

Making the Right Choice Simple

Selecting Materials for Infants and Toddlers

Ani N. Shabazian and Caroline Li Soga

It is always the children who give shape to things and not the things that shape the children. The various materials are seen in terms of their many different possibilities and transformations.

—Mirella Ruozzi

AS THE OPENING QUOTATION ILLUSTRATES, infants and toddlers are not passive recipients of the world around them but rather are active participants continuously engaging with their environment. Thus, young children need a world that is safe to explore, one where they are encouraged to venture and discover. An infant's world should be replete with opportunities to see, hear, feel, touch, taste, smell, and move. This article explores ways to optimize the various possibilities and transformations materials provide for infants and toddlers (Ruozzi 2010). For our purposes we define *materials* as objects that children interact with, and we particularly value those that encourage physical exploration. We address two questions: (1) What criteria should teachers use to select infant and toddler materials? (2) How should materials look, feel, and sound?

Criteria for selecting play materials

A thoughtful, intentional selection of materials ensures a dynamic and evolving environment that promotes learning. The following considerations apply when choosing materials for infants (birth to 18 months) and toddlers (18 months to 3 years): Are the materials developmentally appropriate and do they encourage active participation? Are they open-ended, healthy and safe, and neutral and nonbiased?

Developmentally appropriate materials

NAEYC states that developmentally appropriate practices take into account what is known about the individual child, what is known about child development and learning, and what is known about the child's culture (NAEYC 2009a). First, in selecting developmentally appropriate materials, it is important to use knowledge about children's individual interests and approaches to learning. This helps ensure that teachers meet and cultivate children's interests and needs. For example, asking 14-month-old Clara to throw a ball forward into a basket five feet away is outside of Clara's zone of proximal development—what she knows and is able

to do. This sets her up for failure and may negatively impact her sense of self-competence. However, Clara enjoys sorting balls into different-size containers. To recognize their own abilities and build their social-emotional development, infants and toddlers need to feel a sense of competence and satisfaction with the materials they engage with on a regular basis (Copple & Bredekamp 2009).

Second, teachers can use their knowledge about children's development to make general predictions about a particular age group and their capabilities and provide materials appropriate for the children's developmental stages (Copple & Bredekamp 2009). For example, group developmental needs dictate placement of materials. For mobile babies, teachers can place similar items, such as assorted jar lids and board books, in small baskets and arrange them in different infant-accessible areas of the room. Low, sturdy, shallow shelves allow mobile infants to pull themselves up and independently get objects. This is an empowering experience. Teachers can help children develop a sense of predictability in their environment and confidently navigate the space by limiting the rotation of materials.

Finally, infants' and toddlers' previous experiences influence how they interact with materials. It is critical for teachers to consider children's social and cultural backgrounds when choosing play materials so they can match and expand children's zone of proximal development (Vygotsky 1978). For example, 26-month-old Lucas's primary home language is Japanese, so the teachers ask his parents to bring in Japanese cookbooks and empty boxes from Japanese foods they eat at home to incorporate into the dramatic play area. Knowing young children's backgrounds helps teachers select materials that reflect children's cultures.

Materials that encourage participation

Eighteen-month-old Shea takes a basket of Duplos from the shelf and puts it on the floor. As she holds one block, she stacks another on top of it, then another, until she has connected three pieces. When she tries to add a fourth piece, the stack falls apart. She tries again and again to add another block, but the stack always falls. Shea exclaims, "Coming apart!"

Infants and toddlers need materials that they can manipulate—try, perhaps fail, rethink, try again, and succeed. Materials that encourage exploration provide feedback and help them learn that they can make things happen. The

cause-and-effect relationship they learn fosters a more in-depth understanding of the world, helping them realize the relationships between actions and reactions. For example, when the Duplos stay up, Shea knows she successfully stacked them. When 8-month-old Robby shakes a rattle, he hears a sound that he made happen. Gerson (2008) found that hands-on experiences provide a framework for infants' understanding of their own actions as well as others that observational experiences do not.

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When including technology, teachers should do so in developmentally appropriate ways. One study demonstrates that children 15 to 21 months old learned more words through a live presentation than from watching a children's television program (Krcmar, Grela, & Lin 2007). This illustrates the importance of actively engaging children instead of relying on electronic or televised materials for children's learning. However, teachers can use some technology with infants and toddlers. Shared intentional technology time can encourage conversations with children and introduce new vocabulary. It can also offer children access to images of friends, family, animals, and objects that they would not otherwise see (NAEYC 2012).

Two-year-old Ben presses the image of a harp on a tablet and a short melody plays. Sonique, 22 months old, joins him. They use an app together to explore sounds different instruments make. Sonique presses the image of the tuba and they both laugh at the sound it makes.

