

THE SIGNIFICANCE OF THE TASKS OF THE PISA INTERNATIONAL PROGRAM IN THE TEACHING OF BIOLOGICAL SCIENCES

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Annotation

The article describes the educational importance of using international assessment studies in the biological education system, the purpose of implementing biology PISA research tasks in secondary schools, and its role in the education system. Also, opinions on the development of students' knowledge of PISA tasks are presented. This is where studying the PISA program is important.

Keywords: PIRLS, TIMSS, PISA, TALLIS, natural sciences, literacy, biology, assistant, heredity, national center.

Introduction

In accordance with the decree of the President of the Republic of Uzbekistan, setting priorities for the systematic reform of general secondary and extracurricular education, raising the moral, moral and intellectual development of the young generation to a new level in terms of quality, in order to introduce innovative forms and methods of education into the educational process, to achieve the Republic of Uzbekistan's entry into the ranks of the first 30 advanced countries of the world in the ranking of the PISA international program by 2030, as well as the international assessment of the quality of education in the public education system on the basis of the organization of research, the tasks of creating a national system for evaluating the quality of education aimed at assessing the level of literacy of students in reading, mathematics and natural sciences have been determined. [1].

The Main Part

Completing PISA assignments in biology is of great educational value. During the PISA tasks, first of all, the student's ability to think, logical thinking develops, because in order to solve the task envisaged in the PISA tasks, the student analyzes, synthesizes, compares, summarizes and draws conclusions from their content, solutions. Secondly, theoretical knowledge is strengthened and it is ensured that it is correct. Thirdly, it is possible to apply theoretical knowledge in practice. Fourthly, during the completion of PISA assignments, the student's independence, creative activity, confidence in his knowledge increases. Fifth, young people have a desire to master the basics of science more thoroughly. [2].

Completing PISA tasks in biology depends on the extent to which theoretical knowledge has been mastered. If a student does not have the necessary theoretical knowledge of Biology, he will never be able to consciously solve problems or exercises related to international assessment. Accordingly, teaching a student to solve PISA tasks should begin with giving them thorough and comprehensive knowledge. In order for students to master the knowledge according to the requirements of the program, the teacher does not limit himself to providing ready-made knowledge for their memory by showing tables or natural objects during each topic, using a computer, but also divides the educational material into parts (fragments). It is necessary to activate their cognitive activity, to develop independent learning.

In the application of the mentioned method, the use of problem-based education, conducting training based on pedagogical technologies, conducting laboratory training, lecturing, organizing discussions on certain topics, extensive use of the blackboard, that is, father, It is important to write down the genotype and phenotype of the different offspring of the mother and hybrids, to obtain gametes from mono, di and polyhybrids, to analyze the diversity between hybrids on the board, or to write and explain the mechanism of gene interaction.

Before doing PISA tasks in biology, the teacher explains how to solve them. PISA tasks are structured in several different ways, and regardless of how they are structured, students need to know their context, content, and purpose. After that, it is necessary to solve them based on theoretical knowledge. In order to solve PISA tasks, students must have mastered genetic symbols well.

It is advisable for them to use didactically written flashcards when solving PISA tasks. Each student is required to solve the given PISA tasks independently. During the lesson, the teacher will not have the opportunity to check the exercises and problems solved by all students. Accordingly, it is known from experience that the teacher checks the PISA tasks solved by 1, 2, 3 students, if the problem or exercise is solved incorrectly, the error is correct under the guidance of the teacher students who solved PISA tasks correctly should be appointed as "assistants" and according to the teacher's assignment, they should check the PISA tasks solved by other students and help those who have failed.

When solving PISA tasks, the appointment of "assistants" has a great educational value. First of all, this will make the pedagogical process work together with the pedagogues towards the educational goals of the students, that is, it will eliminate alienation and authoritarianism in the relationship between the teacher and the student, and the cooperation between them will be based on the teaching technology and the respect of the pedagogue and students. and gaining confidence, at the same time develops their ability to self-awareness, the real goals of their actions, the reasons for successes and failures.

By appointing "assistants", the teacher, secondly, encourages them by emphasizing that they have a thorough knowledge of other students, and thirdly, encourages others to follow them. The democratization of the educational process requires that the assistants change when solving each PISA task.

Of course, students do not acquire the necessary skills and competences to solve problems created on the basis of PISA tasks at once. The main task before the teacher is to develop such skills and qualifications.

For example, complete the table based on what is given in Figure 1.






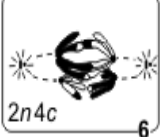

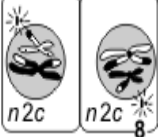

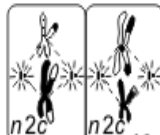

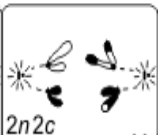

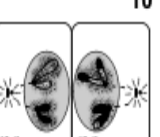

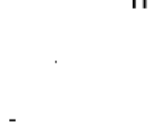
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Figure 1 Stages of meiosis

Biological literacy is the ability of students to connect different branches of biology and use it to find solutions to various problems. This includes biological thinking and the ability to apply biological concepts in their place, to be able to tell the course of processes. It helps people to understand and recognize the role of biology in the formation of world science, in the formation of the scientific worldview of mankind, in making reliable conclusions for the solution of various problems, and in the formation of people with different creativity and interesting thinking.

