2026 년 3월 13일;
서울, 대한민국

섹션 22.
PEDAGOGY AND EDUCATION

DOI 10.36074/logos-13.03.2026.039

FORMATION OF MOTOR COMPETENCIES IN CHILDREN WITH AUTISM SPECTRUM DISORDERS IN PRESCHOOL INSTITUTIONS

Hrytsai Nataliia[1]

1. All-Ukrainian Public Organization
"Association of Preschool Education Workers",
Public organization
"Ukrainian Association of Teachers and Psychologists of Primary, Preschool and Extracurricular Education", UKRAINE

Abstract. *The development of motor competencies in preschool children with autism spectrum disorders (ASD) represents a critical component of early intervention and inclusive education. Motor difficulties—such as impaired coordination, hypotonia, dyspraxia, and sensory motor disorganization—significantly influence children's participation in play, communication, and learning activities. This paper examines the theoretical foundations and practical strategies for forming motor competencies in preschool institutions. Emphasis is placed on structured physical activities, sensory motor integration, individualized instruction, and the creation of supportive, predictable environments. The paper highlights the importance of visual modeling, step by step task breakdown, and the integration of motor tasks into daily routines. Interdisciplinary collaboration among educators, occupational therapists, psychologists, and families is identified as a key factor in ensuring continuity and effectiveness of interventions. The findings demonstrate that early, systematic, and well designed motor development programs not only improve physical abilities but also enhance cognitive, communicative, social, and emotional functioning, contributing to successful inclusion and overall well being of children with ASD.*

Introduce. The formation of motor competencies in children with autism spectrum disorders (ASD) is one of the central tasks of preschool education, as motor development is closely linked to cognitive, communicative, emotional, and social functioning. Numerous studies demonstrate that children with ASD often experience delays in both fine and gross motor skills, difficulties with motor planning, coordination, balance, and sensory integration. These challenges influence not only physical development but also the child's ability to participate in

All rights reserved | CC BY-SA 4.0

play, interact with peers, and engage in learning activities. Therefore, preschool institutions must implement a systematic, scientifically grounded approach to developing motor competencies as part of a comprehensive educational and therapeutic program.

Motor development in children with ASD is characterized by significant variability. Some children demonstrate pronounced hypotonia, reduced endurance, and difficulties with posture control, while others show dyspraxia, stereotyped movements, or sensory-motor disorganization. These features require educators to adopt individualized strategies that take into account the child's sensory profile, level of motor readiness, and preferred modes of interaction with the environment. The preschool period is particularly sensitive for motor development, as neuroplasticity is high and early intervention can significantly improve long-term outcomes.

The formation of motor competencies begins with creating a structured, predictable, and sensory-friendly environment. Children with ASD often struggle with sensory overload, which can interfere with motor learning. Therefore, the preschool setting should include clearly defined activity zones, minimal visual clutter, and access to sensory regulation tools such as weighted items, tactile materials, or quiet spaces. A well-organized environment reduces anxiety and allows the child to focus on motor tasks with greater confidence and engagement.

A key component of motor development in preschool institutions is the integration of structured physical activities into the daily routine. Regular movement sessions, adapted physical education, and guided motor play help children develop balance, coordination, strength, and body awareness. Activities such as obstacle courses, rhythmic exercises, ball games, and simple gymnastics routines provide opportunities for practicing motor planning and sequencing. Importantly, these activities must be broken down into small, manageable steps, accompanied by visual cues and clear demonstrations. Children with ASD often rely on visual information more than verbal instructions, making modeling and visual supports essential tools for motor learning.

Fine motor development is equally important, as it directly influences self-care skills, pre-academic readiness, and communication. Preschool educators should incorporate activities that strengthen hand muscles, improve finger dexterity, and develop bilateral coordination. Tasks such as threading beads, manipulating playdough, drawing, cutting, and assembling simple constructions not only enhance fine motor skills but also support attention, perseverance, and sensory integration. For many children with ASD, fine motor tasks require additional time

All rights reserved | CC BY-SA 4.0

and repeated practice, and educators must provide consistent encouragement and positive reinforcement to maintain motivation.

