

**THE IMPORTANCE OF THE CONTINUITY BETWEEN PRESCHOOL AND
PRIMARY EDUCATION IN DEVELOPING LOGICAL THINKING ABILITY**

Abdiyeva Zilola

Teacher at the Asia International University

Abstract: The development of logical thinking is one of the key goals in early childhood and primary education. However, the degree to which preschool (early childhood) education and primary (elementary) schooling are linked — that is, the continuity and alignment of curricula, pedagogy, assessment and learning environments — has significant implications for children’s capacity to develop reasoning, problem-solving and logical thinking skills. This paper examines the importance of the seamless transition and coherence between the preschool and primary education systems, explores how continuity supports the nurturing of logical thinking, and reviews research evidence, pedagogical practices and policy implications. It argues that when the preschool and primary phases are treated as connected, rather than siloed, children benefit from cumulative cognitive development, reduced learning-gaps, and enhanced capacity for logical reasoning. Finally, it offers recommendations for practice and policy to strengthen the early-to-primary education continuum in order to support logical thinking development.

Key Words: logical thinking, reasoning skills, cognitive development, early childhood education, primary education, continuity, transition, curriculum alignment, seamless learning, educational policy

In an era of increasingly complex demands on children’s thinking, the ability to reason, analyse, reflect, and make logical connections is more vital than ever. Logical thinking — the capacity to apply principles of coherence, classification, deduction, pattern recognition and problem-solving — underpins later success not only in mathematics and science but in all domains of learning and life. The early years of education, spanning preschool through to the early grades of primary school, constitute an especially critical period for laying the foundations of logical thinking.

Yet in many education systems, preschool (or early childhood education) and primary school operate as two largely separate phases — each with its own curriculum, pedagogy, assessment practices and often minimal articulation between them. This fragmentation can hinder continuity in children’s learning, creating gaps, mismatches in expectations, repetition of content or leaps in demand that children are unprepared for. Conversely, when there is deliberate alignment and continuity — a coherent progression of learning from preschool into primary — the result can be a more stable, cumulative, scaffolded development of children’s thinking skills, including logical reasoning.

Logical thinking in children refers to the capacity to engage in thinking that is ordered, coherent, connected to evidence, able to identify relationships, apply rules, draw valid conclusions, and

solve problems in structured or novel situations. Some key elements include:

- Pattern recognition: identifying regularities or irregularities in sequences of objects, events or ideas.
- Classification and categorisation: grouping entities by shared attributes, distinguishing between sets.
- Deductive reasoning: making conclusions based on general rules or premises.
- Inductive reasoning: inferring generalisations from specific cases.
- Sequencing and ordering: understanding the relationship of events, cause and effect, prior and subsequent.
- Problem decomposition: breaking a complex problem into smaller, manageable parts.
- Relational thinking: linking cause and effect, part-whole, comparative relations (e.g., bigger/smaller, more/less).
- Metacognitive reflection: thinking about one's thinking, checking for coherence and plausibility.

In early childhood and primary years, logical thinking does not emerge fully formed — it develops gradually through experiences, scaffolded interactions, active exploration, and progressively more challenging cognitive tasks. Research shows that fostering logical thinking early supports children's later achievement and adaptability.

The preschool stage (often ages 3–6, or roughly prior to formal schooling) is a pivotal period for children's cognitive, social, emotional and language development. During these years, children acquire foundational cognitive capacities — such as attention control, working memory, cognitive flexibility, exploratory thinking, early numeracy and language — which are prerequisites for logical reasoning. For example, one article notes that “the role of executive function in early childhood development ... is crucial for logical thinking, problem-solving and decision-making.”

Also, preschool environments that emphasise exploration, play, guided inquiry, scaffolded problem-solving and social interaction help children build the dispositions and skills of thinking logically: noticing patterns, asking “why”, making hypotheses, testing their ideas, reflecting on outcomes. Importantly, when children's early experiences are rich and coherent, they develop a cognitive “habitat” that enables later more formal reasoning.

