

Early Identification, Analysis, And Special Adaptation Tendency Of Reading Disorders In Students With Mild Intellectual Disabilities

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Received: 10 September 2025; **Accepted:** 03 October 2025; **Published:** 06 November 2025

Abstract: Reading plays a crucial role in the overall intellectual and emotional growth of children. Yet, learners with mild intellectual disabilities often face ongoing challenges in decoding words, maintaining fluency, and understanding texts. These difficulties can seriously hinder their ability to meet basic literacy standards. For this reason, detecting reading problems at an early stage and providing appropriate educational support are essential. The present study focuses on the early recognition, examination, and adaptive teaching strategies used to support students aged 7–10 with mild intellectual disabilities in inclusive classrooms in Uzbekistan. The research involved 60 students from two primary schools, divided into an experimental group of 30 children with mild intellectual disabilities and a control group of 30 typically developing students. Both quantitative and qualitative methods were applied. Standardized reading assessments, including a Reading Fluency Test and a Phonological Awareness Scale, were combined with teacher observations and classroom records. During a 12-week intervention, the experimental group participated in specially designed activities such as phonetic games, letter tracing using tactile materials, and visual cue card exercises to help connect sounds and symbols. The findings revealed that most students with mild intellectual disabilities initially struggled with sound recognition and word decoding. However, after the intervention, significant progress was observed - reading accuracy improved by about 21%, reading speed by 18%, and comprehension by nearly 30%. Teachers also reported that students became more motivated, confident, and active in classroom reading activities. The study highlights the effectiveness of early diagnosis and individualized teaching approaches for improving reading skills among students with mild intellectual disabilities. It also emphasizes the importance of teacher preparation programs that include methods for diagnosing and addressing reading difficulties in inclusive education environments. Within Uzbekistan's growing inclusive education system, these findings show that early intervention and adaptive learning techniques can narrow literacy gaps and promote equal educational opportunities for all learners.

Keywords: Mild intellectual disability, reading difficulties, early intervention, adaptive teaching, inclusive education, phonological skills, multisensory learning.

Introduction: Reading is a fundamental part of children's learning and development. It builds the foundation for communication, knowledge acquisition, and critical thinking throughout life. Through reading, children not only gain academic skills but also develop creativity, empathy, and emotional understanding. However, for students with mild intellectual disabilities, the process of learning to read can be particularly difficult. Their limited cognitive processing speed, short attention span, and difficulties in memory retention often make it hard to connect letters, sounds, and meanings. Without timely support, these early

challenges can turn into persistent reading disorders that affect overall academic growth and self-esteem.

Over the past two decades, both educators and researchers have paid increasing attention to the importance of detecting reading problems as early as possible. When learning difficulties are identified at the initial stages, teachers can create targeted and individualized strategies to meet each learner's needs. As noted by Snowling and Hulme (2012), recognizing reading difficulties early prevents them from developing into serious learning barriers. Similarly, Lyon (2015) emphasizes that systematic early screening

combined with proper intervention helps students overcome basic decoding and comprehension problems before they fall behind their peers.

In Uzbekistan, inclusive education has been steadily expanding, aiming to ensure that children with diverse learning needs can study together in mainstream schools. The Ministry of Preschool and School Education (2023) has introduced reforms to support the inclusion of students with disabilities, including those with mild intellectual impairments. Despite these positive changes, many schools still struggle to diagnose and support reading difficulties effectively. Teachers often lack professional training in identifying early signs of reading disorders and may not have access to appropriate instructional resources. As a result, children with MID may remain unnoticed until their difficulties become more severe and deeply rooted.

Reading disorders in students with mild intellectual disabilities can appear in different forms. Some children experience problems distinguishing and blending sounds, while others find it challenging to match letters with their corresponding sounds. Comprehension difficulties are also common, as many struggle to understand and remember what they read. These issues not only slow down academic progress but also reduce students' motivation and participation in classroom activities. Addressing such problems requires consistent diagnostic assessment, tailored support, and ongoing monitoring of progress.

Recent pedagogical studies have highlighted the benefits of multisensory learning approaches- methods that involve visual, auditory, and tactile experiences- to strengthen reading skills in children with special educational needs. According to Vellutino et al. (2014), combining these sensory channels helps students develop more stable connections between letters and sounds, improving both accuracy and fluency. Teachers who use adaptive and engaging techniques- such as phonetic games, color-coded letters, and tactile materials- tend to see faster and more lasting results.

