ABOUT THE RESULTS OF THE PRELIMINARY TEST CONDUCTED IN THE REPUBLIC OF UZBEKISTAN IN ORDER TO PREPARE FOR INTERNATIONAL STUDIES ON THE ASSESSMENT OF THE QUALITY OF EDUCATION

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Abstract*. This article presents analytical information about the results of national studies conducted in the Republic of Uzbekistan in 2019 within the framework of the requirements of the PISA international program. This national study used open-ended questions from the PISA 2006, PISA 2012 and PISA 2015 international studies.*

Keywords*: Organization of Economic Cooperation and Development (OECD), PISA Research, Power of the wind, Heigh, Acid rain, Clothes, Major surgery, Mathematical literacy, Science literacy.*

General information. In accordance with the decision of the Cabinet of Ministers of the Republic of Uzbekistan “On measures to organize international research in the field of assessing the quality of education in the public education system”, dated December 8, 2018 N. 997, the tasks of participation in international research to assess the quality of education in the public education system are determined. This decision also provides for the organization of international research in the field of assessing the quality of education in the public education system, the establishment of international relations, comprehensive support and encouragement of research and innovation activities of students and youth. above all, creative ideas and creativity of the younger generation.

Based on this decision to participate in the “PISA International Program for Assessing Student Literacy” and the “PIRLS International Program for Assessing Reading Literacy for 4th Grade Students” with the State Inspectorate for Quality Control of Education, the Organization for Economic Cooperation and Development. (OECD) and Educational Achievement, according to agreement documents signed between the International Assessment Association (IEA), 4th grade students from educational institutions will take part in PIRLS in 2021 and 15-year-old students in 2022, respectively, in PISA studies. .

It should be noted that the “Concept for the development of the public education system of the Republic of Uzbekistan until 2030”, approved by the Presidential Decree of the Republic of Uzbekistan, dated April 29, 2019 N. on joining the ranks of countries, which is defined as an urgent task.

PISA (Programme for International Student Assessment) is a program aimed at assessing the educational achievements of students, the basis of its research is the following question: “Students aged 15-16, who have completed compulsory education are able to fully function in a modern society”, that is, to solve a wide range of problems relating to various aspects of social life, does he have the knowledge and skills necessary to communicate and enter into public relations?

This program is implemented by the Organization for Economic Co-operation and Development (OECD). The research was started in 2000 and carried out every three years.

For the first time in the history of the Republic of Uzbekistan, the participation in international research means that an important step has been taken in introducing modern approaches and a new look at the education system, its quality and efficiency. Therefore, since it differs from the national system, it is necessary to prepare for these classes and thereby improve the quality of education of all interested ministries and departments, staff of educational institutions, as well as acquire sufficient knowledge and skills from students.

Despite the fact that the main studies will be carried out in 2022, initial pilot tests were carried out in educational institutions of the Republic, on April 8-18, 2019, together with the State Inspectorate for Quality Control of Education and the National Center for Education, as well as regional departments of the Ministry of Public Education.

The purpose of these tests was to study the level of preparation for international research programs, to develop the skills of students of general education institutions to participate in international scientific tests, to analyze their current situation, to gain experience in conducting fundamental research, as well as in connection with the work that needs to be done for successful participation in programs PISA and PIRLS, consists of preparing proposals.

School choice

In 200 districts (cities) in 14 regions of the Republic, there are 9,691 secondary schools (of which 862 are Russian-speaking) and 5,821,861 students study in them (Source: uzedu.uz, 2019). Ensuring the simultaneous participation of millions of students in thousands of schools in scientific research requires enormous financial and human resources.

Taking these factors into account, special attention was paid to covering representative districts (cities) and schools of all regions of the republic. In this regard, 4873 9th grade students from 191 schools located in 187 districts (cities) were included in the preliminary testing. Of these, 577 participants from 22 schools are students of Russian-language schools (Fig. 1).

