

5-10-2022

OBJECTIVES AND TASKS OF ASSESSMENT IN THE INTERNATIONAL SYSTEM OF MATHEMATICS

Abulqosim Abdurashidovich Parmanov

Jizzakh branch of the National University of Uzbekistan, PhD, abulqosimparmanov@gmail.com

Follow this and additional works at: <https://uzjournals.edu.uz/tziuj>



Part of the [Higher Education Administration Commons](#)

Recommended Citation

Parmanov, Abulqosim Abdurashidovich (2022) "OBJECTIVES AND TASKS OF ASSESSMENT IN THE INTERNATIONAL SYSTEM OF MATHEMATICS," *Mental Enlightenment Scientific-Methodological Journal*: Vol. 2022: Iss. 3, Article 23.

Available at: <https://uzjournals.edu.uz/tziuj/vol2022/iss3/23>

This Article is brought to you for free and open access by 2030 Uzbekistan Research Online. It has been accepted for inclusion in Mental Enlightenment Scientific-Methodological Journal by an authorized editor of 2030 Uzbekistan Research Online. For more information, please contact sh.erkinov@edu.uz.

OBJECTIVES AND TASKS OF ASSESSMENT IN THE INTERNATIONAL SYSTEM OF MATHEMATICS

Parmanov Abulqosim Abdurashidovich

Jizzakh branch of the National University of Uzbekistan, PhD

E-mail address: abulqosimparmanov@gmail.com

Abstract : This article is about the assessment of mathematics in the international system, which describes the purpose and objectives of the international assessment system PISA and the methodological work that needs to be done in the education system of the Republic. Depending on the performance of the PISA results, changes are proposed in the education system that need to be made in order to achieve high results.

Keywords: International Assessment System, PISA Research, Mathematical Competence, Mathematical Literacy.

INTRODUCTION

On August 12, 2018, the Cabinet of Ministers of the Republic of Uzbekistan adopted Resolution No. 997 "On measures to organize international research in the field of assessing the quality of education in the public education system." It instructs the State Inspectorate for Quality Control in Education under the Cabinet of Ministers of the Republic of Uzbekistan, the Ministry of Public Education, the Ministry of Foreign Affairs and the Ministry of Finance to conduct international research on the following international assessment programs:

Progress in International Reading and Literacy Study (PIRLS) - to assess the level of reading and comprehension of text in primary school students;

Trends in International Mathematics and Science Study (TIMSS) - to assess the level of mastery of 4th and 8th grade students in mathematics and science;

The Program for International Student Assessment (PISA) - to assess the literacy of 15-year-old students in reading, mathematics and science;

The Teaching and Learning International Survey (TALIS) is a study of the teaching and learning environment and the working conditions of teachers in general secondary education.

Based on the identified tasks, the creation of didactic support for the assessment of learning outcomes of students in general secondary schools in the international system is considered a topical issue.

METHODS AND MATERIALS

In order to implement international programs to assess the knowledge of students of secondary schools in our country, preliminary work has begun, and the necessary and necessary tasks have been identified. In other words, in order to bring students' knowledge in line with international requirements, the Uzbek education system has expanded the use of assessment programs such as PISA (Program for International Student Assessment), TIMSS (Trends in Mathematics and Sciends Study) in mathematics. llash work has begun.

RESULTS AND DISCUSSIONS

The PISA international program was developed in 1997 and was first implemented in 2000. The program identifies and compares the achievements and shortcomings of the education system of different countries, and promotes their achievements. The results of this research are followed with interest by all countries of the world. As a result, more and more countries are participating in and offering to participate in these studies. [4]

Singaporean students have been achieving high results since 1995, according to winners of various international math competitions and PISA surveys. What is the secret? Why Many Countries Are Introducing Singaporean Mathematics to the Teaching of Mathematics. Questions such as what are its advantages form the basis of our research [3]:

The study of mathematics focuses not on the study of large volumes of study material, but on the in-depth study of mathematical concepts introduced.

The learning process begins with specific practical experiences and moves towards abstract concepts. The study of concepts is carried out in three stages.

In the first stage (enactive stage), students play a variety of activity games related to the concept being introduced, hold different material objects related to the concept with their hands, or make different models from them.

In the second stage (iconic stage), the new concept is described in pictures, diagrams or drawings.

