ANALYSIS OF INTERNATIONAL ASSESSMENT STUDIES (ACROSS YEARS, READING, MATHEMATICAL AND SCIENTIFIC LITERACY BASED ON CREATIVE THINKING)

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ANNOTATION: The article discusses the educational significance of using international assessment studies in the biological education system, the purpose of introducing PISA research tasks in biology in general schools in order to find information in the areas of natural and scientific literacy, mathematical literacy, and reading literacy, and its role in the education system. An analysis of international assessment programs by year is presented. Also, opinions are expressed on the development of students' knowledge in accordance with PISA tasks. Here, the study of the PISA program is important.

KEY WORDS: Natural and scientific literacy, mathematical literacy, PISA tasks, cognitive levels, reading literacy, text types, consortium, school, assessment, demand, organization, main results, level, questionnaire.

INTRODUCTION

The rapidly developing era in the context of globalization poses modern requirements to the state and society, the relevance and scope of which are increasing day by day. In order to achieve global strategic goals, conquer new heights, and take a place among developed countries, the country needs highly qualified, experienced, and modern-thinking highly capable personnel and specialists. At the heart of meeting the need for such competitive personnel are the grandiose tasks of discovering human capital, in simple terms, a person and his potential, and mobilizing him to achieve great goals. It began its work in 1961. The Organization for Economic Cooperation and Development (OECD) has been conducting research to find solutions to various problems that have arisen in the financial sector over the past period. Especially at the beginning of the new century, this organization developed PISA (The Programme for International Student Assessment) - an international program for assessing the literacy of students - in order to develop general secondary education, which is the main link in world education. The reason why the economic organization turned to the field of education is that personnel for any field grow up in schools, in ordinary classrooms. In this sense, even a huge structure like the OECD was forced to compile a rating of how much money countries spend on their education systems and how effective they are.

Later, other countries also became interested in this research and began to participate in it. In accordance with the decree of the President of the Republic of Uzbekistan, the tasks of establishing priority areas for the systematic reform of general secondary and extracurricular education, raising the spiritual, moral and intellectual development of the younger generation to a qualitatively new level, introducing innovative forms and methods of education into the educational process, achieving the Republic of Uzbekistan's inclusion in the top 30 advanced countries in the world in the PISA international program by 2030, and creating a national system for assessing the quality of education in the public education system based on international research in the field of assessing the quality of education, were set. The concept envisages the introduction of general education programs and new state educational standards that meet the requirements of a modern innovative economy, with special emphasis on the development of students' critical thinking, independent information search, and analytical competencies and skills, as well as continuous participation in international programs such as PISA, TIMSS, PIRLS, and other programs to assess the level of students' knowledge and the quality of education.

Also, in order to organize international research in the field of assessing the quality of education in this system, establish international relations, comprehensively support and encourage the scientific, research and innovative activities of students, and, above all, the creative ideas and creativity of the younger

generation, in accordance with the government resolution. The organization of international assessment programs (The Teaching and Learning International Survey-TALIS) was initiated to study the teaching and learning environment of management and pedagogical personnel in general secondary educational institutions and the working conditions of teachers. To this end, the National Center for International Studies on the Assessment of the Quality of Education (hereinafter referred to as the National Center) was established under the State Inspectorate for Supervision of Education Quality under the Cabinet of Ministers of the Republic of Uzbekistan. The National Center was tasked with a number of tasks, including the formation of a national database of questions in the areas of international research assessment programs, the creation of additional methodological guides and literature on international research, and the involvement of talented pedagogical personnel in scientific research on international assessment programs, based on a government resolution. This guide It is based on data from the PISA program on science literacy, and provides examples of open-ended tasks prepared and published for studies conducted in 2000-2015. It is recommended that this information be used in extracurricular activities in general education institutions to improve students' science literacy, develop their creative, logical, critical thinking and life problem-solving skills through completing the tasks, identify gaps in students' knowledge in this area, and also in preparation for the PISA study to be conducted in 2021. In addition, this guide can be used to conduct scientific research on the development of students' science literacy, create additional teaching and methodological guides and literature. Each PISA task includes one or more questions. The questions will be multiple-choice or written questions.

