

**METHODS OF ORGANIZING MOVEMENT-BASED GAMES THAT DEVELOP
THE COGNITIVE ABILITIES OF PRESCHOOL CHILDREN**

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Abstract

This study explores the role of movement-based games in enhancing the cognitive development of preschool-aged children, focusing on the context of Uzbekistan. Early childhood is a critical period for cognitive growth, and physical activity plays a vital role in strengthening key cognitive functions such as working memory, attention control, and problem-solving.

Keywords: Cognitive development, preschool children, movement-based games, early childhood education, physical activity, memory, Uzbekistan.

Introduction

In Uzbekistan, as in many countries around the world, increasing attention is being paid to the early childhood period as a foundation for lifelong learning and development. The preschool years — typically considered the ages between 3 and 6 — are a critical stage when children experience rapid growth in their cognitive, emotional, social, and motor skills. Recognizing the importance of this developmental window, Uzbekistan's national education reforms have prioritized improving the quality of early childhood education, including the use of play-based approaches that support holistic development.

Cognitive development — encompassing abilities such as memory, attention, reasoning, and language — is particularly sensitive to stimulation during the preschool years. According to global research and local studies conducted by Uzbek scholars, physical activity and movement-based play can significantly contribute to the development of cognitive functions. In line with the State Program for the Development of Preschool Education in Uzbekistan, educators are increasingly encouraged to integrate movement and physical games into the learning process.

Movement-based games are not only enjoyable for children but also promote essential cognitive skills such as decision-making, problem-solving, and cooperation. Games that involve following instructions, adapting to new rules, or remembering sequences help stimulate the brain and build executive functions. When these games are organized thoughtfully and tailored to the developmental level of children, they become powerful tools for enhancing cognitive readiness for school.

Literature Review

The role of movement and play in cognitive development has been a focus of early childhood research for decades. Pioneering theorists such as Jean Piaget and Lev Vygotsky laid the foundation for understanding how children construct knowledge through active engagement with

their environment. Piaget emphasized the importance of sensorimotor and preoperational stages, where physical interaction and symbolic play are crucial for developing mental schemas. Vygotsky, on the other hand, highlighted the role of social interaction and guided participation in cognitive growth, proposing that play allows children to perform beyond their usual capabilities with the support of more knowledgeable others.

Modern research supports these early theories and further demonstrates the link between physical activity and brain development. Studies by Diamond (2015) and Best (2010) found that movement-based activities enhance executive functions such as working memory, inhibitory control, and cognitive flexibility—skills that are foundational for learning and academic achievement. For example, structured physical games that require children to remember sequences, adapt to rule changes, or work in teams are shown to improve attention spans and problem-solving abilities.

In the context of early childhood education in Uzbekistan, recent reforms have embraced international best practices while aligning with local cultural values. The 2019–2023 *State Program for the Development of the Preschool Education System* emphasizes the integration of child-centered and activity-based approaches in preschool curricula. Uzbek researchers such as R.A. Kadirova and N.K. G'anieva have highlighted the importance of active games in the cognitive and emotional development of preschoolers, noting that such games stimulate curiosity, enhance memory, and promote logical thinking.

Moreover, the Ministry of Preschool and School Education of Uzbekistan has promoted the development of innovative teaching materials and training programs that encourage educators to use movement-based methods in classroom routines. These initiatives are aligned with UNESCO's guidelines on early childhood education, which advocate for learning through play as a universal principle.

Despite the growing body of research, there remains a need for more systematic studies on the specific types of movement-based games that are most effective in the Uzbek context. This includes analyzing the cultural relevance of games, the training of educators, and the availability of physical space and materials in kindergartens. Addressing these gaps can further enhance the implementation of effective, evidence-based strategies that support children's cognitive development through active play.

Research Analysis

The primary objective of this research is to analyze the effectiveness of movement-based games in promoting cognitive development in preschool-aged children in Uzbekistan. This analysis synthesizes findings from various studies and provides an in-depth evaluation of how these games can be structured and implemented to optimize cognitive benefits.

1. Cognitive Benefits of Movement-Based Games

Research indicates that physical activity has significant effects on brain function and cognitive development. Active play helps improve executive functions, including working memory, cognitive flexibility, and inhibitory control (Diamond, 2015; Best, 2010). Movement-based games such as obstacle courses, memory-based activities, and team-oriented tasks engage

children's brains in complex ways that stimulate problem-solving, spatial awareness, and memory retention.

In Uzbekistan, the integration of movement-based activities into early childhood education has been gradually increasing, especially in urban areas. A study by Kadirova and G'anieva (2020) highlights that children who participated in structured physical games demonstrated enhanced memory retention and quicker adaptation to new learning concepts. These findings support the theory that motor activities directly influence brain development, particularly in regions responsible for learning and decision-making.

2. Types of Movement-Based Games and Their Cognitive Impact

The structure and type of movement-based games significantly impact their cognitive benefits. Games that require children to follow multi-step instructions, engage in social interactions, or use problem-solving skills are particularly effective. For example, a simple game like "Simon Says" or obstacle courses that require following specific sequences can improve working memory and attention control.

In Uzbekistan, educators have developed culturally relevant games that incorporate traditional Uzbek music and dance. These games, while promoting physical coordination, also stimulate language development as children learn and remember new vocabulary through song and rhythm. Research by Salimov (2021) shows that these culturally contextualized games not only help children develop cognitive skills but also foster a sense of cultural identity.

3. Educator Training and Implementation

One of the key challenges in implementing movement-based cognitive games is the level of training educators receive. While many preschool teachers are trained in basic pedagogical methods, the specific skills required to design and implement movement-based games effectively are often overlooked. A study by Nurmatova and Khakimova (2019) revealed that teachers who underwent specialized training in activity-based learning were more likely to engage children in activities that promoted cognitive development. The training focused on using movement to enhance memory, attention, and problem-solving skills, leading to more successful implementation of these activities in classrooms.

Conclusion

In conclusion, movement-based games provide significant cognitive benefits for preschool-aged children in Uzbekistan. These games, when organized thoughtfully and aligned with developmental goals, support cognitive functions such as memory, attention, and problem-solving. However, to fully harness the potential of these games, it is essential to provide targeted educator training, ensure the availability of appropriate play spaces, and incorporate culturally relevant elements into the activities. Further research is required to explore the long-term impact of movement-based games and to develop more robust evaluation frameworks for assessing their effectiveness in diverse educational settings.

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