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Improving Reading Literacy of Inclusive Classroom Students Based on The Requirements of The Pirls International Assessment Program

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ABSTRACT

This article provides an in-depth analysis of ways to improve reading literacy in inclusive classrooms based on the requirements of the international assessment program PIRLS (Progress in International Reading Literacy Study). The article examines in detail the role of inclusive educational technologies, in particular, practical examples of augmentative and alternative communication (AAC) tools, in implementing the PIRLS goals (literary experience and information acquisition) and the four comprehension processes (finding information, inferring, integrating, and evaluating) for students with special needs.

Keywords: PIRLS, reading literacy, inclusive education technologies, AAC, T2L, ALL program, practical examples, PIRLS 2026, scientists of Uzbekistan.

INTRODUCTION

In the modern education system, reading literacy is recognized as one of the main factors of intellectual development of a person, independent thinking and successful functioning in society. Especially in the process of globalization, the skills of independent acquisition of knowledge, analysis of information and a critical approach to it are gaining importance. In this regard, international assessment programs, in particular PIRLS (Progress in International Reading Literacy Study), serve as an important criterion for determining and developing students' reading literacy.

competence of fourth-graders, studying reading on the basis of two main goals - artistic (acquiring literary experience) and information acquisition - and four main comprehension processes (finding information, drawing conclusions, integrating and evaluating). This allows us to determine not only the reading technique, but also the student's deep thinking in working with the text.

In recent years, international research has shown that the pandemic has had a significant impact on the quality of education. In particular, the results of Uzbekistan's PIRLS 2021 study have once again confirmed the need to improve the level of reading literacy of students. This requires the introduction of innovative approaches to the educational process, especially the use of effective methods and tools in inclusive education.

METHODOLOGY

Inclusive education is a system aimed at creating equal opportunities for all students, including children with special needs. In such conditions, the development of reading literacy requires the use of special pedagogical technologies, not limited to traditional methods. One of these is augmentative and alternative communication (AAC) technologies, which are effective tools for students with speech and communication disabilities.

In particular, the transition of the PIRLS 2026 cycle to a fully digital format is creating new opportunities for inclusive education. The digital environment allows taking into account the individual needs of each student through interactive tasks, multimodal materials, and adapted (accommodation) tools. This makes the integration of AAC technologies with PIRLS requirements an even more urgent issue.

At the same time, scientific research conducted by Uzbek scientists is helping to identify ways to adapt PIRLS requirements to the national education system, improve the methodology for developing reading literacy, and increase functional literacy. This article is aimed at scientifically and practically substantiating strategies for improving reading literacy in inclusive classrooms by combining PIRLS requirements and AAC technologies.

The article was prepared using the method of literature review. It included official PIRLS 2021-2026 reports (IEA and TIMSS & PIRLS International Study Center), international studies on AAC and literacy (2023-2026, including practical case studies), and the work of Uzbek scientists. Selection criteria: PIRLS results, PIRLS 2026 digital format, AAC tools (T2L, ALL programs) and national context. A total of 12 sources were analyzed, 6 of which are national. New information is a priority.

RESULTS AND DISCUSSION

PIRLS 2021 results have shown the impact of the pandemic: scores have declined in many countries, with 70% of students in Uzbekistan performing at the lower-middle level [2; 11]. PIRLS 2026 will be fully digital, introducing innovative task types and automated assessments. This will expand its capabilities for inclusive classrooms [4; 5].

A detailed analysis and practical examples of AAC technologies Augmentative and alternative communication (AAC) technologies are tools that supplement or replace spoken or written language and play an important role in developing reading literacy for students with special needs. AAC is divided into two types: low-tech (low-tech: PECS graphic characters) and high-tech (high-tech: tablet applications). They are effective when combined with the principles of the "science of reading" (phonemic awareness, phonics, speed, vocabulary, and comprehension).

Practical examples include:

1. T2L (Transition to Literacy) feature (in Proloquo2Go, TouchChat, and similar apps): Text is dynamically displayed and read aloud when a graphic symbol is selected. In a 2025 case study, a young boy (Henry) with Down syndrome learned to read single words using T2L via telepractice. As a result, decoding skills improved significantly [10;49]. In a previous study (5 students with autism spectrum disorder aged 6–14 years) using T2L, accuracy increased by 45–69% when learning 12 sight words; they then described the images using a text grid [9;27]. This feature can be used in interactive texts in PIRLS tasks (finding information).