Depending on the level of complexity of the PISA 2000 and PISA 2006 tasks, some answers to questions are rated 1 point, while others are rated 2 points. The assessment criteria include the scoring of the answers, the answer to each question, which competence of the student is assessed by this question, and methodological recommendations for completing the task. It should be noted that the uniqueness of the PISA program is that it does not repeat the curricula of any participating country, therefore it is difficult to link PISA tasks to exactly one grade and one topic: one question of one task may relate to a topic of a certain grade, while the second question may relate to a topic of another grade, or in many cases, may be integrated. Based on this, teachers are recommended to link each question of the PISA tasks to the appropriate topic. This guide is a valuable resource for teachers interested in exploring the open-ended PISA questions and developing similar or complementary tasks. It is important to note that PISA questions are designed by experienced international experts, and designing similar questions requires systematic and specialized knowledge. Reading literacy is a foundation for academic success, and PIRLS is a valuable tool for examining the impact of new or revised strategies on learning.

The PIRLS assessment program is based on a comprehensive system that includes the main learning goals - gaining experience in artistic reading, acquiring and using information, and searching for information on the Internet. On April 5-14, 2021, the first international study was conducted in our country to assess the level of reading comprehension of 4th grade students. The study involved 5,948 4th grade students studying in 180 schools in our republic, as well as their parents, school principals, and class teachers. On May 16, 2023, the TIMSS and PIRLS International Research Center at Boston College and the IEA will publicly announce the results of the 2021 PIRLS international report. This latest PIRLS cycle was the only large-scale international survey to collect data during the COVID-19 school closures and school closures.

In accordance with the conceptual rules of the survey, reading skills in reading fiction and informational texts are assessed in four groups: - finding information presented in a clear form; - drawing conclusions; - interpreting and summarizing information; - analyzing and evaluating the content, language features, and structure of the text. The data obtained as a result of the systematic use of research materials in 4th grade reading and literacy lessons show that 38 percent of fourth graders can not only read information from a text, but also answer questions of a very complex level that require serious mental processing of this information. They can easily read texts of 800-1000 words, understand their content, and interpret it.The results of using the PIRLS international assessment exercises in literacy classes show that the readiness of

4th grade primary school students to read texts and use these texts to expand their personal experience and knowledge is relatively low.

When analyzing the stage of completing individual tasks of the international test, some difficulties were identified that students encountered. In particular, the analysis of the results showed that the lack of a habit of referring to the text when it is necessary to clarify any information leads to two typical problems: firstly, students do not distinguish well between the information given in the text and the information that they possess based on their own experience (about 37%), and secondly, they are limited to an approximate, vague assimilation of information from the text (about 26%). It is very important to teach children to constantly refer to the text when answering questions, to pay attention to how the tasks are formulated, since the tasks are almost always given in the form "Based on the text.", "Based on the text.", "What is said in the text." If the question requires a detailed answer, students (up to 65%) experience difficulties associated with the process of expressing thoughts in writing. We can often see that students who understand the text well have difficulty expressing their thoughts. They have difficulty formulating an answer to the question posed in the assignment, for example: "The little girl is an important character in this story. Explain why her role in all the events is so important", "Why did the farmer's friend take the eagle to the mountains to force it to fly? Give two reasons", "Explain why it is important to alternate layers of soil and sand in a glass jar", "Explain why it is important to put potato and onion pieces in the top layer of soil in an experiment on earthworms". Answering the question posed is difficult for students. "Which of these three experiments did you find most interesting? Use the text to explain your answer," "Look at the picture in the section of the text devoted to studying wood lice. How does this picture help you understand what you need to do to conduct the experiment?" One of the reasons why children have difficulty writing their answers in detail can be explained as follows: children have difficulty maintaining a balance between the accuracy of the answer and the formulation of the answer according to the rules of spelling, and it is important to remember that spelling errors are not taken into account when evaluating answers. Students also have difficulty completing tasks that require a multi-part answer, including "questions within a question," such as "The lump of clay had different feelings at the beginning and end of the story. Describe them. Explain why her feelings changed," "You learned about Anya's character from her actions. Write one characteristic of Anya's character. Write two examples of what she did to justify your answer." Children do not complete all parts of the task, but only answer part of the questions asked in the task. Another problem is associated with some formality in the answers: sometimes children simply copy the question, sometimes in tasks where two examples are required, they copy the first example into the second line as well, which wastes time and, of course, does not give points for a repeated answer.