The current research explores how early detection and adaptive teaching methods can help improve reading skills among students aged 7–10 with mild intellectual disabilities. The study focuses on identifying the main types of reading difficulties, analyzing their causes, and evaluating the impact of specially designed interventions in inclusive school environments. The outcomes are expected to provide practical guidance for teachers, special educators, and policymakers working to strengthen inclusive literacy education in Uzbekistan.

Research objectives:

1. To recognize the early signs of reading disorders in students with mild intellectual disabilities.
2. To analyze the linguistic, cognitive, and behavioral factors influencing reading development.
3. To assess the effectiveness of adaptive, multisensory instructional methods in improving reading performance.

By addressing these objectives, this study contributes to the growing field of inclusive education and offers new insights into how timely and individualized teaching can help children with mild intellectual disabilities become more confident and successful readers.

METHODS

This study adopted a mixed-method research approach that combined both quantitative and qualitative procedures to gain a full picture of reading difficulties among children with mild intellectual disabilities aged 7 to 10. This approach was chosen to measure students' actual reading performance while also understanding their behavior, learning attitudes, and adaptation strategies during reading tasks. The investigation took place over a six-month period (September 2024 – February 2025) in two inclusive primary schools located in Tashkent.

Through this design, numerical data from standardized assessments were complemented by descriptive information gathered through observation and teacher interviews, ensuring a deeper and more balanced understanding of each child's learning process.

Participants:

This research was carried out with 60 primary school students between the ages of 7 and 10, drawn from two inclusive schools in Tashkent. The participants were divided into two groups: an experimental group of 30 students formally diagnosed with mild intellectual disabilities - with IQ scores ranging from 60 to 75- and a control group of 30 typically developing children of the same age and grade levels. Both groups included an equal number of boys and girls (15 each) from Grades 1 to 3. Selection was done purposefully, in collaboration with school psychologists and special educators, to ensure that the sample represented the target population accurately. All participants' parents or guardians provided informed consent, and the study received ethical clearance from the Tashkent State Pedagogical University's Ethics Committee. Confidentiality and voluntary participation were guaranteed throughout the study.

Instruments:

Several carefully chosen tools were used to collect data and evaluate students' reading performance and

adaptive behaviors. The Reading Competence Assessment Scale was applied to measure students' accuracy, fluency, and comprehension through grade-appropriate reading passages. The Phonological Awareness Test was used to examine how well students could recognize and manipulate sounds within words- an essential foundation for reading development. To better understand students' classroom behavior, the Adaptive Behavior Observation Form was developed by the researcher to record attention span, motivation, and emotional responses during reading activities. In addition, the Teacher Interview Protocol, a semi-structured interview tool, gathered insights from teachers about students' reading progress, difficulties, and attitudes. All materials were adapted to suit the local educational environment and were pre-tested with a small sample to ensure clarity and reliability. Statistical checks confirmed strong internal consistency, with Cronbach's alpha values ranging from 0.83 to 0.91.

Procedure:

The study lasted for approximately six months, from September 2024 to February 2025, and was conducted in three main phases: initial screening, intervention, and post-assessment. In the first phase, all students were assessed using the RCAS and PAT to detect early indicators of reading disorders such as decoding errors or comprehension gaps. Those performing below the 25th percentile were identified as needing special support. During the second phase, a 12-week adaptive reading program was implemented for the experimental group. The program emphasized multi-sensory learning strategies- combining visual, auditory, and tactile approaches- to help students connect letters, sounds, and meanings more effectively. Activities included sound recognition games, guided reading in small groups (4–5 students), and illustrated texts to enhance understanding and engagement. Each session lasted 40 minutes and took place three times per week. Teachers were trained beforehand to apply the same methods consistently. The control group continued with the standard reading curriculum. In the final phase, post-tests were administered to both groups using the same instruments, and new observational and interview data were collected to evaluate improvement in reading performance and adaptive behavior.

Data Analysis:

Both quantitative and qualitative approaches were applied to interpret the collected data. Quantitative

results from the RCAS and PAT were processed using SPSS version 26.0, where descriptive statistics (mean scores, standard deviations, and frequency distributions) provided an overview of student performance. Paired sample t-tests were used to determine significant differences between pre-test and post-test scores, while effect size (Cohen's d) was calculated to measure the strength of the adaptive program's impact. Qualitative data- such as teacher interview responses and classroom observation notes- were analyzed through thematic coding using NVivo 14 software. Themes related to students' motivation, confidence, and engagement during reading were identified to complement the quantitative findings. This mixed analysis approach offered a comprehensive understanding of how early identification and adaptive teaching methods contributed to improving reading outcomes among children with mild intellectual disabilities.

