



# CONCEPTUAL ANALYSIS OF THE IMPLEMENTATION OF THE PISA INTERNATIONAL ASSESSMENT PROGRAM IN THE NATIONAL EDUCATION SYSTEM

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## ABSTRACT

*In the article, the conceptual content of the PISA international assessment program, aspects of the formation and development of the conceptual basis of the assessment program: the stages of the historical formation of the assessment program concept, the coherence of the assessment program concept with the educational policy, the role of the Organization for Economic Cooperation and Development as an organization developing the concept of the PISA international assessment program and the critical aspects of the evaluation program concept are described.*

**KEY WORDS:** *PISA international assessment program, conceptual content of the program, national education system, student literacy, quality of education.*

## INTRODUCTION

In the era of global changes, the development trends of the education quality assessment system at different levels, Uzbekistan's participation in international comparative programs for the assessment of the quality of education, opportunities to increase the capacity of the education system, comprehensive analysis of the results of the international comparative program for the assessment of the quality of education, students' reading, natural sciences, mathematical thinking and positive thinking assessment of literacy, methodology of international programs, use of assessment criteria in the creation of national teaching-methodical and measurement materials, strategic directions of education quality assessment are currently the most urgent tasks of the education system.

## RESEARCH METHODS

According to the concept of the PISA international assessment program, the main goals of the assessment program are defined as finding answers to the following questions: How do 15-year-old students meet the requirements of science and society? The main goal of the evaluation program is to determine the situation of students' use of the knowledge they learn at school in everyday life [5, 266].

## RESULTS AND DISCUSSIONS

The mission of the PISA international assessment program is to provide the necessary information to find answers to the following questions facing the participating countries, ministries and agencies responsible for education:

- Are students sufficiently prepared to take an active role as citizens in a democratic society at the end of compulsory education?
- do students have the ability to analyze, justify and communicate their ideas and imaginations?
- are students receiving education at school based on the requirements of the current labor market?
- do students meet the requirements of the "lifelong learning" concept? [1,9].

The PISA international assessment program allows for the analysis of school education as well as the necessary information for other stages of education. Such information is of great importance in the continuing education system. In 2000, a total of 250,000 students from 32 countries participated in this program [1, 10].

Politically, the PISA assessment program is managed internationally by the PISA Governing Board (PISA). The PISA international assessment program was put into practice in 1997 by the initiative of the Organization for Economic Cooperation



and Development (OECD), and has been implemented since 2000 and is conducted every three years [4, 9].

In 2018, 78 countries (economy) participated in the PISA international assessment program, and 88 countries (economy) are planned to participate in 2022. The PISA international assessment study, scheduled for 2021, was moved to 2022 due to the pandemic. This indicates that the PISA international assessment program is growing in importance and coverage in the world. Of the 88 participating countries, 83 have computer-based assessment programs. Special training seminars are organized for the responsible organizations of the participating countries, and these seminars include reviewing the scope of questionnaires, organizing the process of approving program tasks and forming the necessary database, implementing harmonization processes for questionnaires, compliance with technical standards of the program, its difference from previous programs, included changes, sampling processes of schools and students, organization of translations, use of a special portal for translations, organization of activities of national centers responsible for programs and requirements for their employees, translations, adaptation and coding of questions and other organizational issues are considered. In addition to tasks aimed at assessing the basic competencies of students, questionnaires are organized for students and teachers, school management staff. Questionnaires are formed based on the national characteristics and values of the participating countries. These questionnaires provide an opportunity for empirical inquiry for pedagogical research in education. In particular, the tasks that evaluate the basic competencies of students are thoroughly reviewed by subject experts. Educational testing service and attached higher educational institutions are involved in this process. For example, the Luxembourg Center for Educational Testing (LICET) at the University of Luxembourg is responsible for the 2022 evaluation program. Program assignments for 2022 will be ready in March 2019. The preparation, translation, and approval of program assignments is a complex process, and this process involves independent agencies of Linguistic control, Educational Testing Service, and Scientific Program Councils.

It is necessary to study the formation and development of the conceptual foundations of the PISA international assessment program in 4 aspects:

1. PISA international assessment program stages of historical formation of the concept.
2. Integration of the PISA international assessment program concept with education policy.
3. Organization for Economic Cooperation and Development (OECD) role as an organization developing the concept of international assessment program PISA.
4. Critical aspects of the PISA international assessment program concept.

PISA international assessment program stages of historical formation of the concept. The history of international evaluation programs in the educational system was actually founded in 1958 by a number of European countries and the United States in the city of Hamburg, the International Association for the Evaluation of Educational Achievement. The Association is a non-governmental scientific organization, the pedagogic scientist B. Blum, psychometric scientist R. L. Thorndike, famous in international educational programs, are members of it [4, 11]. The purpose of the association was to complement the results of the empirical program on the quality and historical development of education, the change of traditions in education.