Another problem noted in the analysis of the results is the difference in the results of boys and girls (the average scores of girls are higher than the average scores of boys). At the same time, this gap has increased among relatively small classes, compared to 4th grade students. The results obtained indicate the need for special efforts to develop boys' interest in reading, teach them different reading strategies, etc. When analyzing the results, we were interested not only in the average score, but also in the level of comprehension of the read text achieved by the weakest and strongest students (from those described above). The five percent of the weakest students (the 5th percentile) scored an average of 355 or lower (which is considered low), while the five percent of the strongest students (the 95th percentile) scored an average of 522 or higher (which is considered high). It is worth noting that the highest scores in 2016 were achieved by the best students in Northern Ireland (673 points), England (678 points) and Singapore (687 points). This suggests that primary teachers need to continue to challenge their more advanced students to develop their reading literacy skills. In this regard, the "STesting" electronic innovative platform, which includes an electronic system and video products aimed at developing skills in working with tasks within the framework of international assessment programs (PISA, TIMSS, PIRLS), developed by the A. Avloni National Research Institute, serves as a great resource for teachers. Considering international studies on the quality of education assessment and summing up the results, it is worth noting that the requirements for the results achieved by schoolchildren in the world, the rich analytical materials of curricula and textbooks help

to popularize international standards of the quality of pedagogical assessment, and to form a culture of monitoring research. It is advisable that most of the specific monitoring of the quality of education conducted by education quality assessment centers in our country use common conceptual approaches and individual elements of international research tools. After all, Uzbekistan's participation in international comparative studies on the quality of education assessment is of great importance in creating a national system for assessing the quality of education in our country.

The results of PISA, in which Uzbek students participated for the first time, have been announced. In 2022, Uzbek schools participated for the first time in the international program for assessing the knowledge of 15-year-old students - PISA exams. According to the test results, Uzbek children ranked 72nd out of 81 countries in mathematics and 80th in science and reading literacy. The 2022 PISA test results have been announced. Last year, 690,000 15-year-old students from 81 countries took part in the test. They reflect the average knowledge of 26 million students in their countries.

The Programme for International Student Assessment (PISA) international student assessment tests are conducted every 3 years at the initiative of the Organization for Economic Cooperation and Development (OECD).

PISA tests collect data from education systems, schools, teachers and students using internationally recognized measurements to assess student knowledge. These tests have been conducted since 2000. The 2022 exam is the eighth in terms of numeracy. The tests test students' skills and knowledge in mathematics, science and reading. Students are selected in 2 stages. In the first stage, 150 schools are selected from a mix of rural and urban areas. Then 42 students are randomly selected from each school. The test results are divided into 3 groups: above average, average and low. The highest result is in Singapore

According to the results, in mathematics, Uzbek students ranked 72nd out of 81 countries with a score of 364. The highest scores in mathematical literacy were:

1. Singapore – 575 points (up 6 points from 2018)
2. Macau (China) – 552 points (down 6 points)
3. Chinese Taipei – 547 points (up 16 points)
4. Hong Kong – 540 points (down 11 points)
5. Japan – 536 points (up 9 points)
6. The lowest scores in the same category were:
7. Guatemala – 344 points (up 10 points)
8. El Salvador – 343 points (did not participate)
9. Dominican Republic – 339 points (up 14 points)
10. Paraguay – 338 points (up 11 points)
11. Cambodia – 336 points (up 12 points).

In the 2nd area of reading literacy, Uzbek students ranked 80th with 336 points. The lowest results similar to Uzbekistan were shown by students from Kosovo, Jordan, Morocco and Cambodia.

Singapore also showed the highest result in reading literacy with 543 points. It was followed by Jordan, Japan, Korea and Chinese Taipei.