These concepts are central to the PISA study. Biological literacy is defined in PISA studies as follows. Based on biological knowledge: the ability of students: to be able to find a solution to the problems that arise around them based on biological concepts; to be able to convey the solution of any problem through biological knowledge; to be able to find a solution to the problem using biological knowledge and biological methods; the ability to analyze the methods of finding a solution to problems; to be able to compare the obtained results with the solution of the given problem; including the ability to draw conclusions by writing down the obtained results.

Therefore, teaching biology requires not only the information given in the main program, but also the use of information that allows you to have additional information. In addition, it requires the mobilization of the knowledge obtained from related disciplines to find a

solution to the problem. An innovative approach to the study of biology topics is important. It is important to convey to students the level of influence of heredity and variability and the factors affecting it. For this reason, it is necessary to apply the current methods and technologies of teaching in the study of these subjects [7].

In order to improve the results of international studies, it is necessary to change the teaching methodology and priority principles in the purposeful training of teachers and in the educational process. For this, we need to train teachers, implement a more active system of developmental education, and provide teachers with materials that they can use more successfully in the educational process. This is most important and should be published in sets with materials that reveal the characteristics of the PISA and PIRLS research tasks. Now it is necessary to implement these tasks step by step and work on solving the emerging problems.

Until now, international organizations such as the Organization for Economic Co-operation and Development (OECD), the International Association for the Evaluation of Educational Achievements (IEA) have organized research with the participation of countries participating in research, members of the program's governing board, international expert councils and consortia, and National Centers in the countries. discussions were held on setting maturity dates. During the discussions, various alternative ways were considered.

After extensive discussions and debates, decisions were made by international organizations to set the following deadlines for conducting research within the framework of the PISA and PIRLS programs: Research within the framework of the PISA program will be delayed for one year. [13].

It should be remembered that it was not easy for international organizations to make a decision based on discussions with all the participating countries on setting the above-mentioned deadlines. It is known that our President has set a number of priority tasks for the preparation of these studies in our country. In particular, in the concept of the development of the public education system of the Republic of Uzbekistan until 2030, in the PISA (The Program for International Student Assessment) ranking of the international student assessment program, Uzbekistan will be among the 60 in 2025, and by 2030, the first 30 advanced it is planned to be included in the list of countries. Therefore, on the one hand, the change of these terms will create additional opportunities for general education institutions to prepare. It is now a priority for all of us to take all the necessary actions and to raise the level of preparation in order to properly participate in the research, without slowing down the preparation.

However, the validity of any adopted decisions and the successful organization of the specified events will depend on the stabilization of the complex quarantine conditions prevailing in the world and in our country. During the past period, a number of works were carried out by the Education Inspection and the National Center in cooperation with the Ministry of Public Education. The study of international experiences on the introduction of international research, the training of about 30 responsible employees in foreign countries, the involvement of 7 international experts, and the training of 260 trainers across the

Republic can be recognized as the first steps. Also, 4 methodological manuals containing general concepts of PISA and PIRLS programs, sample tasks, recommendations for their implementation and evaluation criteria were created for teachers and students, and 10,000 copies each were printed. and delivered to all general education institutions and educational management bodies.

A set of assignments and exercise books have been developed for the relevant areas of the programs. The initial version of the online simulator program designed to help students to work independently and solve non-standard tasks in these tasks was launched. In order to prepare teachers and students of general education schools for international assessment programs, 348 base schools were identified across the Republic and the rest of the general education institutions were attached to them.

PIRLS - assessment of the level of reading and understanding of the text of primary 4 - grade students; TIMSS - assessment of the mastering level of 4th and 8th grade students in mathematics and natural sciences; PISA-assessment of the level of literacy of 15-year-old students in reading, mathematics and natural sciences; TALIS is a study of the teaching and learning environment and the working conditions of teachers in general secondary educational institutions of leaders and pedagogues. With the help of TIMSS, PISA, students' educational achievements are evaluated: knowledge, application, and reasoning skills. .

In addition, in cooperation with the National Center and trainer teachers in the public education system, in order to adequately prepare for international assessment programs, advanced foreign experiences are studied, and mathematical, natural and reading literacy, creative thinking are developed, and the programs More than 55 interesting video products have been created, which contain detailed information about the general processes.

The "Literacy in natural sciences" direction of the international assessment comprehensively examines the knowledge and skills acquired by students in physics, biology, chemistry, and geography.

Conclusion

The main goal of the PISA study is to provide internationally comparable data on students' reasoning, with clear implications for education policy and systems. The process of thinking logically under the task and seeing the mechanism of biological processes should tend to improve through education; the various supporting factors of this thinking process in the context of the educational process must be clearly defined and depend on the indicators in the assessment; the content of the field used in the evaluation must be closely related to the subjects taught in regular high school; In order for the assessment to be predictive of creative achievement in school and life, PISA tasks must be similar to real-life activities in the student's daily life and in the classroom.

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