

School Biological Education With A Focus On World Experience

Topilova Feruza Makhammadovna¹, Kimsanova Gulnora Abdurashidovna²

¹Teacher of the Department of Human Physiology and Life Safety, Andijan State University, Republic of Uzbekistan, Andijan

²Ph.D. in Biological Sciences, Andijan State University, Republic of Uzbekistan, Andijan



Abstract – The international student achievement assessment program (PISA) is an international assessment of skills and knowledge from 15-year-old students, in addition, it provides information on a range of factors that contribute to successful studies, schools, and the education system. PISA is the result of joint efforts of the Organization for economic cooperation and development (OECD) member countries. As PISA is an international assessment, it measures skills that are universally recognized as key outcomes of the educational process. Instead of testing on facts, the assessment focuses on young people at the end of compulsory school education and their ability to use their knowledge and skills to meet real-world challenges.

Keywords – Education, PISA, Literacy, Thinking, Natural Science Knowledge, Creativity, Natural Science Literacy, Competence.

On August 12, 2020, the President of the Republic of Uzbekistan signed a decree "On measures to improve the quality of continuous education and the effectiveness of science in the areas of" chemistry "and" biology ".

The document notes that the quality of teaching in the subjects "chemistry" and "biology" does not meet modern requirements, the teaching methodology and laboratories are morally outdated, mechanisms of decent incentives for teachers' work in general education schools are not introduced, there is no close relationship, effective dialogue and cooperation between institutions secondary specialized, vocational, higher education, research institutions and industrial enterprises of the industry for the training and use of scientific results. [1]

The decree approved the gradual creation in each region of the republic of 14 basic schools specialized in chemistry and biology, equating the specialized boarding school for young biologists and chemists named after Abu Ali ibn Sina with the status of these schools. In addition, 150 specialized schools with in-depth study of chemistry and biology will be gradually created in the regions (cities) of the republic. 55 departments of higher educational institutions will be assigned to basic specialized schools and specialized schools to coordinate effective teaching of the subjects "chemistry" and "biology" in these schools. production enterprises will be assigned to 47 professional educational institutions that train middle-level personnel in specialties corresponding to the areas of "chemistry" and "biology" in order to effectively establish a system of training middle-level personnel for industries.

11 research institutes of the Academy of Sciences and industries will be assigned to 74 departments of higher educational institutions for the effective organization of the educational process in the areas of "chemistry" and "biology" and the development of subjects in higher educational institutions.

The head of state instructed to create special funds without the status of a legal entity under the Council of Ministers of the Republic of Karakalpakstan, khokimiyats of regions and the city of Tashkent for additional financing of activities, equipment, payment of allowances to teachers, as well as financing other activities for teaching the subjects "chemistry" and "biology" in schools, specialized in chemistry and biology. A plan will be developed to assess the knowledge and pedagogical skills of teachers in the subjects "chemistry" and "biology" of specialized schools and to improve the qualifications of selected candidates.

Starting from January 1, 2021, the amount of the established allowance to the base rate of teachers in the subjects "chemistry" and "biology", as well as management personnel (director and deputy director for specialized subjects), admitted to specialized schools and basic specialized schools will be increased by 50 percent ...

The State Testing Center, together with the Ministry of Higher and Secondary Specialized Education, the Ministry of Public Education, the Academy of Sciences and the Uzstandart agency, were instructed to implement a national certification system to assess the level of knowledge in the subjects "chemistry" and "biology" by February 1, 2021. Students of general education schools, academic lyceums and vocational colleges who have received a national certificate of the level that provide an exemption, upon admission to higher educational institutions, are exempted from passing tests in the subjects "chemistry" or "biology" with the award of a maximum score, respectively, in the subjects "chemistry" or "biology". A national competition will be organized for the creation of educational and scientific literature on the subjects "chemistry" and "biology" for educational institutions based on the best foreign experience. Authors, recognized as winners by the results of the national competition, are encouraged by a one-time monetary reward in the amount of 100 million soums at the expense of the fund for supporting innovative development and innovative ideas. Starting from 2021, once every two years, international subject Olympiads in chemistry and biology named after Abu Raikhan Beruni will be organized among students of higher educational institutions.