The third stage (symbolic stage) is the abstract definition of a new concept, mathematical symbols and definitions, that is, the introduction to a mathematical concept begins with a demonstration.

A lot of attention is paid to model drawing. In this way, the condition of the given problem is visualized.

Emphasis is placed on collaborative learning and interaction. In solving problems, students are given the opportunity to express their mathematical concepts and opinions on the issues, discuss them together, and listen to the opinions of others. As a result, students better understand mathematical concepts, learn to use mathematical language correctly, and in some cases realize that there may be more than one solution to a problem.

PISA is the largest international program to assess educational achievement under the auspices of the Organization for Economic Co-operation and Development (OECD).

Mathematics is the study of clearly defined objects and concepts that can be analyzed and modified in a variety of ways, using mathematical reasoning to draw conclusions.

As part of learning math, students will learn that they can teach reliable results using the right thinking and assumptions.

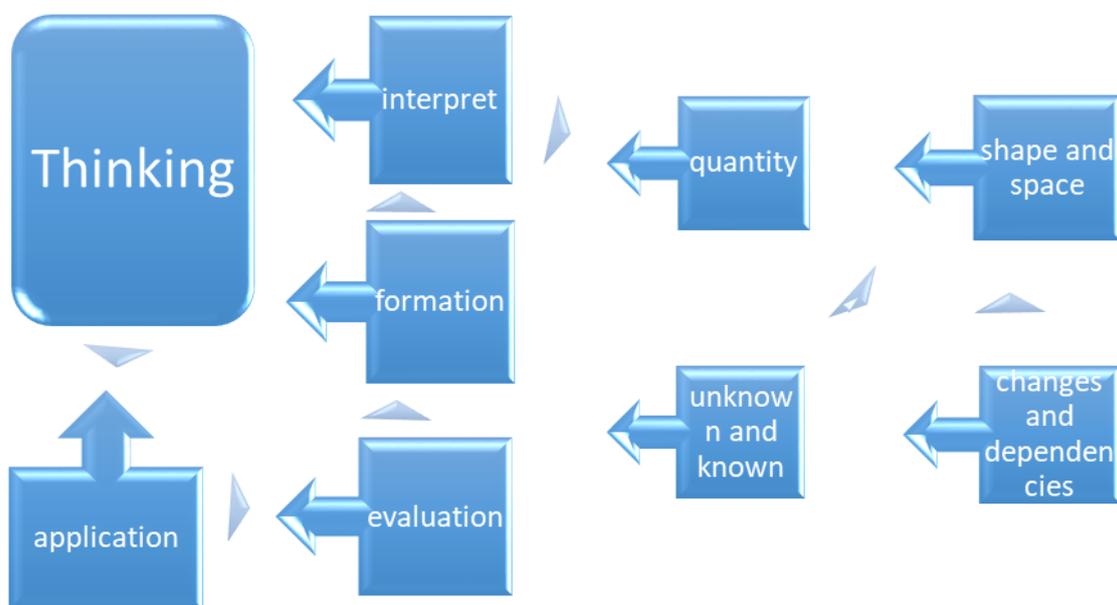
In general, the concept describes the relationship between mathematical thinking and the three processes of the problem-solving cycle (formation, application, interpretation, and evaluation).

The concept of "mathematical literacy" in PISA research

Tasks in a real world context.

Contexts:

- Personal;
- Professional;
- General;
- Scientific.



Under this concept, the content of mathematics is divided into four categories [4]:

- quantity;
- known and unknown;
- changes and dependencies;
- shape and space.

Eight more abilities were added to these categories by the 21st century in the concept of mathematics [4]:

- critical thinking;

- creativity;
- research and study;
- self-development, initiative and perseverance;
- use of information;
- systematic thinking;
- communication;
- reflection.

There are specific features of conducting an international assessment of PISA research, and they include:

- The selected participants will be represented by the students of that country and the results of these selected participants will be obtained;
- The selected participants will be composed of IHTT specialists, which will include about 75 to 150 general secondary education institutions;
- Assignment materials tests, assignments, questionnaires and questionnaires are developed by IHTT specialists;
- The assessment is carried out on computers (during the examination of the educational institution included in the sample, all students aged 15 years 3 months to 16 years 2 months participate in the assessment);
- Tasks performed by research participants will be evaluated by national experts.