Also, the main goal was to compare the educational process based on the results of the program in the international framework based on uniform criteria [4, 12]. Before the creation of the association, mature scientists of the world have been researching the cultural and social aspects of the educational process in different countries. In 1960, the International Association for the Evaluation of Educational Achievement (IEA) began to conduct the first international benchmarking programs. In 1964, the International Association for the Evaluation of Educational Achievement (IEA) conducted the first international assessment program in mathematics - FIMS (The First International Mathematics Study). One of the main organizers of this evaluation program was the German Institute for International Pedagogical Programs (DIPF Deutsche Institut für Internationale Paedagogische Forschung). This assessment program is intended for 7th grade students [4, 8].

From 1966 to 1973, the "Six Subjects Survey" (Six Subjects Survey) was conducted with the participation of 21 countries with the participation of world-famous educational scientists, including J.B. Carroll. In this evaluation program, 6 subjects: natural sciences, literature, reading, English language, French as a foreign language, as well as political education subjects were conducted. At the beginning of the 1990s, the International Association for the Evaluation of Educational Achievement - IEA began to conduct an assessment program (Reading Literacy Study) for 9-14-year-old students [2, 20]. This evaluation program was the impetus for the subsequent PIRLS/IGLU evaluation program.

Since 1991, the International Adult Literacy Survey (IALC International Adult Literacy Survey) has been conducted for adults (ages 16 to 65) covering 21 countries [3, 16]. Since 2010, international assessment programs (PIAAC - Program for the International Assessment of Adult Competencies) have been held. This assessment program is organized by the Organization for Economic Cooperation and Development. Currently, 35 industrialized countries are participating in this program.

TIMSS Third International Mathematics and Science Study, which has been held since 1995, is an international assessment program conducted every four years by the International Educational Achievement Assessment Organization - IEA. This program is based on the previously mentioned assessment programs - FIMS (First International Mathematics Study, 1964, 12 countries) and Second International Mathematics Study SIMS (Second International Mathematics Study, 1980-1982, 20 countries), in addition to the First and It was conducted as a continuation of the Second International Science Study programs (First and Second International Science Study, 1968-1972 and 1982-1986). Currently, this International Assessment Program is



called the International Mathematics and Science Quality Program (TIMSS – Trends in International Mathematics and Science Study).

Integration of the PISA international assessment program concept with education policy. Since 1950, the IHTT has started a comparative analysis of statistical data on the education system of the member states. The purpose of this comparative analysis was to study the needs of qualified specialists through educational planning in industrialized countries. The comparative analysis of statistical data is important not only from an economic point of view, but also from a socio-political point of view, and it provides the opportunity to have the necessary data for the analysis of the issues of equal rights in education. The initial approach of IHTT member states focused on statistical data, which compared states' spending on education, that is, state funding of education and funding resources. Since 1992, statistical reports have been published by IHTT in the form of reports under the name "Education at a Glance". Educational evaluation criteria developed by this initiative of IHTT have been widely used in fields other than education, including economy, socio-political fields, and educational programs [3,17].

In the late 1990s, IHTT directed the expansion of educational evaluation criteria to include the measurement of competencies achieved in education. By doing this, it is aimed not only to compare the costs of education financing or resources, but also to measure the results achieved by students in education. The experiences of the International Association for Assessment of Educational Achievement led to the implementation of the PISA international assessment program. The results of the PISA international assessment program serve as a source of information for the national education policy of the participating countries, for determining the direction of educational reforms, and for scientific research. The PISA international assessment program provides an opportunity to study the systematic characteristics of the basic competencies of 15-year-old students in reading, mathematics and natural sciences [1, 13].

The role of the Organization for Economic Cooperation and Development (OECD) as an organization developing the concept of the PISA international assessment program. IHTT is an organization created to politically support the economy and social life of industrialized countries. The main purpose of this organization is:

- creation of new jobs;
- allocation of funds for economic development and growth of living standards, conducting policies related to financial and economic spheres;
- managing international competitiveness, especially in the process of opening borders for global production and trade, assisting governments in improving economic efficiency and quality systems;
- ensuring growth of human capital through education [1, 14].

IHTT's educational evaluation criteria are evolving over the next decade, and the criteria are made available to the general public in the organization's Education at a Glance report. The evaluation criteria are developed within the framework of the "Indicators of Educational Systems" (INES - Indicators of Educational Systems) project. Evaluation criteria include comparative information on human resources and financial resources spent on education, tasks of the education system, progress and investment in education.