However, when preschool experiences are fragmented, under-resourced or lack connection to the next stage of schooling, the benefit may diminish — what is often described as “fade-out” of early gains. To minimise this, the transition into primary must maintain and build on the preschool foundations rather than restart or neglect them.

Primary school (usually ages 6–11 or grades 1–5/6) is where children's thinking gradually becomes more formalised: more explicit instruction, more abstract reasoning, more demand for systematic problem-solving, reading comprehension, mathematics, science, and higher-order thinking. At this stage, children are expected to apply logical thinking in purposeful content

areas: maths operations, solving story-problems, scientific investigations, analysing texts, making arguments.

Primary education thus plays a critical role in **further developing** logical thinking: by providing tasks of increasing complexity, scaffolded by teachers; by building on children's prior knowledge and reasoning capacity; by promoting metacognitive awareness (e.g., "How did I get this answer? What do I know? What do I still need to learn?"). But for this to succeed, children must enter primary with a strong foundation and the continuity from preschool must enable a smooth progression.

Continuity refers to the degree to which children's learning experiences, frameworks, curricula, pedagogical approaches, assessment practices, learning environments and the adults who support them are aligned, coherent, and interconnected across the transition from preschool to primary school. A lack of continuity may involve abrupt changes in expectations, teaching style, curriculum content, classroom environment, or lack of communication between preschool and primary educators.

Research emphasises that continuity is not merely "doing the same things year after year" but rather orchestrating **progressive alignment** — building on prior learning, scaffolding increasing complexity, consistent pedagogical language, shared understandings of children's learning trajectories. For example, the "continuity of learning" concept emphasises how children benefit from stable, coherent educational trajectories rather than fragmented experiences.

In the early years literature, the "birth to age 8" continuum is often cited as critical for policy and practice — linking the earliest childhood programmes with elementary schooling. Several mechanisms explain how continuity between preschool and primary phases promotes logical thinking:

1. **Cumulative Cognitive Scaffolding**

When preschool and primary phases are aligned, children build on prior learning rather than 'start from scratch'. For instance, if children in preschool have been encouraged to classify and group objects, to ask "why" and notice patterns, then primary teachers can pick up those dispositions and extend them into more formal tasks (e.g., sorting based on multiple attributes, formulating hypotheses, exploring pattern rules). This bridging ensures that logical thinking is continuously nurtured rather than repeatedly reset.

2. **Smooth Transition Reduces Cognitive Load**

A jarring change between preschool and primary — such as different pedagogical styles, unfamiliar tasks and heightened expectations — can impose cognitive load simply by adaptation, leaving less capacity for logical reasoning tasks. Continuity helps children settle

more quickly, frees up cognitive bandwidth, and allows them to engage more fully with reasoning tasks.

3. Shared Pedagogical Language and Strategies

When educators across phases use common language around thinking and reasoning (for example, “What do you notice? What pattern do you see? What would happen if...?”), children develop a consistent thinking vocabulary. This consistent exposure helps them internalise logical thinking processes. For instance, preschool teachers might scaffold children’s pattern notice, and primary teachers continue with pattern generalisation and rule-making.

4. Progressive Complexity and Challenge

Continuity allows for thoughtfully increasing the complexity of tasks and making them logically deeper. For example, preschool might focus on sorting, matching, basic patterning; primary then extends to multi-step problem-solving, classification on multiple variables, deductive reasoning in mathematics. The progression supports development of logical thinking rather than abrupt leaps.

5. Early Identification and Support of Gaps

When preschool and primary are connected, it becomes easier to identify children who may have weak foundations (e.g., working memory, attention, early reasoning skills) and provide timely support so that they are ready for logical thinking tasks in primary. The continuity gives a window of opportunity to intervene early, thereby supporting reasoning development.

6. Motivation and Disposition for Reasoning

Children who experience early success in reasoning-oriented tasks are more likely to develop positive dispositions (confidence, curiosity, persistence) towards thinking challenges. Continuity supports this by reinforcing thinking-oriented practice across phases, rather than discontinuing it.

