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Principles of Improving The Methodological Training of Future Primary Teachers Based on The International Assessment Program

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Abstract: This article analyzes the content of international assessment programs, in particular the PIRLS (Progress in International Reading Literacy Study) assessment system, and highlights the possibilities of its integration into the training of primary school teachers. The article justifies the need to use methodological approaches based on international assessment systems in the formation of modern teacher competencies. In addition, the principles of improving the methodological skills of future teachers aimed at developing functional literacy in students are outlined. The study provides methodological recommendations on the design of effective educational tasks, text-based work technologies, and assessment criteria.

Keywords: Program for International Assessment, PIRLS, primary school, methodological preparation, teacher competence, functional literacy, learning tasks, pedagogical technologies, assessment principles, reading literacy.

1. Introduction

Today, improving the quality and efficiency of the educational process, especially improving the professional training of primary school teachers, is one of the priority tasks of educational reform. The primary education stage is an important stage not only for the formation of knowledge and skills in students, but also for the development of vital competencies such as independent thinking, critical analysis, and justification of one's own opinion. In this regard, the methodological training of teachers is directly related to their professional effectiveness, and this training must be carried out in accordance with international educational standards[1].

In recent years, systematic approaches to determining students' reading literacy and text-based competencies have been widely introduced through international assessment programs, in particular, PIRLS (Progress in International Reading Literacy Study). These assessments allow not only to assess the level of students, but also to improve the methodological approaches of teachers. The results of international studies show that the quality of education, especially in primary education, is closely related to the teacher's strategies for working with text and methodological approaches to developing literacy[2].

Therefore, it is of great importance to improve the methodological preparation of future primary school teachers based on international assessment systems, especially PIRLS criteria. This article analyzes methodological approaches aimed at integrating international assessment principles into the pedagogical preparation process and developing practical skills in developing reading literacy in future teachers[3].

2. Materials and Methods

This study aims to determine the level of methodological preparation of future primary school teachers based on the content requirements of international assessment programs (PIRLS, TIMSS, PISA) and to develop principles for its improvement. The

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methodological approach of the study is **qualitative** (quality) and **Quantitative** methods were used in harmony[4].

The study involved 3rd-4th year undergraduate students (total number N = 120) studying in the field of primary education at several pedagogical higher educational institutions in Uzbekistan. Participants were selected randomly. In-depth interviews were also conducted with 12 professors and teachers of the pedagogical faculty[5].

Data was collected through the following methods:

1. **Questionnaire:** A special questionnaire was developed that included closed and open questions regarding students' level of knowledge of the content of international assessment programs, their ability to use them in a practical and methodological way, and their self-assessment.
2. **Semi-structured interviews:** Interviews were conducted with faculty members to identify problems and opportunities in developing curricula and methodological skills.
3. **Document analysis : The criteria of** higher education curricula, methodological manuals, and international assessment programs (PIRLS, TIMSS) were analyzed.

Research stages

The research was carried out in the following stages:

1. **Preparatory stage** - literature related to international assessment programs was studied, questionnaires and interview forms were developed.
2. **Data collection stage** – questionnaires were distributed, interviews were conducted, and documents were analyzed.
3. **Analysis and generalization stage** – the collected data was analyzed and principles were developed.

Data analysis. Quantitative data were analyzed using Microsoft Excel and SPSS. Descriptive statistics (percentage, mean) and correlation analysis were used in the statistical analysis process. Qualitative data were analyzed using thematic coding in NVivo. Based on the interviews, main themes (topics) were identified and linked to research ideas[6].

3. Results

In the 21st century, the quality of education is determined not only by national standards, but also by international assessment systems. One such prestigious assessment is the **PIRLS** (Progress in International Reading Literacy Study) program. This program assesses the literacy of primary school students in reading, understanding **and analyzing text**. Uzbekistan has been participating in this assessment since 2021, which requires a new approach to the teacher training process in the country[7].

Future elementary school teachers, especially in **reading literacy, critical thinking, and in-depth text analysis** The PIRLS criteria, unlike traditional memorization-based teaching methods, assess children's higher-level cognitive skills, such as analyzing a text, identifying the main idea, and understanding the author's position [8].

Therefore, it is important to pay attention to the following when training future teachers:

1. Teaching **text-based strategies** in teaching programs ;
2. Develop and use **tasks similar to PIRLS questions** during the internship ;
3. Teaching **interactive methods** aimed at developing students' independent thinking .

Teachers themselves must also understand the PIRLS criteria, be able to design appropriate lesson plans, and be able to apply assessment methods in practice. Otherwise, the goal of participating in international assessments will not be fully realized[9].

On improving the methodological preparation of future primary school teachers based on international assessment programs were analyzed and the results were summarized.

