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PRINCIPLES USED TO ENHANCE STUDENTS' CREATIVE THINKING IN THE FRAMEWORK OF THE PISA INTERNATIONAL ASSESSMENT PROGRAM

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Annotation
The article describes the principles used in the process of selection, testing, application, development of test items in the PISA 2022 program, as well as criteria for creative thinking and evaluation about.

Keywords: validity, reliability, motivation, activity, inactivity, interactive simulation, competency model

Introduction

By his own definition, the end result of the creative thinking process is not known from the beginning. Test takers should therefore be encouraged to take full advantage of their opportunities in the work process and to be creatively active in real life. If we take the field of art as an example, it means finding the necessary equipment, useful materials and a source of inspiration to take advantage of the opportunity. Scientists also use internal capabilities to observe a given event or environment, using many methods to determine patterns and relationships between unexpected events and variable values.

PISA International Assessment Surveys, which assess students' creative thinking internationally, ask students to create different variants of the same type of product, ask open-ended questions that do not have answers (for example, templates, shapes, and drawing skills. tools) allows students to take advantage of their internal capabilities by helping them use specific tools to work. Thus, some research assignments are located in simulated sections, and by interacting in their online environment, students experiment with a variety of tools in identifying relationships between templates, basic models, and variable sizes.

While the PISA International Assessment Program tests to develop students 'creative thinking, they are designed to develop students' reasoning, assessment, and refinement skills. 'has no effect on students' creative thinking.

Because PISA's international assessment program studies have limited time norms to assess students' creative thinking skills, the sections and assignments are designed to gather enough information to demonstrate individual aspects of the competency model. 'tibor focused. However, in the process of developing the test (as a stimulus for the test), students' mastery indicators depend on their field and task-related knowledge and skills, as well as the main medium that reflects their creative thinking and attention will be paid to the motivating aspects. Taking into account these changes that affect the mastery indicators will allow the validity of the claims made on the test results, the interpretation of the test results and, finally, the introduction of the evaluation results.

Field and task-specific knowledge and skills are key areas that test students 'creative thinking. To assess creative thinking in terms of validity and reliability, test assignments should be relevant to what the students have learned and to the activities that take place within or outside of school; test assignments designed for students should not consist of abstract assignments in which their primary knowledge and skills are of no importance. However, in test assignments, students 'primary knowledge is not a key factor in determining their mastery performance. It has been proven in practice that if the condition of an assignment is too complex, it prevents students from striving to be creative because they do not understand what they need to do or what they can do.

Because of the emphasis on motivation, which is the foundation of creative thinking in various aspects of creativity, motivational complementary exercises are of great importance for the student to complete assignments effectively and master the tasks related to creative thinking. The impact of motivation on task performance is important for all aspects of the ability to advance creative ideas: including in science-based assignments, encouraging students to explore through assignments and persevere until they find a solution or answer. It also activates students 'imaginative abilities and helps them to perform their written tasks brilliantly to help them demonstrate their creative skills. allows you to specify. The ability to find effective and innovative solutions to a problem in social problem-solving topics is closely related to the desire to learn more about a given problem or the interests of others, and to encourage these students to come up with new ideas. or make sure they can make some positive changes in society by making forward-looking plans.

Ignoring these same mechanisms will result in a decline in test results for thinking skills that reflect students 'true creative thinking potentials, as students lose motivation or interest in the task. As with other life experiences, when people interacted with each other using technologies such as computer testing, online shopping, internet search, and game play, this activity was understood as a four-step process: goal of activity, period of continuous activity, inactivity and re-activation.

One way to apply this concept to PISA research is to monitor the level of activity of students in the process of completing assignments. For example, suppose students who are recommended to complete an assignment or who devote all their time to completing an assignment (or who are willing to volunteer for another assignment once they have achieved the expected result) show great results in completing the assignment. Especially if there is no ready-made data that can be reviewed quickly, it requires experience and testing practice to assess students 'performance levels in this way; for example, the fact that a student spends less time than assigned to complete an assignment indicates that, in some cases, his or her intellectual potential is well developed.

In all themed sections and assignments, test takers may find it easy to try new things and use alternatives (e.g., use the "cancel" button on the toolbar to easily fix bugs). It is especially important that the dashboard is designed to be "self-explanatory" so that test takers can clearly see what they are doing during the testing process. Finally, it should be fun to use interactive tools: if students spend a lot of time learning how to use the toolbar, they will use their cognitive abilities less than expected in creative thinking processes.

