

Issues of Preventing Dysgraphia in Preschool and School-Age Children

Po'latxo'jayeva Malika Rustamovna

Uzbekistan National Pedagogical University named after Nizami, Associate Professor of the Faculty of Pedagogy, Psychology and Inclusive Education, Uzbekistan

Received: 23 April 2026; **Accepted:** 18 May 2026; **Published:** 11 June 2026

Abstract: This article analyzes the theoretical and practical aspects of preventing dysgraphia in preschool and school-age children. Writing is considered as a complex form of speech activity, and the interrelationship of speech, psychological, physiological and neurological factors in its formation is highlighted. The study reveals the importance of graphomotor skills, fine motor skills, visual-spatial imagination, visual and auditory memory, and coordination of hand and eye movements necessary for the development of writing skills. The main causes of dysgraphia, its impact on the educational process, mastery of written speech and academic success of children are also analyzed. The content of preventive, corrective and developmental work carried out in preschool educational organizations and at the stage of primary education is highlighted, and effective methods of gradually preparing children for writing activities are described. The author substantiates that the successful formation of writing skills is an important indicator of children's readiness for school education, and that the development of fine motor skills, activation of speech processes and support of psychophysiological mechanisms are important factors in the prevention of dysgraphia.

Keywords: Dysgraphia, writing activities, writing skills, graphomotor skills, fine motor skills, speech development, written speech, preschool education, primary education, visual-spatial imagination, hand-eye coordination, psychophysiological mechanisms, corrective and developmental work, prevention, preparing children for school.

Introduction: While the issue of effective preparation of children for school education is relevant in the world, a number of works have been carried out in this regard in our country. In recent years, great attention has been paid to the preschool education system in our country, and all possible opportunities are being created to radically improve the level of preparation of children for school education, introduce modern educational programs and technologies into the educational process, and create conditions for the comprehensive intellectual, moral, aesthetic and physical development of children. Today's demand is to raise physically healthy, spiritually mature individuals in society. A comprehensively developed generation is the key to a bright future. For this reason, supporting youth has become one of the priority areas of our state policy. Writing is a set of special characters adopted in a

language. The concept of writing includes not only signs representing the sound elements of a language (words, syllables, sounds), but also pictography (a type of pictographic writing from the Latin *pictu*) and ideography (writing representing individual words). These, as a set of communication signs, were contrasted with pre-writing signs (memory writing, calculation writing, etc.). Pictographic writing first appeared during the period of the clan system. At a time when human society consisted of small and scattered families - clans, people communicated with each other only through oral speech. The first writing appeared 5,000 years ago. The writing that people learned consisted of gestures, and for the first time they wrote on stones with bird claws, bones, and stones. Later, alphabets appeared during the development of scientific society. The first alphabet was created in Phoenicia and Greece. Later it

spread to other regions. After that, when people switched to writing not with nails, but with bird feathers, they began to write on trees and pieces of metal. Pictography (from Latin *pictus* - drawn, depicted, and ... *graphia*) - a type of writing that preceded the stages of development of writing, phonetic writing: a method of reflecting a certain information content in a picture or a strictly sequential series of pictures. It was widespread among American Indians, the peoples of Tropical Africa, the indigenous population of Australia and Oceania, some peoples of Siberia, and was practiced even until the 20th century. Over time, events were replaced by writing through objects (with pictures). Both subject-based writing and storytelling with pictures failed to fulfill their main task, because this writing could not become a kind of memory that would preserve the accumulated knowledge of mankind. Customs that had taken a certain form had to be passed on to new generations. The division of labor and the exchange of goods required accurate accounting. This necessity, this need, led to the development of writing. Thus, it began to serve the development of society. Initially, it was used by certain classes - state officials, those who were constantly engaged in writing.

Currently, in psychology and neuropsychology, writing is considered as a mental process with its own content and complex structure. Writing is provided on the basis of the interconnected movements of a number of areas of the left hemisphere of the brain. Each area of the brain makes its own contribution to the formation of writing and their joint activity reflects the fact that the process is an integral functional system. The formation of graphomotor skills is also associated with the following components: general motor skills, sequential execution of movements, well-developed visual-spatial imagination and visual memory, therefore, the activity of hand movements, the development of fine motor skills, memory and visual imagination are the main psychological, pedagogical and correctional-developmental tasks.

