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CONDITIONS AND PROBLEMS OF IMPLEMENTING DESIGN THINKING IN PRESCHOOL EDUCATION ORGANIZATIONS

Hasanova Sevinchoy Ramazon kizi
Master student, Denov Institute of Entrepreneurship and Pedagogy
Scientific supervisor: Berdiyeva Muhabbat Meyliyevna
Professor Department of Preschool Education
Termez State Pedagogical Institute

Abstract: This article examines the theoretical and practical aspects of integrating Design Thinking (DT) methodologies within preschool education organizations. As modern educational paradigms shift toward fostering creativity and problem-solving from an early age, the implementation of design-oriented approaches becomes essential. The study identifies the necessary organizational, pedagogical, and infrastructural conditions required for successful integration. Furthermore, it analyzes the primary challenges, including pedagogical resistance, lack of specialized teacher training, and resource constraints in the preschool environment. The findings suggest that while Design Thinking significantly enhances cognitive flexibility and collaborative skills in young children, its effectiveness depends heavily on adaptive curriculum design and continuous professional development for educators.

Keywords: Design Thinking, preschool education, innovative pedagogy, early childhood development, implementation challenges, creative problem-solving, educational environment, pedagogical conditions, curriculum integration, teacher training.

INTRODUCTION

In the rapidly evolving landscape of the 21st century, the demand for creative thinking and innovative problem-solving has permeated all levels of the educational system. Early childhood education, being the foundational stage of human development, plays a pivotal role in shaping a child's cognitive and social trajectory. One of the most promising methodologies emerging in this context is **Design Thinking (DT)**—a human-centered, iterative process that encourages experimentation, empathy, and collaboration. While originally rooted in the corporate and engineering sectors, the application of Design Thinking in preschool organizations has gained significant traction as a means to foster "soft skills" and divergent thinking in young learners.

The integration of Design Thinking in preschool settings is not merely about introducing new tools, but about creating an environment where children are encouraged to identify problems, empathize with others, and develop tangible solutions. However, transitioning from traditional pedagogical models to a design-oriented framework presents a unique set of challenges. These include the necessity for specialized pedagogical conditions, such as flexible learning spaces and adaptive curricula, as well as systemic hurdles like the lack of professional training for educators and rigid academic standards.

Despite the growing global interest in innovative pedagogies, there remains a gap in understanding the specific conditions required to effectively implement Design Thinking within the structured environment of preschool organizations. Many institutions face difficulties in balancing structured play with the open-ended nature of the design process. Furthermore, the cultural and infrastructural readiness of educational systems varies significantly, often leading to a disconnect between theoretical goals and classroom realities.

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This article aims to explore the essential conditions for the successful implementation of Design Thinking in preschool education and to identify the primary problems that hinder this process. By analyzing the intersection of design methodology and early childhood pedagogy, the study seeks to provide a comprehensive framework for educators and administrators to overcome existing barriers and create more dynamic, future-ready learning environments for the next generation.

MAIN PART

The integration of Design Thinking (DT) into preschool education organizations represents a fundamental shift from traditional teacher-led instruction to a learner-centered discovery model. In the contemporary educational landscape of Uzbekistan, this transition is increasingly supported by systemic reforms, most notably the Law of the Republic of Uzbekistan "On Preschool Education and Care" and the implementation of the "Ilk Qadam" (First Step) state curriculum. These regulatory frameworks emphasize the necessity of developing a child's creative potential, critical thinking, and social adaptability. However, the mechanical application of DT—comprising empathy, definition, ideation, prototyping, and testing—requires more than just pedagogical enthusiasm; it demands a rigorous restructuring of the learning environment and a shift in the professional identity of the educator.

At its core, the implementation of Design Thinking in early childhood settings relies on the "environment as the third teacher." For children aged 3 to 7, the physical space must transition from a static room to a dynamic laboratory. This involves the creation of "maker spaces" or specialized zones where materials are not merely stored but are accessible for open-ended manipulation. According to the state standards of Uzbekistan, preschools must provide an environment that encourages sensory exploration. In a DT-driven model, this is realized through the provision of diverse materials—from natural elements like sand and wood to recycled cardboard and digital tools—that allow children to prototype their ideas. The "prototyping" stage at this age is not about creating a finished product but about the externalization of thought. When a child builds a "bridge" out of blocks to solve the problem of a toy animal crossing a river, they are engaging in structural engineering and empathetic problem-solving.