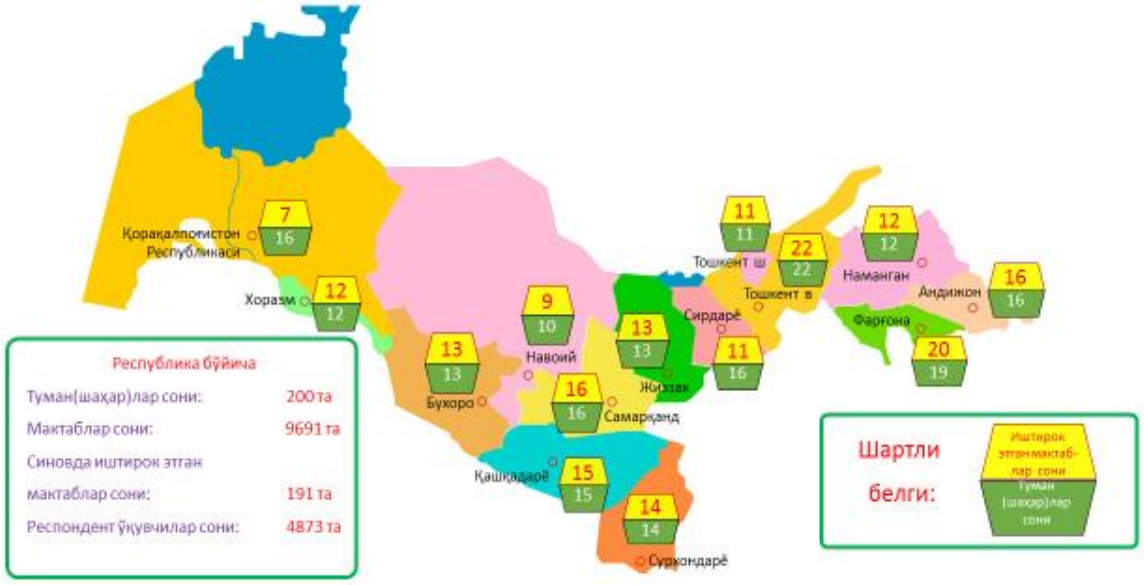


Figure 1. Schools involved in the lawsuit

Test materials. For initial experiments using materials obtained from open sources of the international PISA study, notebooks with 7 variants of tasks were prepared. 4 Mathematical literacy and

A group of 5 tasks has been introduced aimed at assessing literacy in 1 natural science. Among them, task group 1-4 is aimed at assessing mathematical literacy, and task group 5 is aimed at assessing literacy in natural sciences.

The notebooks for all 7 options contain 35 groups of exercises and a total of 89 questions. This is in the area of mathematical literacy

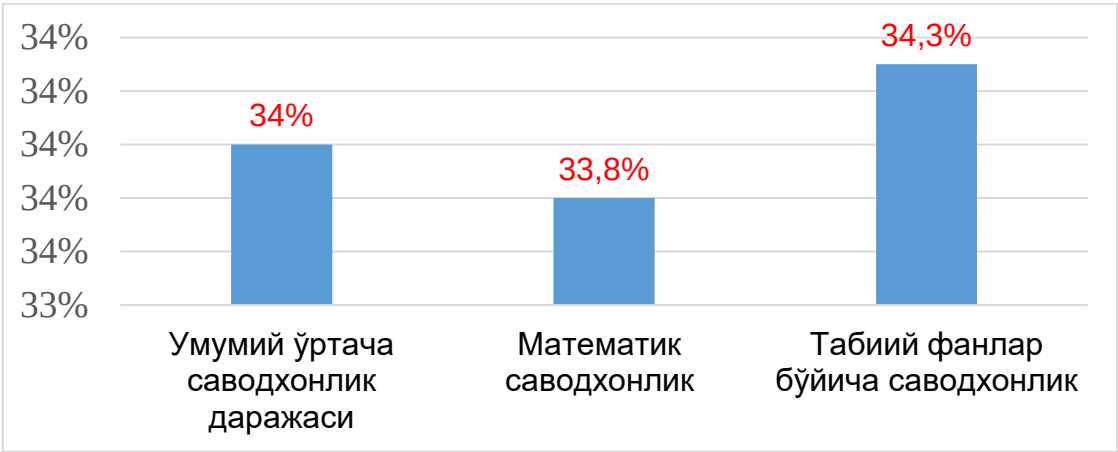
The Science Literacy course has 28 sets of 67 questions and 7 sets of 22 questions.

Criteria for evaluation. The assessment criteria, which are fundamentally different from the national assessment system, were developed jointly with subject experts who have undergone special training in the field of international studies, based on suggestions from international experts, taking into account the basic principles of international studies. Each task in the notebooks consists of 1 to 4 questions, depending on the level of difficulty, and these questions are scored from 0 to 2 points respectively. That is, 2 points for complete answers to questions of a high level of difficulty, 1 point for partial answers and 0 points for no answer at all or incorrect answers. Similarly, for questions of moderate and less difficulty, 1 point is given for complete answers, 0 points for partial or incorrect answers, and 0 points for failure to answer at all.