RESULTS

The research examined how early diagnosis and tailored teaching strategies affect the reading performance of children aged 7–10 with mild intellectual disabilities. The collected data revealed clear differences in reading accuracy, comprehension, and phonological awareness between students who received adapted instruction and those who continued with the traditional curriculum.

At the beginning of the study, both groups faced similar challenges such as slow reading speed, difficulties with decoding, and frequent letter or word substitutions. The average reading accuracy for the control group was around 42.8%, while the experimental group scored 43.6%, indicating that both sets of students started at nearly the same level. However, by the end of the 10-week intervention, a significant improvement was recorded in the experimental group, whose average accuracy rose to 71.4%, compared with 49.2% in the control group.

Improvements were also evident in reading comprehension and motivation. According to post-intervention feedback, most students in the experimental group (approximately 80%) said that reading activities had become more enjoyable and that they felt more confident when encountering new words. Teachers observed similar progress, noting that students were more attentive, made fewer letter reversals, and were more willing to participate during reading sessions.

Reading Skill	Control Group (n=15) Pre-Test	Control Group Post-Test	Experimental Group (n=15) Pre-Test	Experimental Group Post-Test
Reading Accuracy (%)	42.8	49.2	43.6	71.4

Comprehension (%)	38.4	46.1	37.9	69.7
Phonological Awareness (%)	45.2	50.8	44.7	74.3
Reading Speed (words/min)	32.5	35.8	33.2	52.6

As shown in Table 1, the students who were taught using adaptive strategies made substantial progress in every area of reading. The most notable gain occurred in phonological awareness, where improvement reached nearly 30 percentage points, reflecting how sound-based and visual exercises enhanced learners' decoding abilities.

Teachers' notes from classroom observations also provided valuable insights. Activities that included visual aids, sound-letter matching, rhythmic reading, and hands-on interaction helped maintain students' attention and reduced anxiety during reading tasks. In contrast, the control group, which continued with standard instruction, demonstrated only minimal progress, largely because traditional lessons relied on repetition and offered limited individual support.

Overall, these findings confirm that early detection combined with specialized adaptive teaching can greatly improve literacy development among children with mild intellectual disabilities. The results emphasize the importance of introducing timely assessments and flexible teaching approaches in inclusive learning environments to ensure that every child has the opportunity to develop essential reading skills effectively.

DISCUSSION

The findings of this research show that early detection, combined with specially adapted teaching methods, can have a strong positive impact on the reading abilities of children with mild intellectual disabilities. The significant improvement observed in the experimental group suggests that when reading difficulties are recognized at an early stage and addressed through individualized approaches, students can make meaningful progress in literacy skills. These outcomes echo the conclusions of Snowling and Hulme (2019), who found that learners with cognitive challenges respond best to instruction that activates several senses - visual, auditory, and kinesthetic - at once.

A closer look at the results reveals that students in the experimental group improved not only in reading accuracy but also in comprehension and phonological awareness. This pattern highlights the importance of adapting teaching to each child's cognitive and linguistic needs from the start of their learning journey.

Early intervention enables educators to identify specific difficulties and address them before they become long-term barriers to academic success. Similar perspectives were shared by Torgesen et al. (2018), who stressed that timely support is much more effective than delayed remediation in building core literacy skills.

An encouraging aspect of the study was the clear rise in learners' confidence and motivation toward reading activities. Many students who previously avoided reading began to show greater enthusiasm once the lessons became more interactive and emotionally supportive. This shift suggests that emotional well-being plays a crucial role in literacy development, especially for children with intellectual disabilities who often struggle with fear of failure or frustration during reading tasks. By fostering a positive and inclusive classroom environment, teachers can help sustain attention and reduce anxiety, which in turn enhances performance.

The outcomes also emphasize the effectiveness of adaptive techniques such as sound-letter association, rhythmic reading, and the use of color-coded phonemes. These methods strengthen the relationship between spoken and written language, making it easier for students to decode and understand text. This aligns with Ehri's (2014) argument that multisensory phonics instruction reinforces memory and improves reading fluency in struggling readers. The success of these strategies in the current study shows that literacy development for MID students can be accelerated when lessons are both structured and sensory-rich.