1. The level of knowledge of future teachers about international assessment programs. According to the survey results, although 62 percent of students have general knowledge about international assessment programs, only 18 percent of them have in-depth knowledge about the methodological foundations, assessment criteria, and test structure of these programs. In particular, the level of knowledge about how to use the PIRLS program in the practical teaching process was low[10].
2. Deficiencies in methodological preparation. According to the results of the analysis , despite the fact that most students (74%) have theoretical knowledge, there was a lack of ability to apply this knowledge in practice. In particular:
 - a. The ability to structure learning tasks in accordance with international assessment standards is low;
 - b. Insufficient experience in using methods that develop metacognitive competencies;
 - c. Lesson planning does not use international outcomes-based approaches.
3. Interview results: teachers' opinions. The following problems were highlighted in the semi-structured interviews conducted with teachers :
 - a. There is insufficient integration with international assessment systems in current curricula;
 - b. There are very few cases of using international test samples in methodological lessons;
 - c. Insufficient attention is paid to tasks aimed at developing critical and functional literacy in students.
4. Document analysis: curricula and methodological guides. When analyzing the curricula of higher pedagogical educational institutions, it was found that topics related to international assessment programs were covered briefly and superficially in the main subjects. In some methodological guides, sample questions from PIRLS tests were not included at all[11].
5. Needs to improve methodological training. 87 percent of participants expressed the need to organize methodological training courses based on the content, structure and requirements of international assessment programs. Also, 70 percent of participants noted a high need to use international tests in practical training.

Table 1 summarizes the findings of a research study that explored the preparedness of future primary school teachers in terms of their understanding and application of international assessment standards and methodologies. The table is organized by nine research directions, presenting corresponding main results and associated percentages where applicable[12].

Table 1. Results of a study on the methodological preparation of future primary school teachers

| No. | Research direction | Main results | Percentage (%) |
|-----|---|---------------------------------------|----------------|
| 1 | General knowledge of international assessment programs | Students with general knowledge | 62% |
| 2 | Those who have a deep understanding of the methodological foundations of international programs | Only students with in-depth knowledge | 18% |

| No. | Research direction | Main results | Percentage (%) |
|-----|--|--|----------------|
| 3 | The level of application of theoretical knowledge in practice | Students with poor practical application skills | 74% |
| 4 | Students who can create assignments that meet international standards | Those who have this skill | 26% |
| 5 | Those who can apply metacognitive approaches in their lessons | At a low level | 21% |
| 6 | The problem highlighted by university teachers in interviews | Insufficient integration of international programs in textbooks and curricula | - |
| 7 | Curriculum analysis | Brief and superficial information about TIMSS/PIRLS, no test samples available | - |
| 8 | The need for methodological training courses based on international assessment | Students who consider such courses necessary | 87% |
| 9 | Desire to use international tests in practical training | Students who have expressed such a need | 70% |

4. Discussion

The results of this study showed that the level of methodological preparation of future primary school teachers based on international assessment programs (PIRLS, TIMSS and PISA) is not yet at the required level. Only a small part of students (18%) have in-depth knowledge of the content and methodology of these programs, while the majority face difficulties in applying theoretical knowledge in practice. This situation indicates a lack of integration of international assessment systems in the curricula of higher pedagogical education institutions[13].

In other words, the effectiveness of existing pedagogical methods in developing practical skills and lesson planning in line with international standards has been found to be low. This result is consistent with the results of international and local research. For example, the study also highlighted the lack of practical skills among primary school teachers in preparing for international assessments.

Interviews with faculty members also highlight shortcomings in curricula and methodological manuals. They believe that the curricula cover only superficially topics related to international assessment criteria, and that practical training is limited. This hinders teachers from implementing new pedagogical approaches and methods into practice [14].

The study also found a high level of demand (87%) among prospective teachers for special courses based on the content and methodology of international assessment programs. This indicates the need to revise curricula in this area in higher pedagogical educational institutions .

In general, to improve the methodological training of teachers based on the criteria of international assessment programs:

1. Deep integration of international assessment standards into curricula,
2. Extensive use of international test samples in practical training,
3. It is necessary to introduce interactive and innovative pedagogical technologies aimed at developing students' practical skills .

Thus, this study can serve as an important basis for the quality training of future primary school teachers and their ability to conduct pedagogical activities that meet international standards[15].

5. Conclusion

The findings of this study underscore the urgent need to improve the methodological training of future primary school teachers in line with international assessment programs such as PIRLS, TIMSS, and PISA. While a majority of students demonstrate general awareness of these programs, only a small portion possess in-depth knowledge of their content, structure, and pedagogical applications. The study reveals significant gaps between theoretical understanding and practical implementation, especially in the development of assignments, metacognitive teaching approaches, and lesson planning based on international standards. Interviews with educators and document analysis further confirmed the lack of integration of international assessment content into current higher education curricula and methodological guides. Importantly, a large percentage of students expressed the necessity of dedicated training courses and the inclusion of international test samples in practical sessions, indicating both motivation and readiness for reform. These insights highlight the need for systemic curricular revisions, including the incorporation of interactive pedagogical methods and global assessment criteria into teacher education programs. Strengthening future teachers' competencies in reading literacy, critical thinking, and outcome-based assessment design is essential to ensure Uzbekistan's effective participation in global education evaluations. The principles derived from this research provide a practical and theoretical foundation for transforming teacher preparation, aligning it with international expectations, and ultimately enhancing the quality of primary education in the country.

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