Although the number of tasks presented in the workbooks is the same, i.e. five, the tasks contain questions of varying difficulty to ensure variety of options. Therefore, the maximum score that students can receive when completing all tasks is different depending on the notebook number (option). For example, the maximum possible score for mathematical literacy is 12 points for notebooks 1 and 7, 11 points for notebooks 2, 4, 6, 14 points for notebooks 3, 5, and literacy in natural sciences is 3 points. for notebooks 1, 3, 4, 4 points, for notebooks 2, 7, 5 points for notebook 5, 2 points for notebook 6. The questions in the task group consist of structured and unstructured answer options. That is, it consists of choosing several options and expressing an opinion in writing.

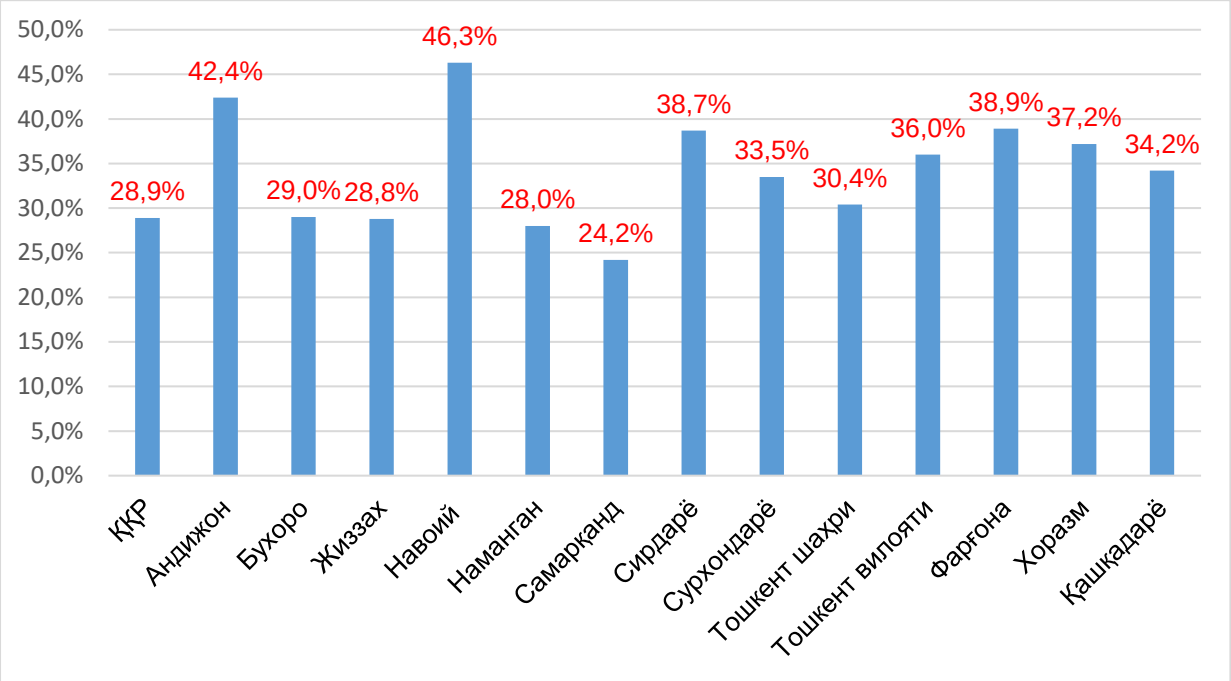
Analysis of results. Due to the the possibility of obtaining the maximum score was different, the results of the respondents were compared not according to the points they got, but the percentage of the points they got in relation to the maximum points they could get, that is, according to the percentage indicator. While analyzing the results, the total average literacy level of the respondents covered by the republic was 34% (mathematical literacy level 33.8%, natural science literacy level 34.3%) (diagram 1).

Diagram 1. Overall average of respondents Literacy Rate



While analyzing the results by region, relatively high rates were observed in the Navoi and Andijan regions, and the lowest rates were observed in the republics of Samarkand, Jizzakh and Karakalpakstan (Diagram 2).

Diagram 2. Total average literacy level of respondents by region



Analysis of respondents' results by area

While analyzing the literacy level of respondents by area, the following results were noted:

1. Those with a result of 86 - 100%: 26 people (0.5%) in the field of mathematical literacy;277 people (5.7%) in the area of science literacy.

2. Those with a result of 71 – 85%: 223 people (4.6%) in the field of mathematical literacy; 80 people (1.6%) in the area of science literacy.

3. Those with a result of 56 – 70%: 512 people (10.5%) in the field of mathematical literacy; 742 people (15.2%) in the area of science literacy.

4. Those with a score of 0-55%: 4112 people (84.4%) in the field of mathematical literacy;3,774 people (77.4%) in the area of science literacy.

