasing the interest of students are given for the development of mathematical literacy.

Key words: PISA (Programme for International Student Assessment), International Assessment, Mathematical Literacy, Quality of Education, Knowledge and Skills, Orientation to Practice, Logical Thinking, Textbooks and Methodology, Student Motivation, O' Education system of Uzbekistan, Real-life situations, Teacher qualifications, International experience, Education reforms, Analysis of results

PISA (Program for International Student Assessment) is an international assessment program that is held every three years. This program was developed to assess the quality of education and life skills of students. It was launched in 2000 at the initiative of the Organization for Economic Co-operation and Development (OECD). The PISA program measures students' ability to apply their knowledge in practice rather than the level of traditional subject mastery. serves to improve. This article talks about the structure of the program, its importance and its impact in Uzbekistan.

The purpose and structure of PISA

The main purpose of PISA is to determine the knowledge and life skills of 15-year-old students. The program covers the following three main areas:

1. Mathematical literacy - students' ability to solve mathematical problems and think logically is evaluated.
2. Reading literacy - the ability to understand, analyze and use the text is tested.
3. Literacy of natural sciences - the ability to understand and use scientific processes is measured.

The results of the assessment show not only the level of knowledge of the students, but also how they know how to apply them in life. PISA can also explore other additional domains (such as financial literacy or creative thinking).

The importance of the PISA program: the PISA results allow the country's education system to be analyzed on an international scale. The program is important in the following aspects: Improving the education system: based on PISA data, countries can revise their education policies and develop development strategies.

International exchange of experience: The experience of leading countries can be used to strengthen the weak points of the education system. Preparation

for life: Students' readiness for the future is assessed by studying their adaptability to real-life situations.

PISA program in Uzbekistan

Uzbekistan participated in the PISA study for the first time in 2022. This was an important step towards evaluating the quality of the country's education according to international standards. The main purpose of participation was to analyze their own education system and identify its weaknesses.

The PISA study gave a number of important conclusions for the educational system of Uzbekistan:

1. Quality of education: The results showed that there are certain deficiencies in the literacy level of students in reading, mathematics and natural sciences.
2. Training of teachers: It was noted the need to introduce modern educational methodologies and improve the qualifications of teachers.
3. Educational content: It was emphasized that textbooks and educational materials should be more practical.

Mathematical Literacy: A PISA Framework Approach

Mathematical literacy is one of the main areas of special attention in the PISA assessment program. The purpose of this direction is to assess students' mathematical knowledge and their ability to use it in everyday life. In the program, mathematics is considered as a means of solving real problems based on mathematical logic, rather than memorizing formulas and algorithms, as in traditional educational programs.

The concept of mathematical literacy in PISA

Mathematical literacy is defined in PISA as follows: "Mathematical literacy is an individual's ability to identify, analyze and solve problems in the environment based on mathematical concepts."

This concept has three main components:

1. Understanding mathematics - the ability to identify mathematical models and concepts.
2. Practical application - the ability to use mathematical methods in different situations.
3. Logical thinking - analyzing the problem and developing a solution on a mathematical basis.

Features of mathematics assignments

PISA mathematics tasks include the following aspects: Context-oriented: Tasks are based on real-life situations. For example, everyday activities such as calculating costs, analyzing charts, or studying transport schedules. Levels of Difficulty: Tasks vary in complexity, from simple calculations to complex problem solving.

Scope: Algebra, geometry, statistical analysis and other mathematical areas.

Criteria for measuring mathematical literacy. In the PISA study, the level of knowledge of students in mathematics is evaluated based on the following criteria:

1. Depth of knowledge: How deeply the student knows and understands mathematical concepts. 2. Applicability: Can the student apply his knowledge in practice? 3. Innovative approach: How does the student solve new or unconventional problems?

Situation and problems in Uzbekistan

When Uzbekistan participated in the PISA assessment program for the first time, it was noted that the results of students' mathematical literacy were below the international average. This is due to the following factors:

Non-practical textbooks: Math textbooks are more theory-based and do not develop real-life problem solving.

Inadequate modernity of teaching methods: Teachers are not sufficiently prepared to use modern approaches.

Student motivation: Many students study math only to pass tests, not to develop life skills.

Proposals for the development of mathematical literacy: Uzbekistan can implement the following measures to improve mathematical literacy:

1. Development of practical textbooks: Mathematical textbooks should be enriched with problems based on life situations. 2. Training of teachers: They should be introduced to innovative methods, including methods compatible with the PISA approach. 3. Implementation of practical projects: Organization of practical projects and interactive activities to develop students' skills in using mathematics in everyday life.

4. To increase the interest of students: To show the useful and interesting aspects of mathematics, to organize a competitive environment and competitions.

Summary

The PISA international assessment program provides an opportunity to improve the quality of education by analyzing the ability of students to apply their knowledge in life. For Uzbekistan, this program is an important tool for studying international experience and improving the education system. In the future, in order to improve the results of the PISA study, Uzbekistan should implement reforms aimed at modernizing the educational process, improving the qualifications of teachers, and developing students' life skills. In this way, the quality of education of the country can meet high international standards. Mathematical literacy is one of the main factors of successful functioning in modern society. Assessment of mathematical literacy within the framework of PISA allows to study not only the knowledge of students, but also their skills of logical thinking and practical use. Based on the results of PISA, Uzbekistan can improve the quality of education at the international level by introducing new approaches to mathematics education. At the same time, these efforts contribute not only to the development of the national education system, but also to the economic and social development of the country.

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