In the 3rd area of natural science literacy, Uzbekistan ranked 80th with 355 points. In this area, Singapore ranked first with 561 points, followed by Japan, Macau (China), Chinese Taipei and Korea. The 5 countries with the worst results were the Dominican Republic with 360 points, followed by Kosovo, the Philippines, Uzbekistan and Cambodia in last place. Overall scores decline

Overall, the 2022 PISA test results show that students' average knowledge has fallen behind in all three areas. 25 percent of students in OECD countries performed poorly in math, reading, and science literacy. The rate is even worse in non-OECD countries. 60 percent of students in 18 of these countries scored extremely poorly in all three subjects.

The overall results show that the average scores for 2022 were 472 in math, 476 in reading, and 485 in science.

Uzbek students' results

Math, science, and reading literacy were measured in 6 levels. In all three areas, not a single Uzbek student achieved a level 5 or 6 result:Matematik savodxonlik bo‘yicha:

14.4 percent of students - level 2

4.2 percent of students - level 3

0.7 percent of students - level 4

In reading literacy:

12.2 percent of students - level 2

1.8 percent of students - level 3

0.1 percent of students - level 4

In science literacy:

16.5 percent of students - level 2

2.2 percent of students - level 3

0.1 percent of students - level 4

Most schools are centralized

After the results were announced, public activists expressed their opinions about the results of Uzbekistan.

REFERECES:

[1] O‘zbekiston Respublikasi Xalq ta’limi tizimini 2030-yilgacha rivojlantirish konsepsiyasini tasdiqlash to‘g‘risida.

[2] A.B.Radjiev, A.A.Ismailov, J.R.Narziyev, X.P.Ahmedov, G.O.Tog‘aeva.va bosh O‘quvchilar savodxonligini baholash bo‘yicha xalqaro tadqiqotlar dasturi, qo‘llanma, Toshkent, 2019 yil, 62 bet.

[3] Normamatovych, D. M. (2023). The significance of the tasks of the pisa international program in the teaching of biological sciences. American Journal of Interdisciplinary Research and Development, 23, 132-138.7.

[4] Raxmatov.U.E., Azimov I.T., Tog’aeva G.O. Biologiyadan PISA topshiriqlarini uzluksiz ta’lim jarayoniga tadbiq etish metodikasi. Uzluksiz ta’lim. Ilmiy – uslubiy jurnal. T., 2020. – № 4–son. – V.17–21.

[5] Doniyorov, M. (2023). “Biologiya darslarida pisa topshiriqlaridan foydalanish”. Biologiyaning Zamonaviy Tendensiyalari: Muammolar va Yechimlar,1(5),789–791.Retrievedfrom https://inashr.uz/index.php/bztmy/ article/view/4679.

[6] Normamatovich, D. M. (2024). Methodology Of Conducting And Organizing The Pisa Research. American Journal of Advanced Scientific Research, 1(3), 11-13.

[7] Ergashevich, R. U. (2024, January). Methodological principles of professional competence development of the future biology teacher. In International Scientific and Current Research Conferences (pp. 1-5).

[8] S.Jumayev. (2022). Pedagogical foundations of the development of educational and creative activities in the teaching of molecular biology in the continuing education system. https://doi.org/10.5281/zenodo.7309412

[9] Zayniyev, S. “Fan olimpiadalarining tashkil etish mazmuni, tahlili va ta’lim-tarbiyadagi o‘rni.” Science and innovation 1.B8 (2022): 229-234.

[10] Omonkulov, U. (2024). Iqtidorli o‘quvchilar bilan ishlash metodikasi. Ijtimoiy-gumanitar fanlarning dolzarb muammolari/Aktualnыe problemы sotsialno-gumanitarnыx nauk/Actual Problems of Humanities and Social Sciences., 4(2).

[11] Doniyorov, M. N. (2024). Biologiyani o‘qitishda xalqaro baholash tadqiqotlari va uning o’ziga xos xususiyatlari. Inter education & global study, (5), 341-350.

[12] Doniyorov, M. (2024). PISA, PIRLS, TIMSS Xalqaro baholash tadqiqotlari va uni o ‘ziga xos tomonlari. News of the NUUz, 1(1.10. 1), 80-82.

[13] Doniyorov, M. (2024). Biologiyadan amaliy mashg ‘ulotlarni tashkil etishda pisa topshiriqlaridan foydalanish metodikasini takomillashtirish. News of the NUUz, 1(1.6), 65-67.