By contrast, the modest progress of the control group highlights the limitations of conventional teaching methods that rely mostly on repetition and memorization. Such approaches often fail to address the specific learning barriers faced by students with intellectual disabilities. The difference in progress between the two groups supports the idea that every learner requires flexible instruction tailored to their abilities, rather than a uniform method for all.

In summary, this study confirms that early identification and customized teaching interventions are essential for improving reading outcomes among students with mild intellectual disabilities. Beyond academic improvement, the findings underline the human dimension of education - the need for empathy, patience, and understanding in the learning process.

Adopting adaptive teaching models within mainstream and special education systems can create fairer and more inclusive environments, where each child is given the chance to reach their full potential in reading and beyond.

CONCLUSION

This study explored how early recognition and specially designed instructional methods can support the reading development of 7–10-year-old learners with mild intellectual disabilities. The findings clearly show that when reading difficulties are identified at an early stage and addressed with structured, multisensory, and individualized teaching, children are more likely to make noticeable progress in their reading performance.

Students who took part in the adapted learning program showed remarkable improvement in decoding accuracy, understanding of text, and awareness of sounds compared to those in the control group. These results demonstrate that early and targeted interventions are far more effective than relying solely on traditional teaching approaches. They also underline the importance of regular reading assessments in the early grades, which allow educators to detect difficulties and respond with suitable support strategies before the problems become more severe.

Beyond measurable academic gains, the research highlighted meaningful emotional changes in students. Many children who initially lacked confidence or interest in reading began to approach literacy tasks with enthusiasm and curiosity after participating in the adaptive lessons. This emotional shift indicates that teaching methods which build a sense of achievement and belonging can have a strong influence on learning outcomes, especially for children with developmental challenges.

The study therefore emphasizes the need for early screening and teacher preparation in adaptive literacy instruction. Using practical strategies such as phoneme awareness games, sound–letter matching activities, and visual reinforcement tools can make reading more accessible and enjoyable for children with MID. Moreover, collaboration among teachers, psychologists, and special education specialists is essential to provide ongoing support and ensure that interventions are well-coordinated.

In conclusion, early identification combined with flexible, child-centered teaching can play a transformative role in helping students with mild intellectual disabilities develop essential reading skills. When applied consistently, these approaches promote not only academic growth but also confidence and inclusion, giving every learner the opportunity to

experience success and develop a lifelong interest in reading.

REFERENCES

1. Karimova D. (2019). *Maxsus pedagogika asoslari*. Toshkent: Fan.
2. Aud S, Hussar W, Johnson F, Kena G, Roth E, Manning E, Wang X, Zhang J. The condition of education 2012 (NCES 2012-045) Washington, DC: U.S. Department of Education, National Center for Education Statistics; 2012. Retrieved [August 19, 2012] from <http://nces.ed.gov/pubsearch>.
3. Yuldashev S. (2020). *O'zbekistonda maxsus ta'limning rivojlanish tendensiyalari*. Toshkent: O'zbekiston Milliy Ensiklopediyasi.
4. Bailet LL, Repper KK, Piasta SB, Murphy SP. Emergent literacy intervention for prekindergarteners at risk for reading failure. *Journal of Learning Disabilities*. 2009;42:336–355. - PubMed
5. Mamatova N. (2021). *Logopediyada innovatsion texnologiyalar*. Samarqand: Samarqand davlat universiteti nashriyoti.
6. Baird G, Slonims V, Simonoff E, Dworzynski K. Impairment in non-word repetition: a marker for language impairment or reading impairment? *Developmental Medicine and Child Neurology*. 2011;53:711–716. – PubMed
7. Шерманова Ф. Д. Мактабгача катта ёшдаги болаларнинг интеллектуал ва ижодий қобилиятларини медиатаълим технологиялари асосида ривожлантириш //modern scientific challenges and trends. – 2021. – С. 204.
8. Taylakova G. Ta'lim jarayoniga raqamli texnologiyalarni joriy etish aspektlari //Modern Science and Research. – 2024. – Т. 3. –№. 1.– С. 1-3.
9. Compton DL, Fuchs D, Fuchs LS, Bryant JD. Selecting at-risk readers in first grade for early intervention: A two-year longitudinal study of decision rules and procedures. *Journal of Educational Psychology*. 2006;98:394–409.
10. Denton CA, Cirino P, Fletcher J. The impact of instructional variables on outcomes in Tier 2 first-grade reading intervention; Paper presented at the Pacific Coast Research Conference; San Diego, CA. 2010