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### **HOW RUSSIAN 15-YEAR-OLDS COPE WITH TRADITIONAL AND NEW READING TASKS (BASED ON THE ANALYSIS OF THE RESULTS OF PISA-2018)**

*The article presents the results of an in-depth analysis of the results of the Russian participants of the international comparative study PISA-2018 in the field of reading literacy. The article considers the dynamics of results in different groups of students and different groups of reading skills, identifies possible reasons for the decline in the results of Russian participants in the field of reading in the last cycle of the study and the direction of work.*

**Keywords:** *assessment of reading literacy, PISA, dynamics of results, directions of improvement.*

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*Koval T. V., Dyukova S. E., Kolachev N. I.*

### **COMPARATIVE ANALYSIS OF THE COMPETENCE OF RUSSIAN GIRLS AND BOYS (BASED ON THE RESULTS OF PISA 2018)**

*The article presents a continuation of the gender aspects' analysis of the results obtained by the international study of the quality of education PISA 2018 in the field of functional literacy "global competences", characterizes the attitudes of the international study in analyzing the results from a gender perspective. Focusing on the results of Russian boys and girls, the authors analyze, compare and interpret the data of the cognitive test and questionnaires of 15-year-old students. They consider the correlation between the results for "global competences" and the main areas of functional literacy as one of the explanations for the discrepancy in the results of the boys' and girls' cognitive test. The analysis of the survey results reveals the features and confirms the differences that are reflected in the socialization of boys and girls/ The research shows the correlation of their views and relations with the gender-role standards of our society.*

*When interpreting the results of the international study, the authors show the possibilities of their use in the practice of an educational*

*organization for the formation of global competence and determine the directions for further theoretical research.*

**Keywords:** *gender approach, PISA, functional literacy, global competence, education quality assessment.*

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*Kovaleva G. S., Rutkovskaya E. L., Kolachev N. I., Baranova V. Yu.*

## **THE DYNAMICS IN RESULTS OF ASSESSING THE FINANCIAL LITERACY OF THE RUSSIAN STUDENTS IN THE INTERNATIONAL PISA STUDY**

*The article presents the main results of Russian students in comparison with the results of students from other countries who participated in the PISA-financial Literacy study. Attention is focused on the dynamics of the results of Russian students in terms of financial literacy levels with a meaningful description of the levels according to the concept of the international study. A visual comparison of the results of 2012, 2015 and 2018 is given. Special attention is paid to the results on the levels of financial literacy in educational organizations in Russia. Reflections on the reasons for the difficulties of Russian students are given.*

**Keywords:** *financial literacy, financial literacy level, PISA (Programme for International Student Assessment), evaluation area, results of Russian students.*

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*Titovets T. E.*

## **FACTORS CORRELATING WITH HIGH RESULTS OF THE PISA-2018 (BELARUSIAN EXPERIENCE IN COMPARISON WITH OTHER COUNTRIES)**

*The objectives of the Programme for international student assessment are not confined to determining the level of reading, mathematical, and natural science literacy of students from different countries, but also imply identification of common factors for different countries and specific for a particular country factor that correlate with the test results and enable constructive conclusions for educational policy based on the data obtained. As a result of the analysis of statistical data obtained during the survey of Belarusian participants of the PISA-2018 international*

*testing in comparison with the data of participants from other countries, the author identified factors that show a positive correlation with the test results and can be taken into account when developing strategies for the modernization of the general secondary education system. The cluster of factors that have a close correlation with the test results in the Republic of Belarus includes growth mindset, skipping classes by students, teacher enthusiasm, bullying, student cooperation. A cluster of factors that have a weak correlation with the test results includes discipline in the classroom, pedagogical support, a positive attitude of students to competition, self-efficacy of students, well-being and sense of belonging. In each country, there is a group of nationally specific factors that are more strongly correlated with the academic achievements of students and which are the "competitive advantage" of its educational system. The stable positive dynamics of the testing results of some countries in comparison with the results of previous years is provided not so much by the modification of the content of educational programs, but by the strengthening of nationally specific and universal factors that correlate with academic achievements.*

