EXCELLENCIA
INTERNATIONAL MULTI-DISCIPLINARY JOURNAL OF EDUCATION
Volume 02, Issue 10, 2024 ISSN (E): 2994-9521

Technology to Improve Students' Creative Thinking Based On an International Assessment Program

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Annotation:

This article describes the work done in PISA 2022 to further enhance and develop students' creative thinking, the main purpose, importance, specific limitations of creative thinking and the personal factors that shape creative thinking.

Keywords: Creative thinking, creative, written, visual expressions, convergent, divergent thinking.

The PISA 2022 survey is also planned to be conducted in Uzbekistan in the international assessment program. It aims to increase students ’creative thinking in order to participate in the program. PISA 2022 research focuses only on the creative thinking processes expected of 15-year-old students. This international project aims not only to identify creative individuals, but also to describe students' ability to think creatively in search and expression, and how this ability relates to teaching approaches, school activities or other features of the education system.

The main goal of the PISA international survey is to provide students with international comparative information on creative thinking skills that have a clear impact on educational policy and pedagogy. Therefore, the intended creative thinking skill is formed through learning, the various possibilities of creative thinking skill in the learning process should be clearly demonstrated and linked to the students ’mastery in the assessment tasks, The content areas covered in the assessment are closely related to the subjects taught in general secondary schools, the test assignments are close to the activities performed by students both in the classroom and outside the classroom, while the creative must be reliable enough to ensure success and achievement.

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The main importance of education is to equip students with the skills and abilities they need to succeed in society. Creative thinking provides today's youth with the competencies they need to thrive. Helps school students discover and develop their abilities. The importance of creative thinking is that the introduction of creative thinking assessment in international research supports positive changes in education policy and pedagogy. Provides reliable, practical, and legal assessment tools that allow you to make evidence-based decisions.

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Gathering information on a number of factors of creative thinking in PISA research is complex, but, at the same time, one of the tasks that can be accomplished. The assessment of students' creative thinking in the PISA program consists of two parts, tests and general information. In the tests given in the research, students are given information at a level that forms the process of creative thinking while working with the tasks needed to generate, evaluate and improve feedback. General information is based on other factors related to students' creative thinking skills, including creative approaches (openness, purposefulness, and strong confidence), as well as in-class and out-of-class perceptions of the school environment. It is supplemented by indicators of active participation in the elections. What is creative thinking?

The concept of formulating, evaluating, and refining ideas that effectively express students 'imaginations, motivate them to learn, and guide them to find original and effective solutions.

Have students express their attitudes toward new ideas and continue to generate ideas until the expected outcome is achieved.

The tests reduce the importance of students 'innate ability and place great emphasis on variable abilities that allow them to think creatively.

In the assessment process, some specific factors of creative thinking are better covered than others. For example, because the team approach skills are a factor in generating knowledge in the learning process (although some test items assess and improve students' teamwork skills), there are organizational and technical challenges in ensuring students work in a team. Given that, PISA studies do not directly assess students 'ability to think collectively and collectively. However, in order to further improve the process of assessing students 'creative thinking in the future, teamwork skills are recognized in this study as the most important specific factor of students' creative thinking in the educational process.

The formation of creative thinking in students is divided into several areas. The available literature suggests that it is better to cover creative thinking. Nevertheless, some of the practical and logical constraints placed on PISA research serve as an important foundation for the principles included in the PISA 2022 international program that assesses students 'creative thinking.

The first restriction is related to the age of the students taking the test. Although students of the age covered by the PISA survey (15-year-olds) have a limited amount of knowledge and experience in a wide range of fields, the tasks selected for assessment can be mastered by a large number of students around the world (drawing, such as writing or problem solving) should be based on knowledge and experience. The assessment area (and related assignments) should also reflect the real-world demonstration of creative thinking skills that 15-year-olds can acquire.

The second limitation is the time norms set aside for testing. According to the current requirements set out in the PISA assessment program, students take one-hour creative thinking tests. This means that the scope of assessment assignments is limited in order to ensure that sufficient data are collected for each area. Because PISA research focuses on assessing students' knowledge across countries rather than individually, it can use a repetitive test method to help students complete different tasks on different topics (some may cover more than one topic). . However, in each topic section, sufficient time is allocated to complete the assignments on each topic in order to ensure a reliable assessment of students 'mastery across the country.

The third limitation is the need to use tests that test students 'creative thinking within the standard of the PISA assessment platform. PISA test assignments are checked using standard computers that are not connected to the Internet and the monitor is not touch-sensitive. This task platform includes a range of tasks, answer options, including multiple choice questions, text input, tests where you have to choose one of the suggested answer options, dialog interfaces (which can be read by pressing a button inside a text or image), and consisting of interactive drawings and graphs. In the process of developing this assessment program, it was possible to add new functionalities such as a toolbar to draw on the assignment platform, so great attention was paid to the platform's technical capabilities in selecting the topics given in the assessment program and creating assignments.

Taking into account these basic limitations and relying on the literature in the field of creativity at different levels, PISA 2022 International Student Assessment of Creative Thinking covers two broad thematic areas: "creative expression, knowledge generation and problem solving". "Creative expression" is used in creative thinking to refer to situations in which a person's inner world is interacted with others. This thematic content area is also divided into "written expression" and "visual expression". Uniqueness, aesthetics, imagination and an impressive moving response mainly characterize creative activity in these areas. Instead, the creative approach of "generating knowledge and making the problem creative yet" (not limited to just one solution) involves the functional use of creative thinking skills related to the study of open-ended questions or problems. It is divided into categories such as "solving a scientific problem" and "solving a social problem". In these categories, a creative approach means a "better end," so it is characterized by finding unique, innovative, effective, and purposeful solutions.

There are also personal factors that shape creative thinking. These are:

1. Mental habits
2. Openness to learning experiences and learning;
3. Training in the field of knowledge;
4. Self-confidence in goal-orientation and creativity.

Mental skills include convergent and divergent thinking.

Convergent thinking-is the ability to apply, identify, and make decisions based on collected data, using traditional and logical research strategies to find a solution to a problem.

Divergent thinking-is about finding new, unusual, or surprising answers to problems that have not been suggested before.

Openness to learning experiences and gaining knowledge. Many creative people are passionate about thinking and have the qualities of openness to "learning experiences" and "learning".

Knowledge training. The more knowledge a person has and the better he or she understands the interconnectedness of different information in the field, the greater the chance of discovering creative ideas.

Self-confidence in goal orientation and creativity. Creative people are people who "can find the desire to strive." One of the leading qualities inherent in creative people is patience.

If certain forms of the creative approach are culturally different from each other, and if such differences are observed in the field of education and in the subjects taught around the world, then there is no difference in the mastery of students in these areas of activity. The differences are noticeable. By encouraging students to work in more than one field of activity, it will be possible to identify gaps and strengths in the development of creative thinking skills across countries. The data collected provide important insights into how creative thinking skills should be taught in schools in a variety of areas, as well as ways for students to express their opinions and focus on finding an independent solution to a particular problem. identifies differences.

Thus, a lot of work is being done to increase the creative thinking of students to participate in the PISA 2022 program shadi.

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