

The Importance of International Assessment Programs in Teaching Mathematics

Mukhitdinova Nodira Mamalatifovna

Doctor of philosophy (Ph.D.), associate professor at the Tashkent State Pedagogical University named after Nizami

Annotation:

The article discusses the application and importance of international assessment programs in improving the quality of education in the teaching of mathematics, increasing pupils' literacy, the development of science.

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INTRODUCTION

In the period of deepening transformational processes of globalization, the world education system requires rapid development based on social processes. Through education, a new generation will be formed in society that will be able to fulfill future tasks. A number of international organizations, such as PISA (Programme for International Student Assessment), PIRLS (Progress in International Reading Literacy Study), TIMSS (Trends in International Mathematics and Science Study), which determine the quality, level and level of education in the world. programs are available and are widely used as a key criterion for further improving the quality of education in developed countries.


























Decree of the President of the Republic of Uzbekistan No. PF-5712 of April 29, 2019 "On approval of the Concept of development of the public education system of the Republic of Uzbekistan until 2030" achievement is set. The strategic goals of the public education system have been identified and include: the creation of opportunities for quality education in the general education system in accordance with the innovative development of the economy, best international practices and modern requirements of society; the development of human capital as a key factor in determining the level of pupils competitiveness in the labor market and in the country as a whole.

The establishment of the PISA International Assessment Survey in Uzbekistan and the participation of the ministries and departments responsible for it in the Cabinet of Ministers of the Republic of Uzbekistan "On participation in the PISA and TALIS international surveys conducted by the Organization for Economic Cooperation and Development" 6. According to the document, the State Inspectorate for Education Quality Control, the Ministry of Public Education, the Ministry of Foreign Affairs, the Ministry of Justice, the Ministry of Justice, the Ministry of Finance and the Ministry of Economy will participate in the PISA and TALIS international surveys conducted by the Organization for Economic Cooperation and Development.

Proposals for the establishment of a "National Center for International Research" to assess the quality of education under the Inspectorate were approved.

The main goal of the PISA International Student Literacy Survey is officially defined as follows: How do 15-year-old students meet the requirements of the scientific community? The main purpose of assessment research is to determine how well pupils are able to apply the knowledge they are learning in school in their daily lives.

Table 1. Distribution of PISA international assessment research by years

Basic competencies	Years of appraisal research							
	2000	2003	2006	2009	2012	2015	2018	2021
Reading								
Mathematics								
Natural sciences								
 core competence in research								
 basic competence in research								

The purpose of the PISA assessment is to provide the education ministries and agencies of the participating countries with sufficient information to answer the following questions:

- are pupils adequately prepared to take on an active civic role in a democratic society at the end of compulsory education?
- Do pupils have the ability to analyze, substantiate, and communicate their ideas and imaginations?
- Are pupils enrolled in school based on current labor market requirements?
- Do pupils meet the requirements of "lifelong learning"?

In addition to the analysis of school education, the PISA assessment study provides the necessary information for other stages of education. In the system of continuing education, such information is of great importance. In 2000, a total of 250,000 pupils from 32 countries participated in the study. Politically, the PISA assessment program is administered internationally by the PISA Governing Board (PGB). The PISA assessment study was launched in 1997 at the initiative of the Organization for Economic Cooperation and Development (OECD) and has been implemented since 2000 and is conducted every three years (Table 1).

REFERENCES AND METHODOLOGY OF THE LITERATURE

On May 7, 2020, the Presidential Decree No. PQ-4708 "On measures to improve the quality of education and development of scientific research in the field of mathematics" was adopted. The essence of this

decision is that it pays special attention to the development of mathematics as a priority in the development of science in our country.

In order to improve the quality of education, it is necessary to continuously monitor its status and development trends, and to conduct an objective and adequate assessment of pupils' academic achievements. This is especially important at the level of general secondary education, which lays the groundwork for the further personal and civic development of pupils. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated December 8, 2018 No 997 "On measures to organize international research in the field of education quality assessment in the system of public education" research and innovation activities, first of all, in order to fully support and encourage the creative ideas and creativity of the younger generation.

PISA (Program for International Student Assessment), an international program to assess students' knowledge, a study of 15-year-olds' life skills in mathematics, science and mother tongue, TIMSS Mathematics and Natural Sciences 4th and 8th grade student achievement assessment, STEAM - based on an interdisciplinary integration approach, the assessment of knowledge in mathematics is based on international assessment programs such as teacher-student collaboration.