K. Aksenova considers the main condition for the full acquisition of writing skills by a primary school student to be the sufficient development of the motor components of the movement analyzer in the child and the readiness of the hand as a direct tool of graphic activity to perform precise and complex movements. M. M. Kolsova and a number of other researchers have

proven that there is reason to consider the fingers of the hand as an organ of speech, just like the organs of articulation. From this point of view, the projections of the hand can be considered one of the speech areas of the brain. Studies have shown that if the movements of the fingers are developed normally, speech also develops normally, and if the development of the fingers lags behind, then speech also lags behind in development, despite the general motor development. T.P. Salnikova divides the formation of graphic writing skills in preschool children into three main stages.

This stage - analytical - should master, separate, and understand the content of individual elements of the movement. This stage differs from other stages of skill formation and training in its structure and specificity, in its extreme complexity. At this stage, the child must understand not only "what to do", but also "how to do it correctly" in accordance with the requirements. T.P. Salnikova emphasizes that at the initial stage, attention should be paid to the schedule (constant control, comparison, correction in the process of activity).

The peculiarity of the organization of writing at this stage is that during the execution of movements, they are divided into separate sections: the time of movements and the pauses before the movements necessary to understand the next movements.

An important condition for the successful formation of graphic skills at this stage is the coordination of movements of the eyes and hands. The fingers must be able to "hear" the information provided by the eyes. Using a pen as a graphic tool requires complex coordinated movements from the leading hand.

Thus, as can be seen from the research of scientists, the formation of writing skills is a continuous and complex process.

The complexity and structure of the act of writing, the formation of the skill are the psychophysiological mechanisms that form its basis. In preschool educational organizations, the connection between these psychophysiological mechanisms is established and work is carried out to form writing skills in children. Links are established between the perception of movements and the control of muscle activity. A child who has mastered writing skills can be said to be fully prepared for school education.

The analysis of scientific literature and pedagogical-

psychological studies on the prevention of dysgraphia in preschool and school-aged children demonstrated that the development of writing skills is a complex psychophysiological process involving the coordinated functioning of multiple cognitive, linguistic, and motor systems. Successful acquisition of writing skills depends on the adequate development of oral speech, phonemic awareness, visual-spatial perception, attention, memory, and fine motor coordination. Deficiencies in one or more of these components may negatively affect the formation of writing abilities and increase the risk of dysgraphia.

The findings indicate that the emergence of dysgraphia is often associated with insufficient development of speech and psychomotor functions during the preschool period. Children who experience difficulties in differentiating speech sounds, analyzing and synthesizing phonemes, perceiving visual symbols, or coordinating hand movements are more likely to encounter challenges when learning to write. These difficulties may manifest as letter substitutions, omissions, reversals, incorrect word structures, and persistent spelling errors, which can adversely affect academic achievement and overall learning motivation.

The results also reveal that the development of graphomotor skills plays a crucial role in preparing children for literacy acquisition. Fine motor exercises, finger coordination activities, drawing, tracing, modeling, and other hand-training tasks contribute significantly to strengthening the motor foundations necessary for writing. Children who regularly participate in such activities demonstrate better control of writing instruments, improved handwriting quality, and greater endurance during writing tasks. Consequently, systematic development of fine motor skills should be considered an essential component of dysgraphia prevention programs.

Furthermore, the analysis highlights the importance of visual-spatial abilities in the writing process. Children must learn to recognize, distinguish, and reproduce graphic symbols accurately while maintaining correct spatial orientation on paper. The development of visual perception and visual memory enables children to identify letter forms, understand their structural features, and reproduce them correctly during writing activities. Therefore, educational activities aimed at enhancing visual discrimination, spatial orientation, and

visual memory can significantly reduce the likelihood of writing disorders.

