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METHODOLOGY OF ORGANIZING LESSONS BASED ON THE PIRLS ASSESSMENT SYSTEM (IN THE CASE OF GRADES 3–4)

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Abstract: This article is aimed at strengthening the methodological system for developing reading and comprehension skills and competencies of 3rd and 4th grade students of primary education based on the criteria of the PIRLS international assessment system. The relevance of the article is expressed in the integration of the requirements of the PIRLS international assessment criteria and the development of logical and critical thinking in students. This article uses methods of theoretical analysis, pedagogical observation, and comparative-methodological modeling. As a result of the research, a system of tasks and lesson scenarios based on the four-level cognitive model of PIRLS for reading literacy lessons in grades 3 and 4 was developed. The benefits of switching from traditional "reproductive" teaching to "metacognitive" methods are substantiated. The methods highlighted in this article increase the efficiency of primary school students' work with PIRLS texts by 20-25%. Methodological recommendations are given for the systematic introduction of PIRLS requirements into primary school textbooks.

Introduction

In the modern education system, increasing students' reading literacy and developing skills for understanding and analyzing texts have become priority tasks. Furthermore, within the "4K" model (Collaboration, Communication, Critical Thinking, and Creativity), the concept of "reading literacy" rises from a simple literal reading process to a complex cognitive activity. The PIRLS (Progress in International Reading Literacy Study) international assessment program is considered the most reliable mechanism for monitoring the reading literacy levels of 4th-grade students in primary education. The efforts of the Republic of Uzbekistan in the field of education demand the adaptation of teaching materials for primary school students to the PIRLS system based on the international standardization of the national curriculum. This is because the 4th grade is a vital "turning point" in the reading period; at this stage, students must not only receive information from the text but also be able to analyze and synthesize that information based on their own knowledge and skills.

Fundamental theories regarding the methodology of text comprehension and reading have been developed internationally by Ina V.S. Mullis and Michael O. Martin (leaders of the TIMSS & PIRLS International Study Center at Boston College), and representatives of cognitive psychology such as J. Piaget and L. Vygotsky. However, methodologies for integrating the cognitive processes of the PIRLS international assessment system into classroom activities have not yet been sufficiently interpreted in the education system. In some textbooks, certain tasks still maintain a reproductive character—finding ready-made answers from the text—leaving methodological gaps in identifying hidden meanings and critical evaluation skills.

The main objective of this article is to develop a methodology for enhancing students' text comprehension strategies based on PIRLS requirements in primary school reading literacy lessons. To achieve this goal, the following tasks were defined:

To analyze the pedagogical foundations of the PIRLS international assessment system based on cognitive psychology.

To study text-based tasks in primary school textbooks based on international standard criteria.

Literature Review and Methods

Theories of reading literacy and cognitive development, as well as text comprehension and interpretation, hold a fundamental place in pedagogical psychology. According to J. Piaget's theory of cognitive development, logical thinking begins to take shape in 3rd and 4th-grade students. L. Vygotsky's "Zone of Proximal Development" (ZPD) concept serves to ensure proportionality during the independent analysis required in the development of PIRLS tasks.

The PIRLS assessment system, developed by founders I.V. Mullis and M.O. Martin, represents text comprehension as a four-level cognitive process. As Peter Afflerbach noted, the modern student should not just be a "reader of text" but a subject who "constructs information." In Western European experience, reading literacy is viewed as a basic competency for all subjects. Among Uzbek scholars, R. Safarova, M. Jumayev, and K. Qosimov have conducted significant work on developing primary education methodology. However, in national pedagogy, the issues of "critical evaluation" of text and "metacognitive monitoring" still lack a sufficient experimental basis.

The following methodological approaches are used to determine the levels of increasing reading literacy among primary school students:

Comparative Analysis: Text-based tasks in primary school "Reading Literacy" textbooks in Uzbekistan are compared with PIRLS texts and tasks. The cognitive levels of these tasks (reproductive, productive, and creative processes) are analyzed in percentages.

Pedagogical Modeling: An "Interactive Text Analysis" method compatible with PIRLS requirements was developed. In this method, working on the text is divided into three stages: pre-reading, while-reading, and post-reading, with specific cognitive processes selected for each stage.

Content Analysis: The suitability of literary and scientific texts in textbooks, their vocabulary content, and their levels of complexity are studied.

Experimental Method (Project Method): Instead of traditional question-and-answer sessions, "Problem-based Reading" and "Evidence-based Response" methods are being tested in selected pilot classes.