DISCUSSION

Today, our specialists are involved in the systematic monitoring of the implementation of international assessment programs in the educational process, the dissemination of best practices in this area and the development of recommendations and guidelines for educational institutions based on it. Using innovative teaching methods, prepares educational and methodological recommendations for improving the skills of teachers in mathematics and natural sciences.

The above requirements are very important for the education system, which means that, as in most foreign countries, it is necessary to attract best practices to improve the quality of education by assessing and monitoring the development of education and science. Mathematical methods and models are being applied to all spheres of practical life more than ever, and various probable forms of development are being tested on the basis of thematic mathematical solutions. As a result, the interdependence of mathematics with other disciplines has grown, and the interdisciplinary approach based on mathematical modeling has become one of the enduring features of modern education.

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This is especially important at the level of general secondary education, which lays the groundwork for the further personal and civic development of pupils. Organization of international research in the field of education quality assessment in the public education system by the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated December 8, 2018 No 997 "On measures to organize international research in the field of education quality assessment in public education" it was adopted in order to establish international contacts, to fully support and encourage the research and innovation activities of young pupils, first of all, the creative ideas and creativity of the younger generation.

RESULT

Practice shows that when pupils begin to study mathematics in the lower grades, they show interest in the first topics taught in the lesson, actively participate in the discussion of the teacher's questions. However, over time, there will be only 1-2 pupils who are still passionate about mathematics. The uniformity of teachers' working methods leads to a decrease in interest among pupils. Based on the results and analysis of international research, the following requirements can be set for the knowledge and skills of pupils in order to develop their mathematical literacy:

- search and use of mathematical definitions, formulas and other facts from textbooks and reference books;
- data collection, analysis, processing, synthesis;
- use of mathematical formulas, independently formulate formulas representing the relationship between quantities based on the generalization of certain special cases;
- work with mathematical text (analysis and extraction of necessary information), the ability to express their thoughts in a precise and accurate way using mathematical terms, symbols and symbols, as well as oral and written expression;
- can be used to solve practical problems of a practical nature, if necessary, to use the necessary references and computational tools to solve them. Modern mathematics in science, as well as our problems that have been waiting to be solved for thousands of years. To solve them, we need to regularly train mature mathematicians.

CONCLUSION

In conclusion, it should be noted that as a result of the ongoing reforms in our country, huge economic growth rates are being achieved, which further increases the demand for qualified personnel and mature professionals in all areas. This in itself requires increasing the interest of our students in the lessons and increasing the attention of teachers to comprehensive education. One of the main goals of the PISA assessment is to enable students to apply the knowledge gained in the school education system in their personal, professional and community life. The PISA assessment is important for the governments of the countries involved in the study, the ministries, agencies and education researchers responsible for the education system, in identifying measures to reform and develop the education system.

School education will also be reformed and developed alongside the political, economic and social aspects of society. The main goal of the reforms in Uzbekistan is to study the achievements and experience of developed countries, taking into account the conditions of Uzbekistan. The role of human resources in society is unique, and the education system faces important challenges.

Students' intelligence, thinking, consciousness, will, social activity, its spirituality, views, moral and aesthetic knowledge, inner spiritual experiences, perspective on global processes, independent decision-making skills and readiness for independent life are new to the school education system. setting new assignments. The need for competencies in addition to knowledge and skills of students is reflected in international experience.

The following suggestions on the successful participation of the Republic of Uzbekistan in international research are relevant. The quality of education is in many respects directly related to the process of implementing the requirements reflected in the educational documents in schools.

One of the important tasks of the preparatory phase of participation in the assessment survey is the development of guidelines for teachers to create teaching and test assignments similar to those used in the PISA assessment survey. Indeed, the formation of students' core competencies directly depends on the tasks used in the learning process and their structure, purpose and content.

The development of competency-based learning tasks is of great importance in the formation of basic and science-specific competencies specified in the educational standards. It should be noted that in the world experience there are problems with the learning process and the tasks produced for independent learning, and the production of assignments is a time-consuming and resource-intensive activity. In some countries, private educational institutions separate from the education system are involved in developing assignments for the school system. Of course, task development is a complex and complex task. The need for testologists to develop assignments in the education system of Uzbekistan is also emphasized. Acceleration of practical

and scientific research in this area in the education system has an impact on the effectiveness of education. Assignments are at the heart of the PISA International Assessment Program. The introduction of tasks similar to these in the learning process is considered a prerequisite for the formation of basic and subject-specific competencies. Tasks focus on the application of knowledge, the integration of interdisciplinary knowledge, decision-making, evaluation of their solutions, estimation of errors. Research assignments are not limited to a single study topic, but assess basic core and interdisciplinary competencies.

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