The PISA assessment program is one of the IHTT's projects in the field of education, and the program aims to assess and compare the basic competencies of students in an international framework. According to the concept of the international assessment program PISA, the program focuses on real-life competences, and less attention is paid to the knowledge that students acquire in school through subjects. The PISA international assessment program first of all examines the basic competencies formed by students before the end of compulsory education, depending on their knowledge and concepts in the school curriculum [1,17].

An international team of experts continuously refines the overall concept of the program, and this concept allows for the measurement of core competencies. It should be noted separately that the purpose of the program and the methods, principles and criteria used, and the interpretation of the results of the program have been the cause of wide discussions. Since its implementation, the evaluation program has been improving, incorporating the important aspects of modern development stages into the content of the program. As a result, the number of countries participating in the program is increasing year by year.

Critical aspects of the PISA international assessment program concept. The assessment program concept is not without flaws. The countries participating in the PISA international assessment program and the national coordinators responsible for the program, pedagogues, constantly express critical opinions taking into account the characteristics of the national education system, principles, educational policy, the content and essence of the educational process, and on this basis approach the research with new concepts and directions to the development of the educational system. will increase the efficiency of using the program.

The PISA international assessment program does not provide an opportunity to determine the following situations:

1. The PISA international assessment program does not allow to determine which country has a "good" or "bad" education system, but rather it determines the current state of students' basic competencies at a certain time (every three years).
2. The results of the PISA international assessment program do not reveal the "strengths" or "weaknesses" of the national education system of the participating countries. The results of the evaluation program provide an incentive to determine the possible relationship between the problems in the educational system and their solutions.



3. The PISA international assessment program does not determine the directions for the development of the quality of the national education system. The results of the evaluation program provide scientifically relevant, reliable data for various educational research professionals. Using this information, reforms will be planned to improve the quality of the education system.

**Conditions for education and development.** The PISA international assessment program assesses conditions for learning and development using questionnaires along with core competencies. This assessment is aimed at determining the factors affecting the formation of basic competencies in students. In particular, the students' interest in the learning process, the importance of studying for their lives, the conditions created for the students' education in the family and at school are studied. For example, it is researched whether the formation and development of basic competences of students depends on school education, educational activities, or the social origin of students and the state of development of their basic competences. These data provide an opportunity to effectively organize the educational process, develop a positive attitude of students to education, and analyze the strengths and weaknesses of educational standards. Out-of-school education, independent education and conditions of students, the formation of academic capital in the family of students are reflected in the content of this questionnaire.

In addition to assessing basic competencies, the PISA international assessment program identifies factors influencing the formation of basic competencies through questionnaires to students participating in the program, their parents, teachers, and school administrators. Through questionnaires, school and extracurricular teaching and learning environment is researched. Through a questionnaire intended for students, the development of basic competencies is investigated in relation to socio-economic and cultural factors. The questionnaire for parents is optional for the countries participating in the international assessment program PISA, and it concerns the conditions for studying at home and how parents support the development of their children's basic competences. The purpose of the questionnaire for the school administration is to determine the relationship between the conditions of teaching and learning and the formation of basic competencies. Through this questionnaire, the structure and resources of the school, the conditions created by students in subjects are studied in detail.

The term "literacy" is used in the international assessment program PISA, which corresponds to the term "savodxonlik" in the Uzbek language. This term refers to a set of basic competencies that determine the student's readiness for social life [5,255]. The term "literacy" is not the competences formed within a certain subject, but the ability of the student to find his place in society, to start a professional activity, to have the skills of personal development, to have an appropriate attitude towards society, political, economic, social life, technique, technology, "active citizen", Competences necessary for acquiring tasks such as "high-level consumer", "reasonable user of the environment and resources" are provided.

**Table 1****Processes and requirements for the individual presented in the PISA international assessment program concept**

<b>Processes</b>	<b>Necessary requirements imposed on the person</b>
Globalization	The formation of a sense of duty to humanity
Political	Formation of active citizenship position
Economical	Consumerism with a rational attitude
Social	The formation of the position of an active and developed person with a developed social consciousness
Technical	The pursuit of novelty, convenience
Depends on the environment	Wise use of resources and active promotion

As mentioned above, the PISA international assessment program aims to investigate students' literacy in reading (reading literacy), mathematical literacy (mathematical literacy) and science literacy (science literacy). Also, students' literacy in computer, financial literacy, foreign language, creative thinking, "learning in the digital world" is checked, and one of them is selected for the research conducted every three years. It is optional for countries participating in the program.

