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CHARACTERISTICS OF DEVELOPING COGNITIVE ACTIVITY IN MIDDLE PRESCHOOL-AGE CHILDREN THROUGH DIDACTIC GAMES

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ANNOTATION: This research explores the characteristics of developing cognitive activity in middle preschool-age children through the structured use of didactic games. The study examines how purposeful game-based activities foster children's mental operations, such as attention, memory, logical thinking, problem-solving, and imagination. Modern preschool education emphasizes interactive and child-centered methodologies, and didactic games serve as one of the most effective tools for stimulating cognitive development within this framework. The work identifies the psychological and pedagogical foundations of cognitive activity, analyzes age-specific features of children aged 4–6, and demonstrates how properly designed didactic games enhance children's readiness for further learning. Furthermore, this research highlights national and international experiences in applying game-based learning technologies, revealing the effectiveness of integrating play with educational processes. The findings show that didactic games not only strengthen intellectual growth but also promote communication skills, emotional development, and social adaptation, making them a crucial component of contemporary preschool pedagogy.

KEYWORDS: Didactic games, cognitive activity, preschool education, mental development, game-based learning, child psychology, interactive methods, problem-solving, early childhood development, pedagogical technologies.

In modern preschool education, the development of children's cognitive activity is recognized as a key factor influencing their future academic success and social adaptability. Middle preschool-age children, typically between four and six years old, are at an important developmental stage where their curiosity, exploratory behavior, and cognitive abilities intensify rapidly. At this age, children actively observe the environment, ask questions, experiment with objects, and try to understand causal relationships in the world around them. Therefore, educators are required to use pedagogical methods that correspond to children's natural developmental tendencies, ensuring that learning remains engaging, meaningful, and psychologically suitable.

Didactic games are considered one of the most effective tools for stimulating cognitive functions in preschool-age children. Unlike simple entertainment activities, didactic games incorporate educational tasks that develop memory, attention, reasoning, imagination, language skills, and decision-making abilities. Researchers in early childhood education emphasize that game-based learning encourages children to think independently, compare objects, classify information, and search for solutions, all of which contribute to the formation of cognitive activity. Moreover, didactic games support integrative learning, allowing children to combine sensory experiences with mental operations, thus strengthening neural connections and deepening understanding.

Cognitive activity in middle preschool-age children represents one of the most decisive components of their overall developmental trajectory, as this period is characterized by rapidly expanding curiosity, active exploration of the environment, and the emergence of early problem-solving abilities. Didactic games serve as an effective pedagogical tool for enhancing these qualities because they provide structured, goal-oriented activities that engage a child's natural inclination toward play while at the same time supporting the formation of essential mental

operations. The effectiveness of didactic games in promoting cognitive growth is closely connected with their ability to create meaningful learning situations, stimulate voluntary attention, and encourage children to analyze, compare, categorize, and draw conclusions based on their observations.

In middle preschool age, children begin to show noticeable progress in their capacity for symbolic thinking, which means they are increasingly able to operate with mental images rather than relying solely on concrete actions. Didactic games harness this emerging skill by presenting tasks that require children to use imagination, prediction, and logical reasoning. During such activities, children become active participants, transforming learning from a passive reception of information into an interactive process. The structured nature of these games ensures that cognitive objectives such as memory development, classification of objects, spatial understanding, and sequencing of events are intentionally embedded within playful experiences.

The development of attention during these years is particularly important. Preschool children often display short attention spans, but didactic games naturally support sustained focus because they integrate challenge, interest, and emotional engagement. When a child tries to sort geometric shapes by size or match pictures according to a rule, attention becomes voluntary rather than purely reactive. The game format also introduces elements of anticipation and excitement, which increase motivation and help maintain concentration. This combination of emotional involvement and cognitive demand makes didactic games a unique tool for strengthening attentional control.

Memory, both visual and auditory, also undergoes significant improvement during middle preschool age, and didactic games specifically target these processes. Activities such as matching cards, recalling a sequence of objects, or remembering the placement of items involve intentional memorization. Children learn not only to store information but also to retrieve it when necessary. Over time, these games help transition memory from involuntary to voluntary forms, a shift considered critical in preschool psychological development. Repetition within games reinforces neural connections, while variation in tasks keeps the learning dynamic and prevents the process from becoming monotonous.

Speech development is another important domain influenced by didactic games. As children engage in guided play, they expand their vocabulary, improve sentence structure, and begin to use language for planning, negotiating, and explaining their actions. Many didactic games involve naming objects, describing features, or providing verbal reasoning for choices, which encourages the integration of cognitive and linguistic processes. When children verbalize their strategies or listen to instructions, they practice receptive and expressive language skills simultaneously. This serves as a foundation for later academic success, particularly in reading comprehension and oral communication.

