



METHODOLOGICAL FUNDAMENTALS OF FUNCTIONAL LITERACY FORMATION

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Article history:	Abstract:
Received: 26 th July 2021 Accepted: 7 th August 2021 Published: 30 th August 2021	The development of competitiveness, knowledge of the labor market and business, knowledge of various areas of high-tech production, critical and creative thinking, understanding problems and finding solutions for various life situations requires understanding and applying "functional literacy". Functional literacy is the ability to apply the knowledge, skills and competencies that a person acquires throughout his life to solve a wide range of life problems and in socio-economic relationships that he faces in various areas of his life.
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The rapid development of the world community requires an innovative approach in all areas. Recognized as a key factor for sustainable development in developed countries, the new concept of education, defined by international organizations and most countries of the world until 2030, improves the process and tools for assessing the quality of education in order to determine the results achieved. The introduction of transfer mechanisms was called an urgent task" [1].

Academic scholars and practitioners working in the field of functional literacy must be involved in the research process to ensure that the educational process meets international standards and prepares a competitive workforce for the 21st century.

It should be noted that interest in this issue is growing all over the world.

Practically new in pedagogy, the concept of "functional literacy" arose in the third quarter of the twentieth century in response to the global challenges of our time associated with the transition of society to the post-industrial era.

In the 1950s, with the creation of the United Nations Educational, Scientific and Cultural Organization (UNESCO), literacy began to be studied internationally. At the 10th session of UNESCO in 1958, it was recommended that "a person who can read, understand texts and compose a summary of everyday life be called literate, a person who can only read semi-literate" [5].

There are different approaches to the concept of "literacy" based on the results and conclusions of many years of research conducted by international experts in order to improve the literacy of society and the quality of education.

The National Encyclopedia of Uzbekistan defines the concepts of literacy and literacy as follows: 1) one of the indicators of the cultural level of the population; 2) possession of the skills of oral and written communication in accordance with the norms of the literary language; 3) the ability to read and write simple texts; 4) knowledge of a specific area (political literacy, technical literacy, medical literacy).

The essence of the concept of "literacy" varies at different stages of the development of society, depending on its social, political, scientific, cultural and spiritual level [3].

The search for a new impetus to achieve competitiveness in the economy and leadership in innovation at the global level, knowledge of the labor market and business, high-tech production, knowledge of various fields, critical and creative thinking, solving problems in various life situations, set the task of preparing specialists capable of creating innovative projects ...

By the 1970s, the socio-economic development of society required the expansion of the concept of "literacy", and in 1965 the World Congress of Ministers of Education in Tehran suggested using the term "functional literacy" and defined it as "the ability of a person to adapt and act in the external environment. [8] ... This, in turn, opened up new areas of lifelong learning.

The problem of "functional literacy" was discussed by foreign scientists M. Cole and S. Scribner, I. Kirsh and J. Guthrie, S. White, CIS countries S.A. Tangyan, V. Matskevich, S. Krupnik, A.A. Leontiev, O.E. Lebedev, P. Atutov, V.A. Ermolenko, B. Geshunsky, A.M. Novikov, L. Research Perminova et al.

According to the Russian educational psychologist A.A. Leontyev, "A functionally literate person is a person who is able to apply the skills and abilities that he acquires throughout his life in search of solutions to a wide range of life problems and socio-economic relations in various fields" [6].

Functional literacy is the ability to express oneself in learning and practice, as well as the ability to find and apply optimal solutions to life's problems.

His research, S.G. Vershlovsky and M.D. Matyushkina directly associate "functional literacy" with literacy in information and communication technologies. According to Tangyan, minimum functional literacy is a person's need for knowledge and skills in the development of society.

P.R. Atutov identified two aspects of functional literacy: knowledge, skills, competencies that students develop, and the need to constantly develop their knowledge and skills.

V.A. Ermolenko, R. Perchenok, S.Yu. Functional literacy among the Chernoglazkins is also associated with personal characteristics.

In his work, Novikov analyzed functional literacy in a broad sense, including computer and economic-political literacy. These include computer skills, database use, environmental and economic knowledge, trade and marketing, and human rights literacy.