On November 6 of this year, the Decree of the President of the Republic of Uzbekistan "On measures for the development of education and science in a new period of development of Uzbekistan" was adopted. The decree entrusted the task of studying the experience of advanced countries in the field of school education, in particular, the characteristics of the Finnish educational system. The head of our state cited Finland as an example; this country is characterized by its successes in international studies to assess the quality of education. Finnish schoolchildren scored the best in literacy and educational equity across the board in PISA. [2] Thus, the international student assessment program (PISA - The program for international student assessment) is the most common of the research programs. In 2015, more than 500,000 young people from 72 countries and over 600,000 from 79 countries took part in the PISA survey. A distinctive feature of PISA is that it measures literacy in various fields. Literacy is defined as "the ability of learners to apply knowledge and skills to key topics, the ability to effectively analyze, reason and communicate in identifying, interpreting and solving problems in different situations." The PISA program assesses students' literacy in math, science and reading in repetitive cycles every 3 years.

Modern schools today require the use of a variety of methods in the lesson process and the application of an innovative approach to teaching subjects. Much has been said and said about the newest methods of teaching the lesson at its different stages. but the current school has already risen to the level where innovative methods can be applied to the control of the assimilation of knowledge by students over a certain period. [five]. In addition to standard types of control, in which students' knowledge of the topics covered are assessed, it is also recommended to use PISA tests, which help the teacher to develop the logic, memory and thinking of students.

The authors of PISA proceed from the fact that the new quality of education is associated with the reorientation of the school to work in the logic of the competence-based approach (competence is understood as the ability of a person to act effectively in non-standard situations), and the PISA studies are the measure of the level of development of competence.

Typically, a PISA task consists of text or texts that are united by a common theme, provided with pictures, graphs, tables (both containing and not containing information useful for successfully answering questions), a set of questions related to the topic set by the information block.

Science literacy is the ability of a person to take an active civic position on issues related to the natural sciences, and his willingness to take an interest in natural science ideas.

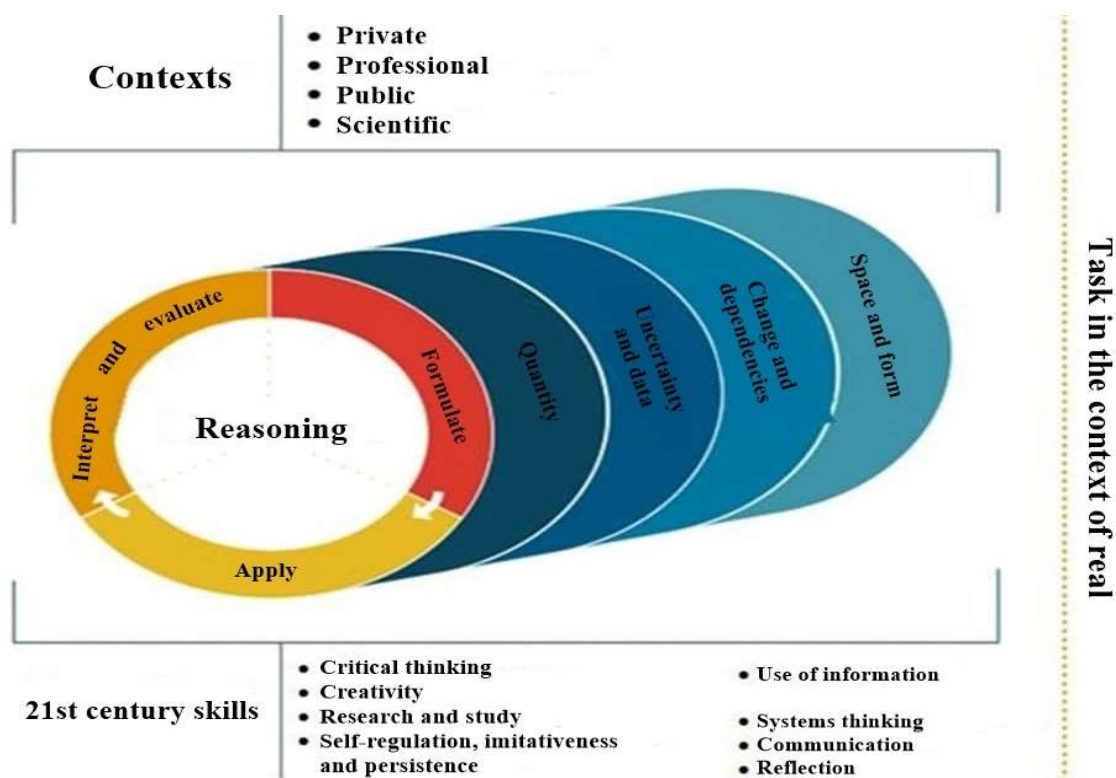
Natural Science Literacy Natural sciences and technologies have an impact on the material and intellectual spheres of society. The content framework of the PISA Science Literacy Test has four components.

First block. "Context" provides for three groups of tasks presented in real life situations. it is "personal", "social" and "global" (health, natural resources, environment, sources of danger and risks, links between natural science and technology).