It is worthwhile to find out how students 'creative thinking depends on their experiential skills. As a method of determining the level of activity of students, the indicators that reflect their skills of gaining experience are achieved by considering the norms of how a computer platform behaves. It is difficult for them to analyze or interpret data on the level of interaction in the test environment, and the competency model cannot determine the skills to gain experience. However, in open-ended and computer-aided assignments, information about students 'mastery skills can be retrieved and made available to a wider audience in order to accelerate research on students' knowledge experiences and shortcomings.

In PISA 2022, an international program that assesses students' creative thinking, such shortcomings stem from empirical conclusions: (a) taking into account the cultural specificity of different participating countries in terms of conceptualization, practicality, dimensionality and specificity of the test structure the similarity of their creative thinking; (b) students are already familiar with the task format according to

the required answer option (e.g. in interactive simulation tasks); (c) the comprehensibility of the proposed stimuli, the interpretation of the task instructions, and the problematic nature of the tasks according to the level of knowledge previously acquired (e.g., the use of images or words and phrases used in oral presentation). Ignoring these same aspects in the process of testing the validity of tests leads to testing inconsistencies and, finally, to structural and dimensional disparities across the groups whose knowledge is being tested.

In order to ensure the validity of creative thinking, to ensure that creative thinking is widely covered in all participating countries, the following principles have been used or are expected to be applied in the development of test materials, taking into account intra-country and intergroup differences:

1) Intercultural validity of test materials: the intended test materials should be equally understandable to all participating countries and groups. Experts in creative thinking assessment will review the test materials in several stages in a program to assess the legitimacy of the test materials across different participating countries and groups. This allows the identification of cultural and linguistic features that are not conducive to creative thinking at an early stage in the development of test materials. It also reviews test materials in several stages so that all participating countries do not come to the surface of disparities within different participating countries.

2) Cognitive labs: monitors how familiar students are with the test materials and the expected results. Experienced test-making professionals conducted cognitive experimentation sessions with students in three countries. As part of the thinking session, students eligible for the PISA survey will be asked cognitive and non-cognitive questions, the misunderstandings or difficulties encountered in the guidelines or stimulus material will be pointed out, and their thinking processes will be explained when answering the questions was given.

3) Small-scale validation experiments: Experiments on the validity of test materials are carried out simultaneously with the general test design process to control how the existing test materials work in the test environment. The analysis of the data obtained from the students allows to identify test assignments that do not give the expected results and provides information on the coding of answers and positive changes in the test material based on the evidence. The objectives and methodology set out by the contractors and the Secretariat of the Organization for Economic Co-operation and Development (OECD) in the preparation of the PISA Creative Thinking Assessment Program are detailed in a separate section of the experiments on the suitability of test materials for PISA 2022 research.

4) Translation Comments: Consideration of the translation issue in assignment scenarios or instructions. The Secretariat of the Organization for Economic Co-operation and Development (OECD) engages test materials to ensure that the content of key PISA research assessments is translated into a number of languages. In translation, the cultural and linguistic aspects of the test materials should be equally coordinated for each participating country. This translation process requires a thorough understanding of the criteria for creative thinking and evaluation. Wire-related quality assurance mechanisms for test materials require that all specific features of the application organizational structure be taken into account.

5) Experimental test: the aim is to evaluate a large number of participants from the selected audience. This important step in the process of preparing test materials provides an opportunity to conduct large-scale test experiments on the organizational structure of materials and verification of the suitability of tasks before the completion of the main tasks. This event will be held in all participating countries, and test assignments that are not found to be sufficiently culturally and linguistically appropriate will be removed as a result of statistical analysis. Data analysis is concerned with the organizational structure of materials and the appropriateness and validity of the evaluation procedure, with specific distinctive functions of tasks within and between countries. Intergroup equivalence, equivalence in assessment, and equivalence analysis in the structure of test materials are usually performed on the basis of data. Multi-group confirmatory factor analysis (MGGFA) has been proposed by Task Performance Theory (IRT). The practice of Task Difference (DIF) and Multidimensional Forms (MDS) is one of the important ways to ensure the inviolability of evaluation criteria. Due to the strict deadline for PISA surveys, it will not be possible to enter new assignments after this stage, and no changes will be made to the content of existing test assignments. discarded.

Conclusion

It can be said that this approach to the cultural and linguistic validity of test assignments also includes structural equivalence in addition to linguistic equivalence. This approach uses a generalization method: a group of experts work together and separately to determine whether the concepts, words, expressions, and tools related to the test materials are culturally, psychologically, and linguistically equivalent in the languages being translated.

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