

FORMATION OF STUDENTS' ABILITY TO THINK CREATIVELY BASED ON INTERNATIONAL ASSESSMENT STUDIES

Bakhtiyor Khabibullayevich Usmanov

Lecturer of chemistry at the Tashkent Pediatric Medical Institute, Academician Lecius

Annotation

This article examines information about the formation of students' creative thinking skills based on international assessment studies. At the same time, creative thinking, diagnostics of the educational process, improvement of educational programs, modernization of teaching methods, optimization of the assessment system, advanced training of teachers, strengthening cooperation with parents, the impact of international assessment studies on creative thinking, methodological foundations for the development of creative thinking, the development of divergent thinking, the main aspects of divergent thinking, interactive and project research and development approach, integration of international assessment research results into education, the role of international evaluative research, the importance of the methodology of using international evaluative research in the development of cognitive competence of students, methodological approaches to the use of international evaluative research in the development of cognitive competence of students are highlighted.

Keywords: creative thinking, diagnostics, modernization, optimization, divergent thinking, interactive and project approach, integration, cognitive competence.

Introduction. Today, the formation of students' creative thinking skills is an urgent task in the education system. International assessment studies (PISA, TIMSS, PIRLS, etc.) provide valuable information about various student competencies, including the ability to think creatively. The results of these studies are of great methodological importance for improving the educational process and developing students' creative thinking skills.

The methodical part. When completing assignments in international assessment studies, students will need to think creatively. Including:

International assessment studies are aimed at assessing students' knowledge, skills, and relationships. In recent years, some studies (such as PISA 2022) have also focused on assessing students' creative thinking abilities [1].

The ability to think creatively is the ability to generate new ideas, solve problems, and be flexible in various situations.

Creative thinking is the ability of students to solve problems using non-standard approaches, generate new ideas and offer innovative solutions.

The methodological significance of the formation of the ability to think creatively based on international assessment studies is as follows:

1. Diagnosis of the educational process:

The results of international assessment studies help to determine the level of creative thinking of students.

This allows teachers to identify students' strengths and weaknesses.



Based on the data obtained, it is possible to organize the learning process based on an individual and differentiated approach [2].

2. Improving educational programs:

The results of international assessment studies help to verify the existence of goals and objectives aimed at developing creative thinking in educational programs.

It is possible to determine the need to include methods and tools aimed at developing creative thinking in educational programs.

It is possible to develop measures aimed at ensuring that curricula comply with the requirements of international assessment studies [3].

3. Modernization of teaching methods:

The results of international assessment studies indicate the need to use interactive methods aimed at developing creative thinking (problem-based learning, projects, case studies, brainstorming, synesthetic storming, etc.).

The importance of creating situations that encourage students to think independently, create new ideas, and solve problems is revealed.

It is increasingly important to encourage students not to be afraid to make mistakes, experiment, and bring their ideas to life [4].

4. Optimization of the evaluation system:

The results of international assessment studies indicate the need to develop criteria and indicators for evaluating creative thinking (novelty, originality, expediency, technical implementation, etc.).

The expediency of using rubrics and rating scales to evaluate students' creative work is determined.

The importance of giving students the opportunity to evaluate their work and express their opinions is increasing.

The necessity of using the assessment results to improve the educational process is determined [5].

5. Professional development of teachers:

The results of international assessment studies indicate the need to train teachers in methods of developing creative thinking and assessment methods.

The importance of familiarizing teachers with the results of international assessment studies is increasing.

It identifies the need for teachers to share their experiences and collaborate.

6. Strengthening parental cooperation:

The results of international assessment studies show the need to inform parents about the importance of developing students' creative thinking.

The importance of involving parents in the creative work of students is increasing.

The necessity of educating parents on ways to stimulate students' creative abilities is revealed [6].

International assessment studies, in particular PISA, TIMSS and PIRLS, provide an important methodological basis for the development of this ability.

1. The impact of international assessment studies on creative thinking

International studies assess not only the level of knowledge of students, but also their thinking abilities. For example:



PISA-measures students' ability to think critically and solve problems. The PISA 2022 tests also included a special assessment of creative thinking.

TIMSS-determines the level of independent thinking of students using research-based questions.

PIRLS (Progress in International Reading Literacy Study) – measures the reading literacy of elementary school students.