Second block. "Competence" assesses three skill groups "recognizing and posing scientific questions" (identifying problems, identifying keywords and finding key features), "scientific explanation of phenomena" (applying knowledge, justifying or interpreting phenomena and recognizing) and "using scientific evidence" (formulating conclusions and assessing the consequences).

Third component. "Knowledge" includes such sections and topics as "physical systems" (structure of matter, chemical changes in substances, movement and forces, energy), "system of living organisms" (cell, man, populations, ecosystems and biosphere), "earth and space systems" (Shells, energy in systems and the history of the earth) and "technological systems" (connection between science and technology, inventions).

Fourth block. "Attitude" reveals the level of formed skills of curiosity and interest of students in science and research problems. Thus, the content blocks and tools of this direction allow us to determine the ability of a 15-year-old adolescent to understand and understand, explain and reasonably prove natural science phenomena and formulate scientifically grounded conclusions.



A natural science literate person seeks to participate in a reasoned discussion of problems related to natural sciences and technology, which requires him to have the following competencies: explain phenomena scientifically, evaluate and plan scientific research, scientifically interpret data and evidence.

PISA is fundamentally different from other existing assessment systems. They consist in:

1. The breadth of coverage. many world states participate in the program.
2. A focus on lifelong learning. Study participants report about their self-image after some time, about their motivation to continue their studies after basic education, about strategies for acquiring new knowledge and skills.
3. Orientation towards a policy that involves linking data on educational outcomes and attitudes towards learning with information about the background of students, their social status and the factors that influence the assimilation of knowledge and skills in schools.

4. Consistency and orderliness, allowing the participating countries to track the success of achieving educational goals over time.

Natural science literacy. it is regarded as a human capacity for an active citizenship in the natural sciences, as well as a complete willingness to take an interest in ideas in the natural sciences. a modern person should be competent in explaining phenomena, interpreting evidence and data, planning and evaluating research, arguing discussion of topical world problems [6]. Also, within each cycle, additional directions are introduced. for example, in 2012 financial literacy was tested, in 2015 attention was paid to problem solving, in 2018 the emphasis was on global competencies.

In 2021, representatives of our country are participating in the PISA study for the first time and are now preparing. Seminars are currently being held in fourteen regions. Seminars, which are held in the regions of Uzbekistan, are important for preparing the country for participation in international studies, which are a mechanism for increasing the global competitiveness of Uzbekistan [4].

Our representatives decided that the study will be carried out in a computer version. Uzbekistan will participate in this study in electronic format. Representatives of our country will be able to successfully conduct a PISA study. Since Uzbekistan is participating in these studies for the first time, there are no concrete results so far, and it is difficult to say anything. Representatives of our country in mathematics and natural sciences will be able to give better results. [3]. Our country has set itself the goal of participating in international research. This is not just some control of the state of education, but a direction that will provide information about the state of the education system, help improve the education system and make it more competitive. Countries need to participate in international research as they provide external assessments against international standards.

REFERENCES

- [1] Постановление Президента Республики Узбекистан «О мерах по повышению качества непрерывного образования и результативности науки по направлениям «химия» и «биология» 12. 08. 2020.
- [2] Указ Президента «О мерах по развитию образования и науки в новый период развития Узбекистана» 6.11.2020.
- [3] <https://www.gazeta.uz/ru/2020/09/08/education/>
- [4] <http://www.instrao.ru/index.php/novosti-i-anonsy/novosti/item/3578-mezhdunarodnyy-vebinar-po-podgotovke-k-pisa-i-pirls-rossiya-uzbekistan>
- [5] Андрианова, Е. И. Подготовка и проведение педагогического исследования: учебное пособие для вузов / Е. И. Андрианова; Министерство образования и науки РФ, Федеральное государственное бюджетное образовательное учреждение высшего профессионального образования «Ульяновский государственный педагогический университет имени И. Н. Ульянова». 57– Ульяновск: УлГПУ, 2013. – 116 с. - Библиограф. в кн. - ISBN 978-5-86045-614-3; то же [Электронный ресурс]. – URL:<http://biblioclub.ru/index.php?page=book&id=278048>.
- [6] Андреева, Н. Д. Методика обучения биологии в современной школе : учебник и практикум для бакалавриата и магистратуры / Н. Д. Андреева, И. Ю. Азизова, Н. В. Малиновская ; под ред. Н. Д. Андреевой. — 2-е изд., испр. и доп. — М. : Юрайт, 2017. — 294 с. — (Серия : Образовательный процесс). — ISBN 978-5-9916-9923-5. — Режим доступа: www.biblioonline.ru/book/6B03718B-084A-4AD0-8783-4CD35B88D187.