Figure 3. Level of literacy of respondents in the field of mathematics and natural sciences

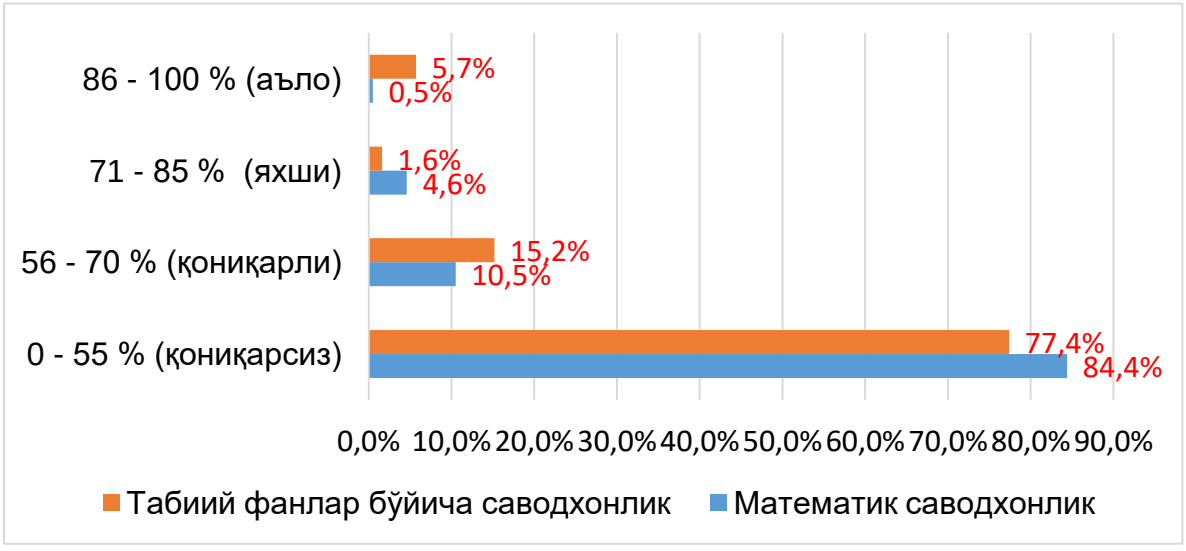
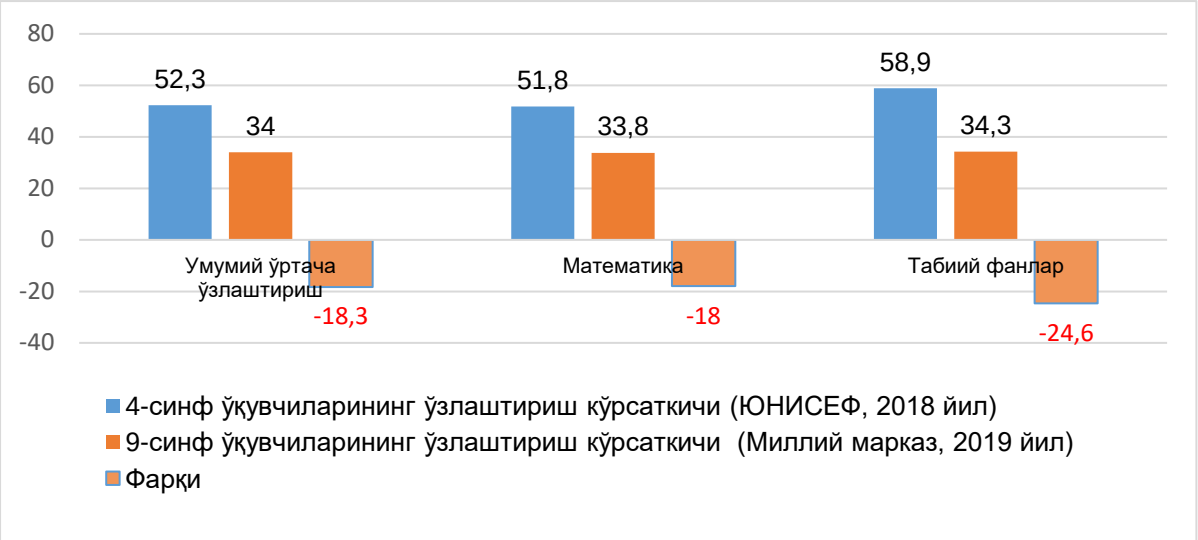


Diagram 4. Comparative analysis of domestic studies conducted among students in grades 4 and 9 (in percentage)



According to the results of a study conducted by UNICEF and the Ministry of Public Education among fourth-graders in 2018 and ninth-graders by the National Center in 2019, it is clear that the academic performance of ninth-graders is significantly lower than that of fourth-graders. This means that as fourth graders move into higher grades, their mastery level decreases.

