

Exploring Toddlers' Toy Environments Across Cultures: A Mixed-Methods Home Observation Study

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Abstract:

Caregivers shape children's early environments, and toys play a central role—supporting language and social development while reflecting cultural values and parental priorities^{1–5}. Yet, most research relies on self-report surveys, which often miss more fine-grained variability and are susceptible to social-desirability biases⁶. To better understand how toys shape infants' early learning experiences, detailed and direct observations of infants' everyday environments is essential^{7–8}.

We developed a novel coding system to quantify toy environments using video-recorded home tours of 42 toddlers' households across Seoul and Hong Kong⁹. Every visible toy was categorized by type and location (inter-rater Kappa = .84). Parents' spontaneous commentary during tours was transcribed and grounded the meaning-making of our quantitative data.

Across homes, we recorded over 8,900 toys. Toy diversity varied across households (Seoul $M = 14.5$ types; HK $M = 12.8$). Toy quantity (excluding books) increased with child age (+9%/yr, $p < .05$) and home size (+1.1%/m², $p < .01$), while books increased with home size (+1.3%/m², $p < .05$). However, toy diversity was more strongly linked to parental education—particularly fathers'. Interestingly, homes with more toys didn't necessarily have more types of toys, suggesting that abundance doesn't guarantee varied learning opportunities.

While total toy counts were similar across contexts, multivariate regressions revealed differences in specific toy types (e.g., symbolic) were moderately shaped by context. Nevertheless, aforementioned factors such as home size, child age, and especially parental education accounted for most of the variability. Most toys (60–80%) were child-accessible, reflecting a shared emphasis on child-centered spaces. Parents often described deliberate placement to promote engagement (e.g., “I try to put something here because he always grabs stuff”).

This scalable, observational method offers rich insights into early learning environments. Our findings show how space, age, education, and culture shape the everyday materials of children’s early learning environments.

Keywords:

Infants, home learning environment, toys, parenting, culture.