

METHODOLOGY FOR DEVELOPING LOGICAL THINKING AND CREATIVITY IN
PRESCHOOL CHILDREN THROUGH GAMING PLATFORMS

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Abstract. This article proposes a practical methodology for preschool settings: selecting developmental targets, mapping them to game mechanics, organizing scaffolding and dialogue, balancing screen-based and off-screen play, differentiating tasks, and assessing progress through observation of strategies rather than only “right answers.” The approach is grounded in evidence-based early learning principles (learning trajectories, guided play, and intentional use of technology), and it emphasizes that the educational value of gaming platforms depends less on “how modern” the tool is and more on how wisely adults structure the experience.

Keywords: preschool education; logical thinking; creativity; guided play; game-based learning; gaming platforms; early mathematics; problem solving.

INTRODUCTION

Preschool children are born researchers: they test, combine, break, rebuild, and ask “why” with the persistence of a scientist and the negotiation skills of a lawyer. The problem is not that children lack logical thinking and creativity—the problem is that adults sometimes separate them into different boxes: logic belongs to “serious learning,” creativity belongs to “free play,” and both must stay politely apart. In real development, however, logical thinking and creativity grow together. When a child builds a bridge from blocks, creativity produces possibilities (“What if I use the big blocks as pillars?”) and logic checks them (“It falls—so that plan doesn’t work. What else?”). When a child plays a store game, creativity invents the scenario and roles, while logic organizes quantities, comparisons, and fair sharing. A well-designed learning environment does not force children to choose between “being imaginative” and “thinking correctly”; it teaches them to be imaginative and reasonable at the same time [1].

Gaming platforms are one of the most realistic ways to create this environment in today’s preschool education. Here “platform” should be understood broadly: not only tablets and apps, but any stable system of games with repeatable mechanics, rules, materials, feedback, and progression—board games, role-play stations, construction kits, movement circuits, interactive whiteboards, or digital learning games. These platforms can intensify children’s engagement because games naturally provide goals (“win,” “build,” “solve,” “find”), constraints (rules), and immediate feedback. Yet engagement alone is not education; it is just noise with smiling. The educational power appears when games are embedded in intentional pedagogy—especially guided play, a middle path between direct instruction and free play, where adults set learning goals and structure the environment while children maintain meaningful control over exploration [2].

MATERIALS AND METHODS

A practical methodology begins with clear developmental targets—otherwise, the “gaming platform” becomes a beautifully decorated carousel: lots of movement, little destination. Logical thinking in preschool age includes classification (sorting by attributes), seriation (ordering by size/length/weight), sequencing and pattern recognition, part–whole relations, cause–effect reasoning, and early proof-like behaviors (explaining “how I know” with objects or examples). Creativity includes fluency (many ideas), flexibility (different categories of ideas), originality (novel combinations), and elaboration (adding details and improving a plan). The teacher’s task is to design game experiences where these appear as necessary actions, not optional decorations. For example, if a game requires children to sort “treasures” into chests using a hidden rule, classification and hypothesis testing become necessary; if a construction challenge requires building a stable tower that holds a toy, children must generate alternatives and test them logically; if a story-based digital game asks children to choose routes with constraints, they must plan, predict, and adapt strategies. Early learning guidance emphasizes that young children are capable of developing strong competencies when they have opportunities, well-chosen tasks, and supportive instruction, and that early mathematics and reasoning are especially important for later school success [3, 4].

RESULTS AND DISCUSSION

The next step is to map targets to game mechanics, because mechanics are the “hidden curriculum” that shapes thinking. Logical thinking grows when mechanics require rule-following and rule-discovery, comparison, error detection, and strategic planning. Creativity grows when mechanics allow multiple solutions, open-ended construction, role creation, and “what-if” experimentation. Many preschool games already contain these mechanics, but they often remain unused because adults focus only on completion (“Finish the puzzle”) instead of thinking quality (“Explain why this piece fits”). A useful rule of thumb is: if a child can succeed by random clicking or copying a neighbor, the game is not yet teaching logical thinking; if a child must represent the situation mentally, choose a plan, test it, and revise, then the platform is doing real cognitive work [5].

CONCLUSION

Developing logical thinking and creativity in preschool children through gaming platforms is not a matter of “adding more games.” It requires a methodology that treats games as structured learning environments: clear targets, intentional mechanics, guided play pedagogy, progressive challenge, rich language prompts, blended digital–physical cycles, differentiation, and observation-based assessment. When implemented well, gaming platforms become laboratories where children generate ideas creatively, test them logically, revise strategies, and learn to explain their thinking. When implemented poorly, they become either chaotic entertainment or passive screen exposure—both expensive ways to achieve very little. The main practical message is simple: the platform does not teach; the pedagogy teaches. With guided play, thoughtful progression, and balanced technology use, preschool educators can reliably cultivate children who are both imaginative and rational—an excellent combination for school, life, and probably future negotiations with parents about bedtime.

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