Respondents' thoughts after testing

After conducting preliminary pilot tests in preparation for international training, testers were interested in the opinions of some respondents regarding the test questions, with many respondents emphasizing the following points:

-excellent test, some tasks were a little unclear, perhaps I did not carefully read the conditions of the task;

-I liked the test, there were a lot of graphic problems, solving some problems required deep thinking;

-completing the tasks was not difficult, logical thinking is enough to solve them, the problem situations presented are not in textbooks, but will be useful in life;

-it was a little difficult, but it was interesting, I gained new knowledge, it would be good if such tasks were also completed in class;

-the tests do not seem too difficult, but make you think;

-tests required logical thinking;

-the questions are constructed in a new form, there are some difficulties, but I tried.

From the opinions of the respondents, it is clear that for some of them the questions are not only difficult, but also full of interesting facts, and the use of such tasks is considered appropriate during lessons.

Discussion. A general analysis of some of the low-performing questions on the Mathematical Literacy Test.

If a particular attention is paid to the analysis of the results in the question section of the test notebooks, then 678 out of 698 students (97.1%) were unable to answer the question in the “Wind Energy” task, which showed the lowest result in the area of mathematical literacy in the diagnostic process. The problem solving process is not fully described by most students.

The purpose of this question is to learn how to use the multi-step calculation method to solve problems involving motion situations. In addition, the problem required finding the maximum speed required to rotate the tips of the blades installed in wind power plants and expressing it in km/h. Although some respondents performed the calculations correctly, errors were made when converting from one measurement unit to another.

From 706 respondents to the task question “Height”:

-656 (92.9%) were unable to answer at all. This question asks you to confirm whether given statements are true or false. To answer this question, we can say that students do not have strong reasoning skills. Students did not fully understand the terms of the question or did not read it carefully;

-556 out of 681 respondents (81.6%) were unable to answer correctly at all or most of them answered incorrectly on the Acid Rain Science Literacy activity question. This task was aimed at assessing the respondents' ability to explain the phenomena from a scientific point of view, which asked where the oxides of nitrogen and sulfur that cause acid rain come into the air. It can be noted that the theoretical knowledge of the respondents is insufficient, at the same time their written language is not well developed, they cannot clearly and concisely express their thoughts;

-587 (86.2%) respondents were unable to answer one more question on the task correctly. The content of the task is that students conducting the experiment place pieces of marble overnight in acetic acid and distilled water. They discovered that under the influence of acetic acid, a piece of marble was eroded and its mass decreased. Respondents were asked to explain why they placed a piece of marble in clean water. Based on this, we can say that the respondents have insufficiently developed skills in scientific research of problems;

-660 out of 706 respondents (93.5%) were unable to correctly answer the question in the “Surgical Practice” task. This task aims to assess respondents' competence in the scientific interpretation of data and evidence. Students were asked to analyze and interpret the data based on the given graph and based on this determine whether the conclusions related to human organ transplantation are true or false. The difficulty of the task is related to its format, that is, respondents have to work with both graphs and tables;

-614 out of 663 (92.2%) respondents could not answer the question “Clothing” correctly. This assignment aims to assess students' competence in planning and evaluating scientific research. Respondents were asked to carefully read and understand the text given in the task and determine which aspects of electrical textile fabric mentioned in the text could be scientifically investigated through laboratory experiments. It can be seen that the respondents’ skills in reading and understanding instructions for laboratory activities are not sufficiently developed.

Discussions about the state educational standard. While studying the “State educational standard of general secondary education”, approved in accordance with the resolution of the Cabinet of Ministers of the Republic of Uzbekistan “On approval of state educational standards of general secondary and secondary special, vocational education” dated April 6, 2017, but there are no special requirements for grades 10-11. Besides that, the state educational standard reflects the necessary requirements for the ability of students to use their existing knowledge, skills and abilities in everyday activities, that is, the formation of their competencies. In comparison, the international PISA study is also designed to assess the ability of students completing compulsory education to apply knowledge and skills acquired in school to real-life situations. In addition, according to international experts who collaborated with the National Center, state educational

standards are well structured in content, but since most of the rules are of a general nature, it was emphasized that clarifications are necessary. In general, there is a connection between the State Educational Standard and the PISA research requirements, both of which are based on a competency-based approach. There are also competencies in scientific explanation of events, design and evaluation of scientific research, scientific interpretation of data and evidence, and these competencies are not reflected in state educational standards.

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