Empirical data was collected from the lesson processes and text analysis results of students in various pilot schools across Uzbekistan. A striking example is the 3rd "A" class students at General Education School No. 5 in Namangan City, Namangan Region, who are already working with PIRLS texts. The class teacher, M. Qodirova, organizes Reading Literacy lessons not in a traditional format, but in strict accordance with PIRLS requirements. Students are taught to think independently and provide critical answers not only in reading literacy but across all subjects.

Results

The results of the comparative-typological analysis and pedagogical experiment showed significant qualitative changes in the reading literacy indicators of primary school students. The results from students at School No. 5 in Namangan City served as the primary basis.

The results were systematized according to the following main directions:

1. Analysis of Cognitive Levels of Tasks in Textbooks: A content analysis of text tasks in 3rd and 4th-grade Reading Literacy textbooks revealed that 55% of them are still reproductive in

nature (retrieving ready-made answers). Based on PIRLS requirements, these tasks were improved in the following proportions:

Direct retrieval of information: 15% (previously 50%)
Making straightforward inferences: 20%
Interpretation and integration: 35%
Critical evaluation of content and form: 30%

2. Dynamics of Metacognitive Skill Growth: As a result of applying "Interactive Text Analysis" in experimental groups, the efficiency of students' work on texts was 25% higher compared to control groups. Specifically, the skills of 3rd-grade students in "identifying hidden meanings" grew from 21% at the beginning of the year to 44% by the end of the third quarter.

3. Evidence-Based Responding: In the traditional teaching method, while more than 75% of students answered open-ended questions like "Why did the character act this way?" freely, through PIRLS texts and tasks, students learned to prove their opinions using facts from the text. These indicators among 3rd-grade students recorded results corresponding to the "High" and "Advanced" levels of the PIRLS international assessment system.

Discussion

The obtained results scientifically justify the necessity of transitioning from a traditional system of "simply reading the text" to a system of "cognitive processing of the text" in primary education methodology.

The studied indicators align with L. Vygotsky's "Zone of Proximal Development" and J. Piaget's theory of cognitive development. It was observed that the transition of primary school students from the stage of concrete operations to logical thinking was enhanced through PIRLS texts.

I.V. Mullis and Michael O. Martin (2021) argue that the level of a student's text comprehension depends not only on vocabulary but on the capacity to search for hidden information within the text.[1] The results show that graphs and methodological instructions serve to overcome the "cognitive barriers" students face when confronting texts.

The reading literacy ideas put forward by Uzbek scholars R. Safarova and M. Jumayev were integrated with international PIRLS standards. Unlike traditional methodology, the proposed "Problem-based Reading" method transforms the student from a "passive reader" into an "active reader."

The results indicate that the level of critical evaluation of the text formed logical conclusion-making skills not just in reading literacy, but across all subjects, confirming the importance of the PIRLS assessment system as a cross-curricular competency.

Conclusion

The results demonstrate that organizing reading literacy in all primary grades based on PIRLS international assessment criteria is a strategic necessity for modern education. Scientific-pedagogical conclusions show:

Cognitive Transformation: Transitioning from traditional reproductive teaching methodology to a metacognitive method allows for a 25-30% increase in students' skills for remembering text content, interpreting information, and critical evaluation.

Methodological System Perfection: The four-level cognitive model of PIRLS—retrieving information, making inferences, integrating, and evaluating—serves to develop the logical and critical thinking of primary school students.[1] This system elevates the student from a passive to an active reader level.

National Textbook Integration: The results proved that in merging national curricula with international standards, it is necessary to revise not only the content of the texts but also the system of tasks.

Recommendations

In order to widely implement the results into practice and bring the quality of primary education to an international level, the following methodological recommendations are provided:

To authors of educational programs:

It is recommended to reduce reproductive questions and tasks in primary school "Reading Literacy" textbooks and increase the number of cognitive tasks that are open-ended, require argumentative answers, and explore inter-textual connections.

To the pedagogical personnel training system:

Introduce the system of "Working with PIRLS cognitive methods" into the curriculum of professional development courses and practically teach teachers the three-stage (pre, while, post-reading) approach to working with text.

In organizing classroom activities:

Utilize methodological support techniques effectively in reading literacy lessons. Instead of showing students where to find answers in the textbook, they should be constantly practiced in justifying their thoughts and opinions with facts from the text.

To the assessment mechanism:

In school internal monitoring systems, it is advisable to use cognitive testing systems based on PIRLS criteria rather than just measuring reading speed.

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