2. Methodological foundations of the development of creative thinking

The following methodological approaches are important for the formation of creative thinking based on international assessment studies:

a) *Problem-based learning* - encourages students to think creatively by asking open-ended questions and problems. For example, the “real-world problem solving” assignments in PISA tests are an example of this [7].

b) *develop divergent thinking.*

Divergent thinking is the ability to look for different and original solutions, deviating from conventional or standard approaches to solving problems or generating ideas. This mindset is associated with creativity, flexibility, and innovation. For example, an example of divergent thinking is the search for diverse, unusual, and creative solutions when solving a problem, rather than searching for a single answer (convergent thinking). This method plays an important role in generating new ideas in literature, art, science, and business.

The main aspects of divergent thinking:

Freedom – to think with any thought, without boundaries.

Multivariance means offering not one, but several solutions.

Originality is the development of unusual and creative approaches.

Flexibility is the ability to think and adapt from different angles. This type of thinking helps to solve creative problems, develop innovative business ideas and find a new approach to life in general. Giving students the opportunity to develop multiple solutions to the same problem [8]. "If you were in such a situation, what decision would you make? give tasks like".

c) *interactive and project-based approach*

Providing students with the opportunity to independently conduct research and prepare creative projects.

For example, the development of creative solutions to environmental problems.

d) *Using digital technologies and creative platforms:*

Involve students in working with STEM projects and virtual labs. For example, PISA assignments contain questions about solving problems in a digital environment.

3. Integration of international assessment research results into education:

By analyzing the results of international assessment studies, teachers can orient curricula towards creative thinking. It can enhance the use of problematic situations and real-world tasks in the education system.

It can improve the student assessment system for creative competencies [9].

The importance of the methodology of using international assessment studies in the development of cognitive competence of students is very great. Because international studies make it possible to analyze the knowledge, skills and competencies of students on a global scale. The main aspects of this technique are:

1. The role of international assessment studies:



PISA (Program for International Students) - evaluates the literacy level of 15-year-old students (in reading, mathematics and science).

TIMSS (Trends in International Mathematics and Science Study) – evaluates the academic performance of 4th and 8th grade students in mathematics and natural sciences.

PIRLS (Progress in International Reading Literacy Study) – measures the reading literacy of elementary school students.

2. The importance of the methodology of using international assessment research in the development of cognitive competence of students:

Develop analytical thinking: Helps students develop skills to solve real-life problems.

Improving the quality of education: makes it possible to bring the national education system in line with international standards [5-6].

Implementation of innovative approaches: serves to improve the functional literacy of students.

Optimization of the educational process: allows teachers to use international experience to improve teaching methods.

3. Methodological approaches to the use of international assessment studies in the development of cognitive competence of students:

Assessment by means of test tasks: integration of international test systems into the national program [7].

Contextual analysis: an analysis of the factors influencing student outcomes.

Contextual analysis is a method of studying a text, phenomenon, or information in a broader context, that is, in relation to its historical, cultural, social, or economic conditions. This analysis is used in various fields and helps to fully understand the meaning or impact [8].

The main aspects of contextual analysis:

Historical context is the study of the historical conditions of the time when an event or text was created.

Cultural context is an analysis of the relationship of a phenomenon with culture, traditions and values.

Social context is the consideration of political, economic and social factors in society.

Language and style is an analysis of the words and styles used to express a text or phenomenon.

Interactive teaching methods: creating problem situations to develop students' independent thinking.

The use of this methodology in the educational process serves to increase the global competitiveness of students and ensure their future success.

Recommendations on the development of a methodology for using international assessment studies in the development of cognitive competence of students:

Participation in international assessment studies and systematic analysis of their results [9].

Development and implementation of measures aimed at improving the education system based on the information received.

Development and implementation of government programs aimed at developing creative thinking.

Organization of courses aimed at improving the skills of teachers in the development of creative thinking.

Creating conditions for the development of creative thinking in educational institutions (creative laboratories, workshops, clubs, etc.).

Developing specific criteria and indicators for evaluating creative thinking.



Involvement of parents in the development of students' creative abilities.

Study and popularization of international experience in the development of creative thinking.

These recommendations help to effectively use international assessment studies to develop students' creative thinking skills.

In **conclusion**, it can be said that the methodological importance of developing students' creative thinking skills based on international assessment studies is great. The results of these studies contribute to the diagnosis of the educational process, improvement of educational programs, modernization of teaching methods, optimization of the assessment system, professional development of teachers, strengthening cooperation with parents.

International assessment studies are an effective tool not only for assessing students' knowledge, but also for developing their creative thinking skills. By adopting innovative approaches to teaching methods, students can become creative and independent thinkers.

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