L.M. Perminova, on the basis of her experience, developed a methodology for the development of functional literacy of schoolchildren [7]. In her words:

- teaching and must have a base in the school curriculum;
- be able to apply them interdisciplinary, i.e. have practical skills;
- be able to present their work (school, organization, social institutions);
- career orientation;
- communication, joint skills;
- there is a desire to develop.

Thus, we can say that a person's functional literacy depends on two aspects: the ability to apply the knowledge gained throughout life in real life situations and the need for self-improvement.

Since the middle of the twentieth century, the problems of literacy and functional literacy have been widely covered in the documents of international programs for assessing the achievements of students of educational organizations and in the research works of the participating countries.

Literacy is freedom, economic growth and the rapid development of civilization.

The International Student Assessment Program (PISA), conducted by the Organization for Economic Co-operation and Development (OECD), evaluates how well 15-year-old students can apply their knowledge to real life situations [10-11].

The difference between PISA and other international studies is that at this stage of its development, it considers it important to identify competencies that may be useful to students in the future.

The PISA survey, conducted every three years, focuses on reading literacy, math literacy and science literacy. The organizers of the study consider the concept of "literacy" as "functional literacy".

PISA Research Assignments are developed by the PISA Consortium, the PISA Governing Council, the OECD Education Authority and leading experts from the participating countries.

The specifics of PISA assignments are presented in the form of case studies taken from real life. Admission conditions and questions are different from school textbooks. This, in turn, creates problems in the formation of "functional literacy" in students.

By the Resolution 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 public education" dated December 8, 2018 No. 997, it was decided that Uzbek students should participate in a number of international studies. By the Decree of the President of the Republic of Uzbekistan dated April 29, 2019 No. 5712 "On approval of the Concept for the development of the public education system of the Republic of Uzbekistan until 2030", the task was set to be among the 30 best countries in the world in the ranking of the PISA International Student Assessment Program by 2030.

The participation of our country in international studies to assess the quality of education will help solve the following problems:

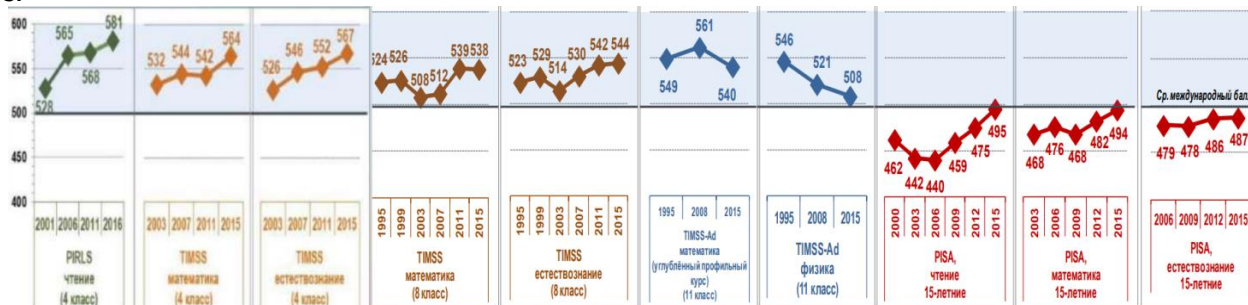
- to identify gaps in the education system;
- search for ways to provide quality education;
- ensuring the socio-economic stability of society;
- to increase the inflow of investments;
- training of competitive specialists.

For this purpose, the National Center for International Research on Education Quality Assessment was established under the State Inspectorate for Education Quality Control, which is responsible for preparing this process.

In his interview to the media, Abduvali Ismailov, director of the National Center for International Studies on Education Quality Assessment, national manager of PISA and PIRLS projects, said the following: "Today, there are tasks in the open database of the PISA program that can be used. However, these assignments are limited. It is necessary to develop a database of national tests that will form the functional literacy of students and assess their logical and creative abilities. But at the moment there are no testologists in Uzbekistan who could do this work. However, there are teachers who are interested in asking questions in various workshops who know the basics of writing PISA questions. We work with them. But if we are to regularly participate in the PISA program and achieve good results, we need to carry out comprehensive reforms. It will be necessary to develop a separate system for training testers [4]."

Studying international experience, it should be noted that it is impossible to achieve the desired result only by discussing the problems presented for open use in international PISA assessment studies. The reason is that in each cycle the tasks change. This makes the students unprepared for the process. To this end, teachers need to develop interdisciplinary skills based on the topics covered in collaboration with other teachers.