The findings emphasize that early identification of risk factors associated with dysgraphia is one of the most effective preventive measures. Preschool educators, speech therapists, psychologists, and parents should collaborate in monitoring children's speech, motor, and cognitive development. Early detection of developmental delays allows timely intervention and the implementation of corrective and developmental programs before formal schooling begins. Such preventive efforts contribute to reducing learning difficulties and facilitating a smoother transition to primary education.

From a pedagogical perspective, the prevention of dysgraphia requires a comprehensive and interdisciplinary approach. Educational programs should integrate speech development, cognitive stimulation, motor training, and sensory-perceptual activities. The coordinated involvement of teachers, speech-language therapists, psychologists, and families creates favorable conditions for the development of writing readiness and literacy skills. In addition, the use of play-based learning activities in preschool education has been shown to enhance children's motivation and engagement while simultaneously promoting the development of the underlying skills necessary for successful writing acquisition.

Overall, the discussion confirms that dysgraphia prevention should begin long before children enter school. The formation of strong graphomotor, linguistic, and perceptual foundations during the preschool years significantly increases the likelihood of successful writing development and academic achievement. A systematic preventive approach that combines educational, psychological, and speech-therapeutic interventions can effectively reduce the incidence of dysgraphia and support children's full participation in the learning process.

In conclusion, the prevention of dysgraphia in preschool and school-aged children represents an important educational and developmental task that requires early and systematic intervention. Writing is a complex activity that depends on the coordinated development of speech, cognitive processes, visual-spatial abilities, memory, attention, and fine motor skills. Insufficient

development of these components may create significant difficulties in the acquisition of writing skills and increase the risk of dysgraphia.

The analysis confirms that preventive work should begin during the preschool period through activities aimed at developing graphomotor skills, phonemic awareness, visual perception, hand-eye coordination, and overall speech competence. Early identification of developmental difficulties and timely corrective support can significantly reduce the occurrence of writing disorders and facilitate successful adaptation to school learning.

Effective prevention of dysgraphia requires close cooperation among educators, speech-language therapists, psychologists, and parents. A comprehensive approach that combines educational, developmental, and corrective strategies creates favorable conditions for the formation of writing readiness and supports children's academic success. Therefore, strengthening preventive measures in preschool and primary education can contribute substantially to improving literacy outcomes and ensuring the full intellectual and social development of children.

REFERENCES

1. Марковская И.Ф., Екжанова Е.А Развитие тонкой моторики рук у детей с ЗПР // 1988
2. Запорожец А.В. Развитие произвольных движений // Избранные психо-логические труды / под ред. В.В. Давыдова, В.И. Зинченко-1986.
3. Лалаева Р. И. Нарушения чтения и письма у младших школьников. – СПб. : Союз, 2004. – 224 с.
4. Левина Р. Е. Основы теории и практики логопедии. – М. : Просвещение, 1968. – 367 с.
5. Волкова Г. А. Методика обследования нарушений речи у детей. – СПб. : Детство-Пресс, 2007. – 144 с.
6. Корнев А. Н. Нарушения чтения и письма у детей. – СПб. : Речь, 2003. – 330 с.
7. Лурия А. Р. Высшие корковые функции человека и их нарушения при локальных поражениях мозга. – М. : Академический проект, 2000. – 512 с.
8. Ахутина Т. В. Нейропсихологический подход к диагностике и коррекции трудностей обучения письму и чтению // Школьный психолог. – 2001. – № 37. – С. 8–12.
9. Цветкова Л. С. Нейропсихология счета, письма и чтения: нарушение и восстановление. – М. : Московский психолого-социальный институт, 2005. – 360 с.
10. Безруких М. М. Обучение письму: трудности и пути их преодоления. – М. : Эксмо, 2008. – 320 с.
11. Кольцова М. М. Двигательная активность и развитие функций мозга ребенка. – М. : Педагогика, 1973. – 144 с.
12. Запорожец А. В. Избранные психологические труды : в 2 т. Т. 2. Развитие произвольных движений. – М. : Педагогика, 1986. – 296 с.