

USING RISA TESTS IN CHEMISTRY EDUCATION

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Annotation: Introduction: PISA (Program for International Student Assessment) is a program that assesses the literacy (reading, mathematics, natural sciences) and practical application of knowledge of 15-year-old students in various countries.

MATERIALS AND METHODS: This program is conducted once every 3 years. It was originally developed in 1997 and first used in 2000. An increase in the score on the PISA by 50 points ensures an annual increase in Gross Domestic Product (GDP) by 1%. In the process of monitoring the quality of education in the 2019-2020 academic year, educational objectives based on a comprehensive approach to chemistry were developed using international assessment programs.

Key Words: educational process, teacher, skill, lesson, advanced pedagogical technologies, application skills, creative activity, knowledge.



Tasks from the perspective of preparing for international assessment programs

- Effective use of modern editorial technologies, interactive methods in teaching reading (native language), mathematics and natural sciences (physics, chemistry, biology, geography)
- Strengthening interdisciplinary integration in the process of teaching natural sciences (physics, chemistry, biology, geography), linking science to various fields and life processes teaching

- More effective organization of practical training (laboratory, problem solving) in physics, chemistry and biology
- Conducting training in extracurricular clubs on topics aimed at developing students' cognitive and creative abilities

Currently, views on what level of preparation school graduates should have are changing. Along with the formation of knowledge and skills in subjects, it is necessary to ensure the development of students' ability to apply their knowledge in various life situations.

In the future, these skills will help the graduate to actively participate in society and improve his knowledge throughout his life.

The Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 997 dated December 8, 2018 "On measures to organize international research in the field of assessing the quality of education in the public education system" includes the following: PIRLS (assessment of the level of reading and comprehension of text by 4th grade primary school students), TIMSS (assessment of the level of mastery of mathematics and natural sciences by 4th and 8th grade students), RISA (assessment of the level of assessment of students' literacy levels in reading, mathematics, and science subjects)

It is planned to organize international studies on international assessment programs such as TALIS (Study of the teaching and learning environment of management and editorial staff in general secondary educational institutions, as well as the working conditions of teachers).

This set consists of tasks aimed at developing students' critical analysis, creative thinking, independent research, and creativity skills, as well as increasing their literacy in the natural sciences.

Natural sciences literacy is the ability of a person to have an active civic conscience on issues related to the development of the natural sciences and the use of their achievements.

The knowledge and skills of natural science literacy assessed in the study are formed during the teaching of natural sciences, physics (with elements of astronomy), biology, chemistry, and geography at school.

The main emphasis is on the ability of students to answer the proposed questions using their knowledge of natural sciences and to draw scientifically based conclusions based on the information provided. The life situations presented to students will be related to the pressing problems that arise in the personal life of each person.

Today, RISA tests play an important role in chemistry, like in all subjects. Such tests allow students to develop clear, logical thinking, creativity, and a clear understanding of a process or event.

The 21st century is the century of information technologies. This century requires its specialists to have competencies that distinguish them from those of the past. If in the 20th century and earlier, specialists with a strong memory, encyclopedic knowledge, and a wide knowledge of their field were highly valued, now this knowledge is no longer of decisive importance. Search engines, online encyclopedias, and comprehensive online databases have been created in various fields, so much so that the need to memorize this information has now become secondary.

The ability of a modern specialist to analyze this knowledge, to generate new information from it, and to see, as the saying goes, "the bottom of the bowl" is becoming more important.

RISA tests are conducted to reflect these changes in the education system, to determine the extent to which schoolchildren have the skills to analyze real-life events, draw conclusions from them, and engage in communication, and to determine how well the education system is adapting to these changes.

The RISA tests are conducted in 5 areas: Reading, Mathematical Literacy, Science, Collaborative Problem Solving, and Financial Literacy. Uzbekistan plans to conduct tests in three areas in 2021: Reading, Mathematical Literacy, and Science.

The tests focus on students' knowledge of the most basic concepts in these areas, their mastery of basic knowledge and skills, and their ability to use them in real-life situations! These tests do not test students' knowledge of specific topics learned during the lesson!

Four types of testing methods are used in RISA tests:

1. Single-answer tests;
2. Multiple-choice tests;
3. Short or detailed answer questions;
4. The student's opinion on the solution to a problem (usually the examiner has general answers to such questions, the student's answer is not required to exactly match the test developer's answer, the student's creativity is encouraged).

In addition, it is planned to collect questionnaires from students at the same time as the tests.

Reading literacy: A person's ability to understand and respond to information presented in text form, the ability to use the information they read to achieve their goals, and to increase their knowledge and capabilities in the process of active participation in society.

Here, the concept of reading literacy takes on a broader meaning. The goal of this direction is to help the student understand the text, think about the content, evaluate the content of the text, and use colorful thematic materials such as a biography, letter, document, newspaper and magazine articles, various applications, and geographical maps, including diagrams, pictures, maps, graphs, and tables intended to explain the text. is considered to be a way of identifying competencies such as being able to express one's own opinion about.

Mathematical literacy: Tests whether a person knows the place of mathematics in the world in which he lives, and whether he can correctly and completely justify mathematical processes.

The term literacy is used in this section to indicate that the aim of this section is not to determine the level of mastery of the knowledge usually provided in the school curriculum. The main focus is on using mathematical knowledge in a variety of real-life situations, using different methods of thinking and intuitive decision-making. However, answering these types of questions may require knowledge and skills that are taught in the school curriculum. Tests in this area usually involve mathematical situations that can be encountered in various areas of life (medicine, housing, sports, etc.).

Scientific literacy: The ability to identify problems in real-life situations that can be solved scientifically, and to draw conclusions based on observation and experimentation. These conclusions are based on the main goal of this section: to understand the world around us and the changes that are occurring in it as a result of human activity, and to develop the skills to make the necessary decisions.[19] RISA tests are created by the most powerful experts from countries around the world, with real samples. Each question consists of an average of 500-1000 words, and each text contains 5-8 different types of puzzles.

CONCLUSION. Teaching methods in the modern educational process form an active, conscious and responsible approach of students to acquiring knowledge. Such methods transform students from recipients of ready-made knowledge into active owners of knowledge. The scope of students' thinking expands, their creative approach strengthens, and their speech culture and social activity increase.

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