

## DEVELOPMENT OF STUDENTS' FUNCTIONAL LITERACY WITHIN THE FRAMEWORK OF INTERNATIONAL ASSESSMENT SYSTEMS (PISA, TIMSS).

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**Abstract.** *This article is devoted to the development of students' functional literacy within the framework of international assessment systems (PISA and TIMSS). Functional literacy refers to the development of skills such as problem solving, analysis, and reasoning in accordance with the requirements of modern society. In this article, analytical and statistical methods were used to study the content of PISA and TIMSS assessment systems and their impact on the literacy level of students.*

**Keywords.** *PISA, TIMSS, functional literacy, international assessment, education system, competence, student achievement.*

### INTRODUCTION.

International assessment programs, in particular, PISA (Programme for International Student Assessment) and TIMSS (Trends in International Mathematics and Science Study), are considered as an effective tool for assessing the educational level and competencies of students. These systems measure students' not only their academic knowledge, but also their ability to solve real-life situations. Development of functional literacy, that is, teaching students to apply concrete, mathematical and scientific knowledge in practice, is one of the important tasks of today's education system.

**Literature analysis.** Functional literacy and international assessment systems have been researched by many Uzbek, CIS countries and foreign scientists. Uzbek scientists M. Karimov and A. Usmanov conduct research on the role of international standards in improving students' literacy and emphasize that programs such as PISA and TIMSS are important in introducing international best practices to improve the quality of education. Russian scientists T. Melikhova and Y. Ivanov from the CIS, based on the results of PISA and TIMSS, conducted research on improving functional literacy in mathematics and science in Russia. They suggest adapting the approaches of assessment systems to the local educational system. Foreign scientists D. Johnson and A. Fraser, conducting research on the comparative analysis of

international assessment systems, note that PISA and TIMSS are considered the main indicators for measuring not only the level of knowledge of students, but also their critical and analytical thinking skills.

**Methodology.** This article focuses on the analysis of PISA and TIMSS assessment systems and their impact on improving students' functional literacy. The following steps were used in the methodology:

The content and indicators of international evaluation systems were studied through literature analysis.

PISA and TIMSS results and their relationship with students' functional literacy were checked using statistical analysis.

**Results were presented through tables and diagrams.**

Discussion and analysis. The tasks and methods of international assessment systems aimed at developing students' functional literacy are listed below.

The PISA system is conducted every three years among 15-year-old students and is aimed at assessing their level of literacy (mathematics, natural sciences, reading literacy). Within the framework of this program, the ability of students to apply knowledge acquisition skills in real-life conditions, for example, critical analysis, and the ability to express opinions based on evidence, is evaluated.

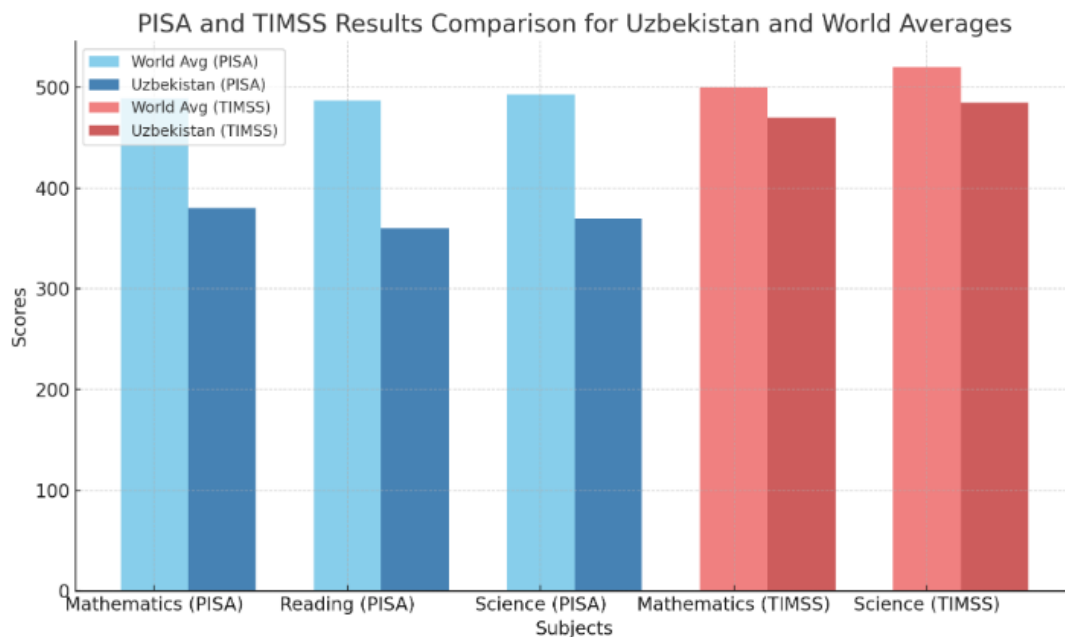
The TIMSS assessment system is administered to primary and secondary school students (4th and 8th grade) and measures their level of knowledge in mathematics and science. The main purpose of TIMSS is to assess how well students have mastered foundational knowledge, that is, knowledge acquired during elementary and secondary school.

**Analyzes and results.** Through tables and diagrams, we show the results of PISA and TIMSS, as well as the status of Uzbek students in international rankings.

**Analysis of PISA and TIMSS Results**

System	Assessment area	Average score by country (2018)	Ball of Uzbek students	The world is average
PISA	Mathematics	460	380	489
PISA	Reading	450	360	487
TIMSS	Mathematics	520	470	500
TIMSS	Natural sciences	540	485	520

It can be seen from the above table that Uzbekistan is below the average results in PISA and TIMSS ratings. This highlights the need for increased capacity to ensure that students are strong in terms of application of knowledge and functional literacy.



This chart compares PISA and TIMSS results with Uzbekistan and world averages. It can be seen in the diagram that Uzbek students recorded lower PISA results than the world average. In TIMSS results, Uzbek students have closer to the average results in mathematics and science, but are still slightly lower compared to the world average.

This diagram shows the need to prepare for international assessment programs in improving the functional literacy of students and helps to determine the directions of development in the education system. With the help of this diagram, it is possible to determine the differences in the results of students and the level of functional literacy across countries. .

**Conclusions and recommendations.** The results of PISA and TIMSS clearly show the level of development of students' literacy and serve the development of the educational system. In order for Uzbekistan to show high results in international assessment programs, the following recommendations are given:

- 1.Improving the quality of education: in order to show high results in international assessment systems such as PISA and TIMSS, it is necessary to align educational programs with international standards.
2. Development of practical knowledge: Paying more attention to activities that develop practical and critical thinking in order to improve students' functional literacy.
3. Training of teachers: organization of training for teachers on international educational methodologies and assessment methods.

4. Introduction of the national evaluation system: creating the necessary conditions for raising the position in international ratings by creating a national evaluation system in Uzbekistan.

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