**Keywords:** *the PISA international testing, factor correlation, educational environment, quality monitoring.*

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*Rutkovskaya E. L., Polovnikova A. V., Kolachev N. I.*

## **STUDYING THE DIFFERENCES IN THE LEVEL OF FINANCIAL LITERACY OF 15-YEAR-OLD STUDENTS OF 9 REGIONS OF THE PROJECT OF THE MINISTRY OF FINANCE AND THE GENERAL POPULATION OF 15-YEAR-OLD STUDENTS OF RUSSIA**

*The article introduces readers to a feature of the 2018 Financial Literacy study, which included two samples and two groups of results: results for the Russian Federation in general and results for a sample of fifteen-year-old students from regions participating in the Ministry of Finance Project "Promoting Financial Literacy and the Development of Financial Education in the Russian Federation". The paper demonstrates the specifics of students' task performance, examines differences in their performance as compared to leading countries and countries with modest academic results in PISA. In addition, the test results are analyzed through the socio-demographic characteristics of the students.*

*It is shown that students from the regions of the Project demonstrate achievements comparable to the Russian average, and even exceed them in some tasks. The results of Russian students from secondary vocational education (SVE) institutions are significantly higher than the average result of SVE students from OECD countries. For the sample of 9 regions, this difference is even more pronounced. The scores of students in the 9 regions of the Project from localities with less than 3,000 inhabitants are lower than the scores of their peers from the same localities in the OECD and Russia. The results of students in 9 regions from small and medium-sized cities exceed the results of their peers from similar cities in Russia but still lag behind OECD countries. The achievements of students in 9 regions from large cities are superior to both Russia and OECD countries.*

*The results of the assessment conducted on a sample of the Project regions make it possible to evaluate the importance of educational practices implemented in the Project regions in the context of their influence on the financial literacy attainments.*

**Keywords:** *financial literacy, financial literacy level, PISA (Programme for International Student Assessment), Project of the Ministry of Finance of Russia, evaluation area, results of Russian students.*

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*Kovaleva G. S., Krasnyanskaya K. A., Pentin A. Yu., Sadovshchikova O. I.*

## **WHAT NEW RESULTS WERE OBTAINED IN THE FRAMEWORK OF THE INTERNATIONAL STUDY TIMSS-2019**

*The article introduces readers to the results of the International Monitoring Study of the Quality of Mathematical and Science Education TIMSS-2019 in comparison with the results of previous study cycles. Special attention is paid to the dynamics of changes in benchmarking achievement levels, content areas and types of cognitive activity. The analytic data of the transition to computer testing in comparison with the traditional paper format of the test are presented. Changes in the results of primary school students during the transition to basic school are considered, the problem of studying the cohort effect is posed.*

**Keywords:** *international monitoring study of the quality of general education, TIMSS study, mathematical and science education, content and types of cognitive activity, results of students in grades 4 and 8, cohort effect, computer testing.*

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## THE MAIN INNOVATIONS OF THE INTERNATIONAL PROGRAMME PISA-2021–2022 FOR THE ASSESSMENT OF MATHEMATICAL LITERACY CARRIED OUT IN THE FORM OF COMPUTER TESTING

*This article is a continuation of the research of the concept of mathematical literacy, which began in the articles [3, p.59]. The article will reveal the main innovations of the international programme PISA-2021–2022, conducted in the form of computer-based testing, to assess mathematical literacy. There are described the types of electronic instruments for use in tasks in a computer format, their features, the specifics of development and implementation by students, and possible areas of application. Examples of tasks using the described instruments are given.*

**Keywords:** *functional mathematical literacy, international programme PISA (Programme for International Student Assessment), basic general education, computer testing.*

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*Krasnyanskaya K. A., Rydze O. A.*