Ben squeals and says, "Tuba make funny noise!"

Exploring the tablet with another child encourages Ben to learn about musical instruments and actively engage with a peer—supporting both his language and social skills.

Open-ended materials

Brain growth happens most rapidly from birth to age 3 (Toga, Thompson, & Sowell 2006). Therefore infants and toddlers need to play with objects that stimulate and enhance brain development. To encourage young children's curiosity, exploration, and learning, effective teachers provide open-ended materials. These types of materials do not have predetermined purposes but instead offer many possibilities. Jack Petrash (2002) writes, "Children who are

About the Authors

Ani N. Shabazian earned her BA from UCLA and her MA in human developmental psychology from Harvard University. She completed her MA/PhD in urban schooling at UCLA. Dr. Shabazian holds a dual appointment at Loyola Marymount University (LMU), serving as assistant professor in the LMU School of Education and as director of the LMU Children's Center. ani.shabazian@lmu.edu

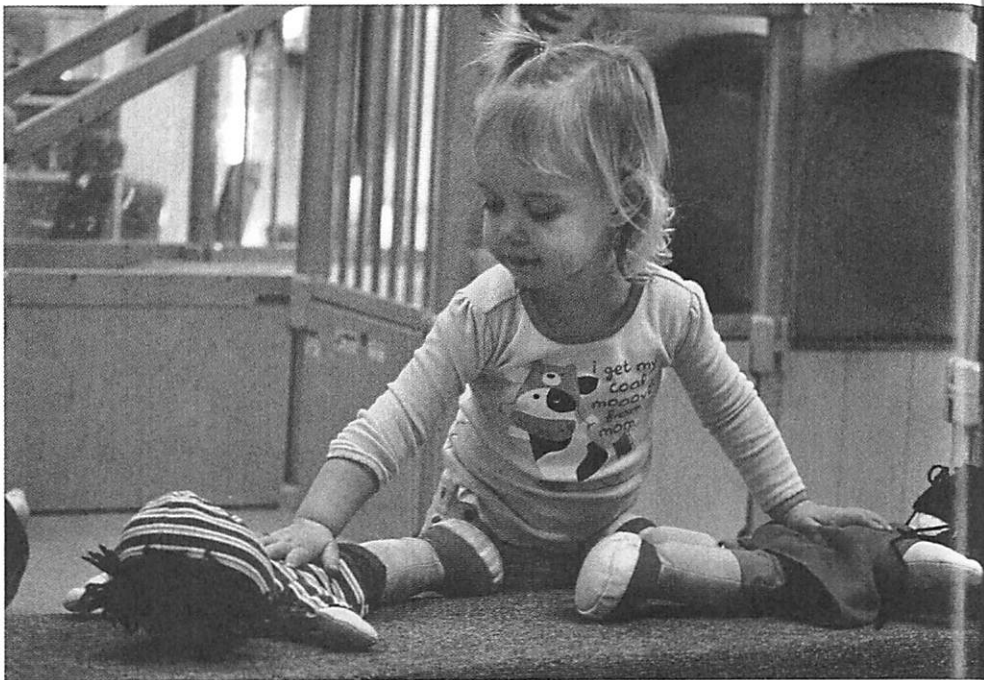
Caroline Li Soga earned her MA in early childhood education from Loyola Marymount University. She is currently associate director of Loyola Marymount University Children's Center, providing high-quality care for children ages birth to 5 years. csoga@lmu.edu

encouraged to play with the same object in a number of different ways develop . . . flexible thinking that can consider a problem from a number of different perspectives” (42). The ability to view a problem from different perspectives is called *divergent thinking* and is a learned process that requires practice (Scott, Leritz, & Mumford 2004). Divergent thinking is a crucial initial step in developing problem-solving skills. Open-ended materials foster divergent thinking skills because children can use them flexibly and with multiple outcomes. Examples of open-ended materials are cardboard tubes, boxes, paper, blocks, and leaves. While it is important that the majority of materials for infants and toddlers be open-ended, not every item needs to be. For example, puzzles or shape sorters have only one outcome but provide immense, age-appropriate feedback to children regarding spatial awareness—how things fit in space and in relation to each other.

Healthy and safe materials

It is important that materials for infants and toddlers be safe and sturdy. Items should be made of durable, resilient, and nontoxic materials such as stainless steel and bamboo. Many products infants and toddlers play with, such as toys, household items, and containers, are made from plastics. A report released by Environment and Human Health, Incorporated (Wargo, Cullen, & Taylor) in 2008 states that some plastics may be harmful to children. Two harmful chemicals found in plastics, bisphenol A (BPA) and the phthalate DEHP, were present in the tissues of most people tested, with the highest concentrations in children. BPA and DEHP were detected in blood, urine, and breast milk. Both compounds cross the blood-brain barrier, which may negatively affect brain formation—particularly in infants’ developing brains and other organs. To limit exposure to these toxins, teachers can use BPA-free plastics and alternatives, such as bamboo baskets, stainless steel bowls and buckets, and wooden cars, trucks, and blocks.