In accordance with the concept of the international assessment program PISA, the term "literacy" is presented as "a set of basic competencies". In our opinion, the international assessment program PISA puts a lot of emphasis on researching the ability of students to be observant, aspiring and apply the knowledge learned at school in different situations and situations in everyday life. Assignments such as these have been recognized by various experts as appropriate for an assessment program. Various situations, issues, problems or situations related to professional activities and students' lives are complex and require students to apply their knowledge, experience and skills.

In our opinion, there are three important positive aspects of the definitions of the terms "competence", "basic competences" in the PISA international assessment program concept and state education standards, and their division into different competences according to their content:

1. The term "core competences" is used as a "means" to express the purpose stated in the regulatory documents. Examples include the concept of the PISA international assessment program and the terminology used in state education standards.



2. "Basic competences" serve to express the social order set by the state and society in the educational content. In this regard, IHTT and the Ministry of Public Education, although they are expressed differently in the normative documents, broadly repeat and complement each other, but there are differences according to the formation of the term and the context in which the term is used.

3. The basic competencies listed in the state educational standards are inextricably linked with the competencies related to science. The "basic competence" presented in the concept of the PISA international evaluation program essentially denies dependence on a specific school subject.

Based on the analysis of scientific literature, educational and regulatory documents, it was found necessary to use the following term: the basic competencies of the student are the knowledge, skills learned in school and outside of school (independent education, family, society, with the help of mass media, in various non-school educational institutions) in accordance with his age development, skills in society, nature, technology, economy, social spheres, as well as in the context of globalization, to independently understand, analyze, make decisions and express one's attitude, to think far, to consider different points of view (environment, humanism, nationalism, patriotism, rationality, using mathematical models) taking into account their solutions, conclusions, proposals are expressed as the result of formation processes.

In our opinion, the presentation of basic competencies as "results of processes" fully interprets the fact that these competencies are constantly formed in students, and their components complement each other and develop.

Pupils develop the ability to solve various life problems and situations throughout their lives, and their social experiences increase. Pupils develop basic competencies by expressing their ideas, views, and attitudes in various problem situations. In the formation of basic competencies, school education, independent education, family environment, environment, extracurricular environment have their influence. Formation of basic competencies in students is important for their successful preparation for professional activities. Therefore, personal competencies such as "responsibility", "responsibility for one's own activities", "working in groups", "showing one's results", "self-management in difficult situations", which are components of professional activity, are formed in parallel with the basic competencies.

Today, there are authoritative international organizations that conduct research on the evaluation of the achievements of the world's educational system and help in the implementation of reforms. The Organization for Economic Co-operation and Development (OECD) conducts research to find solutions to problems in various fields. In particular, on the basis of this organization, the PISA international assessment program was developed in order to develop general secondary education, which is the main link of the education system. The reason why the economic organization turns to the education sector is that the personnel for any field is first of all grown up in schools and ordinary classrooms. The changes taking place in the world, including globalization, political, economic, social processes, technical and technological development, environmental and resource use, put new tasks before the educational system. The PISA international assessment program has been conducted every three years since 2000 to examine the literacy of 15-year-old schoolchildren in reading, mathematics, and natural sciences, as well as computer literacy, creative thinking, and foreign language literacy. The Republic of Uzbekistan will participate in this assessment program for the first time in 2022, and the organizational-methodical stage is currently being implemented. This serves as a database for conducting systematic, continuous national monitoring of the national education system and determining the direction of education policy. As a result, the quality of education will be increased, having a significant impact on the national education policy. The international assessment program PISA helps to determine the conceptual direction of developing students' intellectual potential. Another important goal of the program is to ensure that students engage in lifelong learning.

The PISA international assessment program requires teachers to evaluate the quality of assignments given to students in the learning process and review the assignment of assignments. The PISA international assessment program summarizes the results across groups, schools, social classes of the population, and countries and provides educational information in the form of statistics for various aspects of society. This evaluation program plays a complementary role to the educational and training function of schools.

## CONCLUSION

The purpose of the PISA international assessment program is to determine how 15-year-old students meet the demands of science and society, to study the situation of students' application of the knowledge they learn at school in everyday life. Methods of measuring students' literacy have been developed for research, and through these methods, students' literacy in reading, mathematics and natural sciences will be determined, based on which the rating of the participating countries will be developed. Students' core competencies are formed not on the basis of a specific subject, but on the basis of interdisciplinary integration, personal observations of students, social experiences and independent learning.

The analysis of scientific literature, educational and regulatory documents shows that the basic concepts, principles and methods of assessment presented in the assessment program require certain pedagogical conditions for their implementation in pedagogical practice. On the one hand, this requires making changes to the content of existing educational and regulatory documents, and on the other hand, it requires reconsidering the organizational and methodological aspects of the educational process, didactic possibilities of teaching subjects.



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