## INNOVATIVE MATHEMATICAL ITEMS FOR PRIMARY SCHOOL IN TIMSS INTERNATIONAL STUDY

*The article presents a study related to the description of the features and approaches to the development of innovative mathematics items for fourth grade students. These items are aimed at assessing the success of the formation of those knowledge and skills, which is difficult to measure using the traditional paper-and-pencil approach. They are offered within problem situations that model real-world contexts and scientific experiments. The success of fulfillment these tasks is ensured not only by the use of the material studied in mathematics lessons, but also by the integration of mathematical knowledge, cognitive abilities, universal educational actions, including work with an electronic device [3; 4].*

*The purpose of presenting these tasks is to assess the ability of students to solve educational or practical problems or to conduct research and formulate a conclusion using computer technologies.*

*We believe that the description of the features of innovative mathematical items and the approaches to their development, presented in*

*the article, will help teachers and the authors of textbooks and teaching aids develop tasks that contribute to the formation of educational actions and skills that characterize the ability of students to solve various problems by means of mathematics.*

**Keywords:** *innovative items-problems, international study TIMSS2019, approaches to the development of innovative items.*

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*Loginova O. B.*

## **SPECIFIC FEATURES OF THE TASKS FOR THE FORMATION AND EVALUATION OF CREATIVE THINKING**

*The article discusses the distinctive features of creative thinking learning tasks and criteria for evaluating the quality of these tasks based on the results of the analysis of the conceptual model, the composition and structure of creative thinking learning tasks in PISA.*

*The research is focused on the following research question: How do the differences in the assignment of two groups of learning tasks — traditional academic and functional literacy tasks — affect the features of those tasks: the principles of their construction, their structure, content and forms of presentation?*

*Finding out the answer to this question is important for the transformation of teaching learning practice, updating the bank of learning tasks and, as a result, achieving higher results in functional literacy.*

**Keywords:** *functional literacy, creative thinking, content model of creative thinking, competency model of creative thinking, PISA, criteria for evaluating the quality of learning tasks, formal knowledge.*

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*Kopoteva G. L., Logvinova I. M.*

## **MODERN FORMS AND METHODS OF TEACHING TEACHERS TO FORM FUNCTIONAL LITERACY OF SCHOOLCHILDREN USING THE RESULTS OF INTERNATIONAL RESEARCH ON THE QUALITY OF GENERAL EDUCATION**

*The article is devoted to the description of the forms of organization of the educational process in the system of additional professional education of teachers, which activate the process of mastering the skills of teachers to analyze the results of international studies on the quality of general*

*education PIRLS, PISA and to form the functional literacy of schoolchildren. The analysis of the literature on active forms and methods of organizing educational classes for adults, including in remote form, was carried out, and the experience of conducting advanced training courses of the Institute of Educational Development Strategy of the RAO was also considered.*

**Keywords:** *remote practice-oriented forms of organizing the educational process, an inductive professional development program, a competence model for the development of teacher professionalism, contextual learning, a competence-contextual learning format (KKFO), methodological teaching systems with predetermined properties, functional literacy, international studies of the quality of education PIRLS, PISA.*

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*Dyukova S. E., Kovaleva G. S., Rutkovskaya E. L., Yakovleva S. G.*

### **THE USAGE OF PEDAGOGICAL PRACTICES OF INTERNATIONAL COMPARATIVE STUDIES COUNTRIES-LEADERS IN THE PROFESSIONAL DEVELOPMENT OF TEACHERS IN THE CONTEXT OF THE FORMATION OF FUNCTIONAL LITERACY**

*The article analyzes how knowledge of the results of international research, pedagogical practices of the leading countries makes it possible to increase efficiency of pedagogical process. The information on the formation and evaluation of functional literacy is presented on the basis of international methodological seminars held jointly by the OECD and ISRO RAO within the framework of several topics: the development of problem-solving skills, the development of creative thinking, learning in cooperation, formative assessment. The possibilities of effective use of seminar materials at advanced training courses in order to develop the competencies of teachers in the formation of functional literacy are shown.*

**Keywords:** *functional literacy, skills of the XXI century, PISA, educational process, pedagogical practices, problem solving, formative assessment, communication and cooperation, creative thinking, professional development of teachers.*

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