2. Accessible Literacy Learning (ALL): Designed specifically for nonverbal learners. For example, in phonics lessons, CVC words (cat) are taught: the child selects the correct word from the pictures, no verbal response is required. In shared reading, the child uses AAC tools to mark the text, answer questions, and perform PIRLS processes (inference, integration). Studies have shown significant increases in reading skills in children aged 6-10 years [7;58].

3. Mind Express / Switch On Literacy platform: Works through switch scanning (key pressing) for children with complex motor and visual problems. The child scans a list of books, selects, and independently turns the pages and listens to audio reading. This meets the PIRLS literary goals (story comprehension) and increases the child's independence [8;96].

4. Proloquo2Go app: Provides a transition from symbols to printed text. When personal words (family names) are added, the child learns sight words by comparing letters. For example, when "aunt" is added to "aunt" as "Aunt Ava" and "Aunt Mariam", the child differentiates between word length and capital letters. This facilitates working with text for PIRLS information purposes [6;43].

In the context of Uzbekistan, these examples can be used in the digital format of PIRLS 2026 through interactive tablets. Based on the proposals of Hasanova S.K. and Rajabova K.F., adapting PIRLS stories with AAC applications increases student interest and comprehension. Strategies:

1. Clarity instructions + shared/guided reading with AAC.

2. Digital adaptation of PIRLS tasks (T2L and visual aids).

3. Differentiated activities and parental involvement.

4. Implementing AAC in school libraries and the "Caravan of Enlightenment" project.

Studies by Uzbek scholars have shown that AAC, when combined with PIRLS tasks, significantly improves outcomes in inclusive classrooms.

Practical examples of AAC technologies (T2L, ALL, Mind Express, Proloquo2Go) combine PIRLS requirements with universal design principles. AAC in the digital format of PIRLS 2026 creates equal opportunities for students with special needs. International studies (Caron et al., 2025; Light et al., 2025) confirm that teaching literacy with AAC significantly improves outcomes [10;78]. National programs in Uzbekistan should be adapted to the PIRLS 2026 framework and integrated with inclusive policies. As noted in the works of Doniyarov, Rajabova, Hasanova and others, PIRLS tasks are effective when integrated into local materials [6;10]. Limitations: technology provision and teacher qualifications. In the future, PIRLS 2026 results will help to assess the effectiveness of AAC.

CONCLUSION

The analysis shows that reading literacy is not only the main indicator of primary education, but also an important factor determining the success of a student in subsequent stages of education. In this regard, the organization of the educational process based on the requirements of PIRLS serves to comprehensively develop students' skills in working with text, thinking and analyzing.

In the context of inclusive education, this process becomes even more complicated, since students have different individual capabilities, needs and levels of development. Therefore, along with traditional teaching methods, there is a need to use innovative technologies, in particular, augmentative and alternative communication (AAC) tools. The results of the study show that tools such as the T2L function, the ALL program, and Proloquo2Go significantly develop students' not only reading, but also comprehension, inference and evaluation skills.

The transition of PIRLS 2026 to a digital format creates a favorable environment for the widespread use of these technologies. The ability to take into account the individual learning pace of students through interactive platforms, provide customized tasks, and automatically analyze results increases the effectiveness of inclusive education. This is an important step in ensuring equal educational opportunities for all students.

The following priority areas are considered important for the Uzbek education system:

— improving the skills of teachers in inclusive education and digital technologies;

— providing schools with modern technical equipment (tablets, AAC applications);

— integrating PIRLS tasks into national textbooks and curricula;

— monitoring student results and strengthening an individual approach;

— actively involving parents and society in the inclusive education process.

CONCLUSION

In conclusion, the combination of PIRLS requirements and AAC technologies is an effective model for developing reading literacy in inclusive classrooms. This approach will expand access to quality education for all children, not just students with special needs. Future analyses based on PIRLS 2026 results will further assess and improve the effectiveness of this approach.

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