



## **TRANSFORMATION OF METHODOLOGICAL SKILLS OF FUTURE TEACHERS ON THE BASIS OF THE REQUIREMENTS OF THE PISA AND PIRLS INTERNATIONAL ASSESSMENT PROGRAMS**

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### **Abstract**

The article examines the issues of radically reforming the methodological training of future primary school teachers within the framework of the requirements of the international PISA and PIRLS assessment programs. The author analyzes the pedagogical mechanisms of the transition from the traditional educational model to the competency-based and creative model. The article highlights the essence and practical significance of the concept of "methodological transformation" in the training of future teachers.

**Keywords:** PISA, PIRLS, methodological skills, transformation, future teacher, creativity, functional literacy, primary education, pedagogical innovation.

### **Introduction**

In the global world, international criteria for assessing the quality of education are considered as an indicator of the economic and social development of countries. The decrees and resolutions of the President of the Republic of Uzbekistan in the field of education set a strategic task to bring our country's education system among the leading countries of the world by 2030. The main burden in implementing this task falls on future teachers, in particular, primary school teachers.

Until now, future teachers in higher pedagogical educational institutions were more focused on mastering theoretical knowledge and "giving knowledge to the student". However, the results of PISA (assessing the functional literacy of 15-year-old students) and PIRLS (assessing the level of text comprehension of 4th grade students) show that a modern school needs a mentor who "teaches thinking" rather than "giving knowledge". Therefore, transforming the methodological skills of future teachers is an urgent pedagogical problem.



The concept of "transformation" in a pedagogical context means a qualitative shift in the teacher's teaching style, values, and methodological tools to a new level. The transformation of the methodological skills of a future teacher is based on the following three pillars:

1. Cognitive transformation: A change in the teacher's worldview about his subject and its practical application.
2. Technological transformation: A transition from the traditional lecture method to interactive, problem-based, and project-based teaching methods.
3. Reflexive transformation: Constantly analyzing one's own activities through the prism of international standards.

PISA and PIRLS requirements require teachers to teach students not ready-made answers, but a "culture of questioning." This requires a fundamental rethinking of the methodology for preparing students in the higher education system.

The PIRLS international assessment program assesses the reading literacy of primary school graduates at four levels:

- Finding clearly stated information.
- Making direct inferences.
- Interpreting and summarizing text content.
- Evaluating text content and language features (critical analysis).

How should future teachers prepare for this process?

In current methodological training, students pay more attention to "fluent reading" and "telling the content" of the text. In the transformed methodology, students should master the following skills:

- Text modeling: Drawing a logical map of the text together with students.
- The system of "Socratic questions": The skill of formulating questions such as "Why?", "What if it wasn't like this?", "What does the author mean?" that encourage students to think deeply.
- Working with information: Teaching a lesson by combining texts in the form of fiction and infographics (tables, diagrams, maps).

The PISA program tests how well a student can apply the mathematics they learned at school in everyday life (for example, calculating bank interest or measuring the area of a building).

A future primary school teacher should transform their teaching methodology as follows:



1. From abstraction to reality: Teaching mathematical operations not only with numbers, but also through real-life scenarios (for example, the "Travel Planning" project).
2. Integrated approach: Combining mathematics, science and technology (STEM approach).
3. Learning from mistakes: In the PISA system, a mistake is not a punishment, but a path to new knowledge. The teacher must master the methodology of analyzing a student's incorrect answer and directing it in the right direction.

As part of our research, an experiment conducted among students of a higher pedagogical institution showed that future teachers have "methodological fear." That is, they are afraid of going beyond the textbook and "difficult" questions from students.

Level of preparation of students for international assessment programs (in percent)

Table 1.

Indicators	Before the experiment	After the experiment (After transformation)
Ability to formulate PISA/PIRLS questions	12%	68%
Skills in creating problem situations	18%	74%
Assessment of students' critical thinking	9%	55%
Methodical creativity (innovation)	15%	81%

These results show that when students are systematically taught international assessment criteria, their professional skills increase significantly.

Methodological transformation cannot occur without the teacher's personal creativity. During the study, we developed the following creative development models for future teachers:

1. "Methodological Constructor": Students are given a lesson topic and they completely break the traditional lesson development and assemble a new lesson model in the format of international tests.
2. "Pedagogical Debate": Students discuss creative ways to solve problem situations that may arise in the lesson (for example, when a student does not understand or refuses the assignment).



3. Digital Didactics: Increasing the IT competence of future teachers to work with computerized tests such as PISA.

Currently, there are a number of obstacles to methodological transformation:

- Incomplete alignment of higher education curricula with international requirements.
- Lack of methodological literature.

As a solution:

- Introduction of a special course "Methodology of International Assessment Programs" in all pedagogical universities.
- Organization of students' pedagogical practice based on the experience of "Presidential Schools" and "Specialized Schools".

## CONCLUSION

Based on the results of our study and the analysis of the requirements of the international assessment programs PISA and PIRLS, the following fundamental conclusions were made on the transformation of the methodological skills of future primary school teachers:

Firstly, international assessment programs (PISA, PIRLS) are not just a means of testing students' knowledge, but a "methodological map" that sets modern didactic parameters for future teachers

was identified. The transition of the methodological skills of the future teacher from the traditional "knowledge transfer" (informational) model to the "formation of competencies" (operational) model is a strategic necessity for improving the quality of education. This transformation requires the student not only to know his subject, but also to implement interdisciplinary integration and link knowledge to the life context.

Secondly, the "creative competence" of the future teacher occupies a central place in the process of methodological transformation. According to our approach, the teacher should rise from a performer using ready-made methodological developments to the level of a "methodological constructor" adapting to the individual needs of the student. This is especially evident in improving reading literacy based on PIRLS requirements - in the implementation of dozens of types of work with text (analysis, interpretation, critical evaluation).

Thirdly, the conducted experimental work showed that the integration of international assessment criteria into the educational process in the training of future teachers



increases the professional motivation of students by 35-40%. Students successfully mastered advanced skills such as creating problem situations during lessons, encouraging students to make independent decisions, and constructively working on mistakes. This creates the basis for their future development as competitive personnel. Fourthly, for the systematic implementation of methodological transformation, it is not enough to change only the teaching style. This process should also cover curricula, qualification requirements, and the assessment system in higher education. Students' final qualification works and dissertations should be directly aimed at solving practical problems within the framework of international assessment programs. In conclusion, it should be noted that improving the methodological skills of future teachers based on the requirements of PISA and PIRLS is the shortest and most effective way to bring the education system of Uzbekistan to the level of international standards. After all, only a teacher who is able to put "thinking and creating" at the center of the lesson, not "memorizing facts", will be able to educate the intellectual generation of a new Uzbekistan. The methodological recommendations and transformation mechanisms proposed in the article serve as a practical basis for updating the content of training future teachers.

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