Our study analyzes the results of an international study of Russian students, since their form of education is close to ours.



According to international studies PIRLS, PISA and TIMSS (Fig. 1), the level of Russian schoolchildren's proficiency in subjects is higher than in a number of countries (for example, Finland, the Netherlands, Canada, Australia, Czech Republic, Hungary, New Zealand, Sweden, etc.). better results than their students, while their ability to apply their knowledge in non-educational situations was lower than theirs.

From this we can conclude that education in Russia is mainly aimed at forming a base of fundamental knowledge, programs and textbooks, forms of education to provide theoretical knowledge.

It can be assumed that the results of our country's participation in the study will be close to this.

The study was conducted in the area of mathematical literacy research PISA.

Mathematical literacy is a person's ability to understand the importance of mathematics, to apply it in various life situations (construction, trade, medicine, travel, etc.) [10-11].

According to the study, the following requirements are imposed on students' mathematical literacy:

- identify problems;
- express these problems in mathematical language;
- solve these problems using mathematical facts and methods;
- analysis of the methods used;
- explain, interpret the results taking into account the problems;
- formulate, express and record the results of decisions.

G.A. Poyarova connects the formation of mathematical literacy in students with the development of skills in solving practical problems:

- the process of solving problems of a personal, professional, social, scientific nature, the formation of high motivation among students;
- presentation of the problem as a situation requires the student to apply the knowledge gained in various areas of mathematics or other disciplines;
- presentation of the task in the form of diagrams, graphs, pictures;
- Uncertainty about how to solve the problem.

V.A. Krutetskiy linked mathematical literacy with mathematical ability and divided it into the following components:

- intellectual;
- creativity;
- emotional and personal;
- a critical approach.

According to V.A. Krutetskiy's mathematical ability requires a certain amount of knowledge, skills and abilities, and mathematical knowledge, intuition and logic are considered intellectual organizers. The emotional component includes self-control and self-criticism, hard work, hard work, and contentment. The creative component includes several types of skills: developing different ideas and proposals, applying different strategies to a task, presenting non-standard ideas, fully understanding and developing the process, and being open to innovation. The critical approach component includes evidentiary testing, retesting and justification, and argumentation. A person's ability to generalize mathematical objects, relationships, and actions is important for mathematical literacy.

The relevance of the study lies in the fact that schoolchildren do not understand the importance of mathematics as a practical science, which reduces the level of mathematical literacy. The problem is exacerbated by the fact that the current high school mathematics curriculum places great emphasis on theoretical knowledge and does not include dedicated hours for practical training.

To determine the functional literacy of his students, the teacher must give them tasks that require them to solve a problem in an unusual life situation. Completing such tasks requires students to apply their knowledge in unusual situations, to find new ways to solve them and be creative.

According to the results and conclusions of our study, for the formation and development of "functional literacy" in the education system, it is necessary:

a) In the learning process:

Creation of a motivational learning environment.

Updating the base of information and communication technologies in accordance with modern requirements.

Encouraging students to study independently.

Organization of training based on project work.

Take into account the abilities and capabilities of the student in the educational process.

Development of evaluation criteria.

Ensuring parental participation in education.

b) In the organizational and methodological process:

Organization of regular scientific and practical seminars, trainings on the topic "The concept of functional literacy, its formation and development" in educational institutions;

Coverage of the world experience in the field of functional literacy in the media;

Preparation of guidelines for teachers on the formation and assessment of functional literacy;

Posting assignments in the classroom on functional literacy on websites and in telegram channels;

Develop skills in creating and working with cases;

STEAM teacher training for mainstream schools.

Formation of functional literacy must develop in an environment close to the student. If he lives where they are engaged in agriculture, animal husbandry, gardening, manufacturing, entrepreneurship, then this area is close to the child. The child lives in this environment and takes it to heart. Then, similarly, develop functional literacy in other areas.

It is necessary to introduce innovative ways to successfully complete practical and methodological tasks, such as

Functional literacy is not what we know, but how we can apply that knowledge.

The transition from the classroom teaching system to project activities, the integration of disciplines through the process of active application in practice, the search for new ways to solve problems will contribute to the development of human functioning in society.

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