Motor competencies are also closely linked to social and communicative development. Group motor activities create natural opportunities for interaction, imitation, and shared attention. Children learn to follow rules, take turns, and coordinate their actions with peers. For children with ASD, who often struggle with spontaneous social engagement, structured motor games can serve as an accessible and motivating context for practicing social behaviors. Educators play a crucial role in facilitating these interactions, providing gentle guidance, modeling appropriate responses, and ensuring that each child experiences success.

An essential aspect of forming motor competencies is collaboration between preschool teachers, physical education specialists, occupational therapists, and psychologists. Interdisciplinary teamwork ensures that motor development goals are aligned with the child's overall educational and therapeutic plan. Occupational therapists, for example, can assess sensory-motor integration and recommend individualized strategies, while psychologists help address behavioral or emotional barriers that may interfere with participation in motor activities. Regular communication with parents strengthens the continuity of support, allowing motor skills practiced in preschool to be reinforced at home.

The use of individualized motor development programs is particularly important for children with ASD. Such programs should be based on comprehensive assessment, including evaluation of gross and fine motor skills, sensory processing, motor planning, and functional abilities. Goals must be realistic, measurable, and tailored to the child's developmental level. For some children, the focus may be on basic motor patterns such as jumping, climbing, or catching a ball; for others, on more complex tasks such as coordinated movement sequences or self-care routines. Progress should be monitored regularly, and interventions adjusted according to the child's evolving needs.

Another important dimension of motor development is the integration of sensory-motor activities into everyday preschool routines. Sensory-motor breaks, movement-based transitions, and short physical warm-ups help regulate arousal levels, improve attention, and prepare children for learning. Many children with ASD benefit from proprioceptive and vestibular input, which can be incorporated through activities such as swinging, pushing, pulling, or jumping. These activities not only support motor development but also enhance emotional regulation and reduce challenging behaviors.

The formation of motor competencies in children with ASD also contributes to the development of independence. Mastery of motor skills such as dressing,

All rights reserved | CC BY-SA 4.0

feeding, and hygiene increases the child's autonomy and reduces dependence on adults. Preschool institutions must therefore include functional motor training as part of daily routines, providing children with opportunities to practice self-care in a supportive and structured environment.

In conclusion, the formation of motor competencies in preschool children with autism spectrum disorders is a multifaceted process that requires a combination of structured physical activities, sensory-motor integration, individualized instruction, and interdisciplinary collaboration. Motor development is not an isolated domain but a foundation that supports cognitive, communicative, social, and emotional growth. By creating a supportive environment, using evidence-based strategies, and engaging families in the process, preschool institutions can significantly enhance the developmental outcomes of children with ASD. Early, consistent, and well-designed motor interventions not only improve physical abilities but also contribute to the child's overall well-being, readiness for school, and successful inclusion in educational and social contexts.

REFERENCES:

[1] Bhat, A. N. (2021). Motor impairment in autism spectrum disorder: A synthesis of research and clinical practice. Developmental Medicine & Child Neurology, 63(6), 653–660.
[2] Fournier, K. A., Hass, C. J., Naik, S. K., Lodha, N., & Cauraugh, J. H. (2010). Motor coordination in autism spectrum disorders: A synthesis and meta-analysis. Journal of Autism and Developmental Disorders, 40(10), 1227–1240.
[3] Case-Smith, J., & Arbesman, M. (2008). Evidence-based review of interventions for autism used in occupational therapy. American Journal of Occupational Therapy, 62(4), 416–429.
[4] Provost, B., Lopez, B. R., & Heimerl, S. (2007). A comparison of motor delays in young children with autism spectrum disorder, developmental delay, and developmental concerns. Journal of Autism and Developmental Disorders, 37(2), 321–328.

All rights reserved | CC BY-SA 4.0