Why is this continuity significant for logical thinking? Because logical reasoning develops cumulatively — children need opportunities to revisit, refine, deepen, and extend thinking strategies across time. A seamless transition supports such cumulative development; a disjointed one may lead to repetition, gaps, or inconsistent scaffolding.

Empirical research emphasises the importance of continuity in early learning. For instance, a review of “continuity of learning in early childhood development” noted that children who experience consistent, coherent learning environments across early childhood through primary achieve better academic and social-emotional outcomes, and that continuity supports

cumulative learning and reduces learning gaps.

Another source emphasises that creating a “care and education continuum” from infant-toddler years through early grades helps children build a strong foundation for future success.

In terms of logical thinking specifically, research on early reasoning skills and executive functions (working memory, inhibition, cognitive flexibility) emphasises that early capacities are strong predictors of later reasoning and achievement. For example, one article on early education and logical reasoning asserts that “children who demonstrate strong logical reasoning abilities often ... break down problems into smaller steps ...” and that these abilities “are fostered in environments that encourage intellectual exploration, critical thinking, and structured problem-solving.”

Although there is less research that explicitly links continuity across the preschool-primary boundary to logical thinking outcomes, the convergence of these literatures suggests a strong rationale: continuity supports the developmental progression required for logical reasoning.

Conclusion

In sum, the development of logical thinking in children is not simply the product of discrete educational phases or one academic year. Rather, it is the outcome of **cumulative, scaffolded, consistent experiences** across the early years of education — from preschool into primary. Continuity between these phases ensures children build on prior foundations, face appropriate challenges, internalise thinking processes, and develop reasoning dispositions.

When continuity is weak, gains may fade, children may face unnecessary transition stress, and logical thinking development may be impeded. Therefore, educators, policymakers and researchers must attend to the “connective tissue” between preschool and primary phases: aligning curricula, pedagogy, assessment; supporting transitions; focusing on reasoning and thinking processes; and designing systems that view children’s learning as a coherent trajectory rather than segmented blocks.

By doing so, education systems can more effectively nurture children’s capacity to think logically, reason well, solve problems, and thrive in an increasingly complex world.

References:

1. Abdiyeva, Z. H. (2025). BOSHLANG'ICH SINFLARDA TENGLAMALARNI YECHISHGA O'RGATISHNING METODIK ASOSLARI. PEDAGOGIK TADQIQOTLAR JURNALI, 2(2), 321-324.
2. Toyirova, D. S. (2024). BOSHLANG 'ICH SINF O 'QUVCHILARINING RAQAMLI SAVODXONLIK KO 'NIKMLALARINI SHAKLLANTIRISH MAZMUNI. Экономика и

социум, (4-1 (119)), 595-598.

3. Toyirova, D. S. (2024). KICHIK MAKTAB YOSHIDAGI O 'QUVCHILARDA RAQAMLI TEXNOLOGIYALARDAN FOYDALANISH KO 'NIKMALARINI TARBIYALASHNING MAZMUNI. SCHOLAR, 2(5), 106-114.
4. Sattorovna, T. D. (2025). KICHIK YOSHDAGI O 'QUVCHILARDA RAQAMLI SAVODXONLIK KO'NIKMALARINI SHAKLLANTIRISHNING USULLARI. IMRAS, 8(2), 101-104.
5. Toyirova, D. S. (2025). BOSHLANG 'ICH O 'QUVCHILARDA RAQAMLI SAVODXONLIK KO'NIKMALARINI SHAKLLANTIRISHNING MAZMUNI. Экономика и социум, (4-2 (131)), 575-578.
6. Tursunovna, B. G. (2025). BOSHLANG 'ICH SINFI O 'QUVCHILARINING O 'QISH VA SAVODXONLIGINI EGRA BAHOLASH TIZIMI ORQALI ANIQLASH. Recent scientific discoveries and methodological research, 2(2), 90-96.
7. Jo'Rayeva, D. (2025). MAKTABGACHA TA'LIM TASHKILOTLARI TARBIYALANUVCHILARDA EKOLOGIK BILIMNI RIVOJLANTIRISH ISTIQBOLLARI. Экономика и социум, (5-1 (132)), 351-354.