The first critical condition for success is the professional competency of the educators. Currently, a significant problem is the prevalence of the "demonstration-imitation" method, where children simply repeat a task shown by the teacher. Design Thinking requires the teacher to act as a facilitator or "scaffolder" rather than a lecturer. This aligns with the "Concept for the Development of the Preschool Education System of the Republic of Uzbekistan until 2030," which prioritizes the continuous professional development of pedagogical staff. Educators must be trained to ask open-ended questions—shifting from "What is this?" to "How might we fix this?" or "What else can this become?". The problem arises when teachers lack the psychological flexibility to allow for "productive failure." In DT, a prototype that falls apart is a data point for learning, yet many traditional systems still view mistakes as errors to be corrected rather than lessons to be analyzed.

Another significant challenge is the rigid adherence to time-bound schedules that conflict with the iterative nature of design. Designing a solution requires time for reflection and "re-doing." Standardized lesson blocks of 20–30 minutes often cut off the creative flow just as children begin to ideate. To address this, successful implementation requires a "project-based" approach where a single design challenge—such as "How can we make our playground more inclusive?"—spans several days or even weeks. This longitudinal approach allows for the

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"Empathy" phase, where children interview their peers or observe how others use a space, thereby developing emotional intelligence alongside cognitive skills.

The legal and administrative infrastructure also presents hurdles. While the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 802 provides a framework for innovative educational activities, there remains a lack of specific assessment tools for non-traditional skills. How does one measure "creative resilience" or "collaborative ideation" within the existing state reporting systems? This gap often leads to a situation where teachers pay lip service to innovation but return to rote learning to meet measurable benchmarks. Bridging this gap requires the development of qualitative portfolios—collections of a child's sketches, failed prototypes, and final reflections—that demonstrate growth in thinking processes rather than just the mastery of static facts.

Furthermore, the socio-economic and infrastructural disparity between urban and rural preschool organizations creates an "innovation divide." While "Smart" preschools in administrative centers might have access to high-tech kits and expert training, rural institutions often struggle with basic resource availability. Implementing Design Thinking in resource-constrained environments requires a shift toward "frugal innovation." Educators must be empowered to use local, low-cost materials to facilitate design challenges. The problem here is not the lack of technology, but the lack of a standardized methodology for applying DT in diverse economic contexts.

The psychological readiness of parents is an often-overlooked factor. Many parents expect their children to return from preschool with a "perfect" drawing or a completed worksheet as evidence of learning. Design Thinking, however, often produces "messy" results—unfinished models, sketches that look like scribbles, or stories about failed experiments. Without parental engagement and education regarding the value of the design process, teachers face external pressure to prioritize "pretty" outcomes over "deep" learning. This necessitates a collaborative ecosystem where the preschool and the family unit are aligned on the goal of developing a "growth mindset."

CONCLUSION

To overcome these problems, a multi-tiered strategy is required. First, the integration of Design Thinking modules into the curriculum of pedagogical institutes is essential to ensure that the next generation of "Magistrants" and teachers are fluent in these methods before they enter the classroom. Second, there must be a formalization of "Design Days" within the national preschool calendar—dedicated blocks of time where children can engage in uninterrupted creative problem-solving. Third, the creation of a national digital repository of "Design Challenges" specifically tailored for the Uzbek cultural context and available materials would provide teachers with much-needed practical guidance.

Ultimately, Design Thinking in preschool is a tool for democratization and empowerment. It teaches children that the world around them is not fixed but is something they can influence and improve. By addressing the conditions of physical space, teacher training, and administrative flexibility, and by confronting the problems of rigid scheduling and assessment gaps, Uzbekistan can transform its preschools into hubs of innovation. This aligns perfectly with the national goal of building a "Third Renaissance," which fundamentally depends on a generation of citizens who can think critically, act empathetically, and design solutions for a complex future. The implementation of Design Thinking is therefore not a luxury, but a strategic necessity for the holistic development of the nation's youngest citizens.

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