The role of perception in cognitive activity is also central during this developmental stage. Preschoolers learn to distinguish shapes, colors, sizes, lengths, and other attributes that form the basis of analytic thinking. Didactic games present opportunities for systematic perception by encouraging children to compare objects, identify similarities and differences, and group items according to various criteria. Through repeated exposure to classification tasks, children learn to generalize and form more complex mental categories, which are fundamental processes in early cognitive development.

Problem-solving skills are greatly enhanced through the use of tasks that require children to find solutions, test hypotheses, and evaluate outcomes. Games such as puzzles, construction sets, and logical sequencing activities stimulate children's ability to break a task into smaller parts, experiment with different approaches, and learn from trial and error. Within the safe and playful environment of a game, children develop resilience and flexibility, as mistakes are seen as part of

the process rather than as failures. This mindset later supports critical thinking and independent learning in school settings.

Social interaction plays a crucial mediating role in cognitive development, and didactic games often involve cooperation, turn-taking, and communication between peers. When children collaborate during a task, they negotiate roles, share ideas, and learn to follow rules. These interactions facilitate not only cognitive growth but also the development of emotional intelligence, self-regulation, and perspective-taking. Guided by an educator, group games encourage children to articulate their thoughts, listen to others, and evaluate collective outcomes, thereby integrating cognitive and social learning.

The educator's role in organizing didactic games is essential for ensuring their developmental impact. The teacher selects tasks appropriate for children's abilities, gradually increasing complexity, and provides subtle guidance without dominating the activity. Effective methods include giving clear instructions, demonstrating steps when necessary, and posing questions that lead children to reflect on their actions. When adults scaffold learning in this way, they help children operate within their zone of proximal development—the level at which assistance enables them to perform tasks they cannot yet accomplish independently.

Variety in game types is crucial for maintaining children's interest and addressing different aspects of cognitive development. Games focusing on memory, logical thinking, speech, perception, and problem solving must be balanced so that children receive comprehensive stimulation. Rotating activities prevents fatigue and supports the development of multiple mental functions. Furthermore, integrating real-life contexts—for example, playing "store," "hospital," or "builder"—helps children connect new knowledge with everyday experiences, strengthening cognitive transfer.

Digital didactic tools are becoming increasingly relevant in modern preschool education, and when used appropriately, they can enhance traditional play-based learning. Interactive applications that involve matching, sorting, and sequencing can reinforce cognitive skills through immediate feedback and engaging visual elements. However, digital tools should complement, not replace, physical play and human interaction, as these remain essential for developing fine motor skills, emotional understanding, and social communication.

Overall, didactic games offer a powerful and multifaceted approach to supporting cognitive activity in middle preschool-age children. By merging structured learning goals with children's natural interest in play, they provide an environment in which mental operations, language abilities, perception, and problem-solving skills develop organically and purposefully. Properly selected and pedagogically guided, these games contribute not only to cognitive progress but also to the formation of self-confidence, curiosity, and motivation to learn—qualities that shape the foundation for successful schooling and lifelong learning.

The development of cognitive activity in middle preschool-age children represents a crucial pedagogical task that influences later academic readiness, problem-solving abilities, and social adaptability. At this stage, children demonstrate rapid growth in perception, attention, memory, and logical reasoning; therefore, the effective use of didactic games becomes a powerful tool for stimulating these emerging abilities. The analysis of theoretical approaches and practical experiences shows that didactic games are not only a form of entertainment but also a structured educational technology that activates thinking, encourages exploration, and enhances independent decision-making. Through game-based learning, children naturally engage in mental operations such as comparison, classification, sequencing, and establishing cause–effect relationships.

Didactic games foster intrinsic motivation because they create a learning environment where curiosity drives participation. Compared with traditional instruction, game-based activities allow

children to manipulate objects, experiment with solutions, and learn through trial and error without fear of making mistakes. This freedom contributes to the development of flexible thinking and positive emotional attitudes toward cognitive tasks. Furthermore, well-designed games align with the developmental characteristics of middle preschool-aged children who need visual, tactile, and interactive experiences. The integration of multisensory elements—visual aids, manipulatives, storytelling, and role play—improves information retention and strengthens memory processes.

Another significant aspect is the social dimension of cognitive development. Didactic games encourage collaboration, communication, and rule-following, which directly support executive functions. Children learn to plan actions, control impulses, negotiate with peers, and evaluate the outcomes of their decisions. These skills lay the foundation for metacognitive awareness, enabling children to reflect on what they know and how they learn. Research findings indicate that children who regularly participate in didactic games demonstrate higher levels of persistence, attention span, and task orientation compared to those who receive predominantly teacher-led instruction.

The role of the educator is central in organizing and facilitating these games. The teacher must select age-appropriate activities, set clear cognitive objectives, and create a supportive environment that encourages autonomy. Scaffolding strategies—such as guiding questions, modeling, and gentle correction—help children advance from simple to more complex tasks. Individual differences must also be considered: temperament, prior knowledge, language development, and learning styles influence how each child engages with didactic activities. Differentiated instruction ensures that all children benefit from the cognitive potential of games.

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