Initially, a sociological survey will be conducted in the Republic among students, their parents (legal representatives), as well as heads and teachers of educational institutions. The survey aims to assess the involvement of students in the educational process, the satisfaction of participants in the educational relationship with the quality of education.

Financial literacy has been included in the study since 2015 as an additional area that PISA participants may wish to pursue. Starting in 2021, a new direction for the study of additional creative thinking has been introduced. From 2024, the Secretariat of the Organization for Economic Co-operation and Development

(OECD) is proposing a PISA survey of 15-year-old students on foreign language proficiency.

A distinctive feature of PISA is the assessment of the ability to apply knowledge in practice. This means that the issue of success in PISA is given special attention in the educational process. If you pay more attention to this in the classroom, the results can be higher. But it requires relevant teaching materials, tips for teachers, and more. Since 2015, mathematical competence has been introduced into the education system of the Republic. Mathematical competence is being integrated into mathematics textbooks in secondary schools.

The main goal of PISA research is to help our education system find the most effective ways to develop. The study assesses the current situation, identifying advantages and disadvantages in different areas of work. Here are two key pointers in moving forward. The first is to identify best practices, both at the regional and school levels. The second is an open professional discussion of issues related to the content and methods of teaching.

The main objectives of PISA research are:

- To apply the acquired knowledge and skills of 15-year-old students in solving problems in everyday life and to reveal the mathematical ability to identify trends in the development of this ability;
- Defining strategies for the development of the education system, both in terms of the content and methods of education in general, and the impact of contextual factors (management model, language of instruction, social status of the family, etc.).
- to analyze the real results obtained within the framework of objective measures on the basis of tools that reflect the world priorities in the field of education and draw scientifically based and constructive conclusions for education policy [2].

Research idea: As invented by the researchers, the PISA test is a test that reveals the viability of learning outcomes in relation to time requirements and customer expectations [8].

The challenges we face are as follows: In order for our students to take the tests in the International Assessment System, they must have the knowledge, skills, and competencies to meet these requirements.

Incorporate the results of international research into the content of state educational standards, curricula and textbooks in mathematics, create a national database of PISA tests, create methodological support, ie create additional manuals and literature , our main goal now is to increase the knowledge of teachers in this area, to organize training seminars, to study and apply the experience of countries that have achieved high results.

CONCLUSION

Extensive research on international PISA standards allows us to draw conclusions about the strengths and weaknesses of education in the Republic, to see in what direction it should be developed to increase the competitiveness of education in the Republic. It is important to understand exactly what affects PISA results and what can be changed in the education system to ensure high results. On the other hand, a balance of approaches is important, and we need to preserve and develop the best that exists in the Uzbek educational tradition.

REFERENCES

- [1]. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated August 12, 2018 No 997 "On measures to organize international research in the field of assessing the quality of education in the public education system."
- [2]. Kagazbaeva A.K. Method of constructing test tasks in mathematics in the context of international research PISA. Methodical manual. -Aktobe: red.-izd.otdel branch AO NTsPK «Orleu», 2015-120 p.
- [3]. Parmanov A.A. Improving the teaching of mathematics in general secondary schools through visual problems. Dissertation. Tashkent-2019, 132 p.
- [4]. International study of the quality of education PISA. <http://gimn-1-inta.ucoz.ru/2020/PISA.pdf>

- [5]. Kovaleva G.S., Krasnovsky E.A., Krasnokupitskaya L.P., Krasnyanskaya K.A. International PISA program. Examples of assignments for reading, mathematics and natural science. Center for Education Quality Assessment IOSE RAO. Moscow - 2000, 99 Art.
- [6]. <https://kopilkaurokov.ru/matematika/testi/tiesty-po-matiematikie-dlia-podghotovkie-k-pisa>.
- [7]. International Program for the Assessment of Educational Achievements of Students. [http://www.oecd.org/pisa/PISA International Studies](http://www.oecd.org/pisa/PISA%20International%20Studies)
- [8]. International PISA studies. <https://parussch6.edumsko.ru/activity/pisa>
- [9]. Monitoring the assessment of the quality of education in the PISA school. <https://www.education-medelle.com/articles/monitoring-otcenki-kachestva-obrazovaniya-v-schkole-pisa.html>.
- [10]. International research. <https://www.sledspb.org>.