Infants and toddlers can learn a lot by exploring natural materials (Curtis et al. 2013). For example, bark and shells provide wonderful textures for young children to explore. These simple, open-ended, natural materials inspire imaginative play while instilling a connection with nature. This also encourages infants’ and toddlers’ curiosity of the natural world. However, for younger infants whose pri-



mary mode of material exploration is through mouthing, it is important for adults to observe children closely to reduce the risk of choking. Also, teachers may wish to consider the durability of natural materials. For example, thicker, larger shells are more suitable than small, delicate ones.

Conversely, not all manufactured materials are poor choices. Plastics tend to be easier to clean and disinfect than natural materials, and for materials in large volumes, such as Duplos, this may be crucial for appropriate sanitation. Choose fabric items such as cloth teethingers or cloth dolls for toys that are frequently mouthed so that they can be laundered.

Neutral, nonbiased materials

Two-year-old Alyssa frequently plays with boy and girl baby dolls. She swaddles the dolls and uses sign language to sign up to each of them. She then picks up the dolls and pats them on the back, saying “Sh, sh, sh.” Alyssa’s representational play shows her same care and interactions with each doll, regardless of the dolls’ gender or race. However, Todd and Thommessen (2010) found that infants as young as 9 months old showed strong preferences for gender-typical toys. For example, boys were drawn to vehicles and girls were drawn to dolls. It is important for teachers to be cognizant of the messages items relay. Presenting dramatic play materials in pink hues and vehicles in blue hues may suggest that these materials are meant for particular genders. Materials should convey equality and acceptance and not reinforce social or cultural prejudices. As the above anecdote illustrates, teachers can offer baby dolls of both genders, and a balance of different races and

ethnicities. Teachers can also provide multicultural books in many languages and hang pictures that reflect the children's families—traditional and nontraditional—and different cultures and ethnicities.

Materials that support different domains

Effective teachers offer a variety of materials to support differing developmental needs, interests, and abilities of infants and toddlers. For example, to further infants' physical development, teachers provide materials such as balls and risers to address gross motor skills. To foster toddlers' social development, they provide child-size props that mimic common objects in daily life, such as a telephone or a play kitchen. Teachers can provide soft spaces where toddlers can go to be alone, promoting their self-regulation. To expand infants' cognitive development, such as their understanding of object permanence, teachers provide fabrics for peekaboo. In sum, there should be enough varied materials to address all developmental domains equally.

How materials should look, sound, and feel

Children have a predisposition toward beauty, and we try to give visibility to this within their learning processes.

—Mirella Ruozzi

The presentation of materials and the importance of beauty in children's lives is often undervalued or overlooked. Karen Heid states, "Aesthetics enables students to engage deeply in both their personal and interactive learning" (2005, 48). Materials should have simple designs, clean lines, and subtle features. Display items so they are orderly, appealing, and inviting to young children. For example, teachers can put materials in transparent containers or shallow woven baskets so children can easily see what is inside. Containers should have subtle hues—preferably neutral shades—so as not to distract from the materials. NAEYC Physical Environment Accreditation criterion 9A.09 explains that "a welcoming and accessible environment contains elements such as features that moderate visual and auditory stimulation" (NAEYC 2009b).

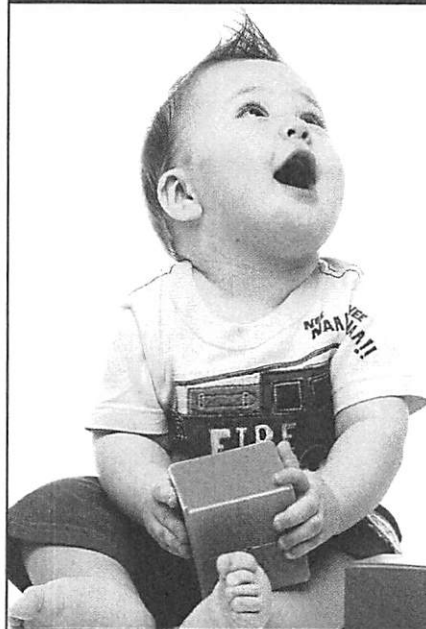
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In addition to aesthetics, the amount of material can also affect children's use of items. Offering too many options at once can overwhelm an infant or toddler and compromise the depth of exploration of materials (Knopf & Welsh 2010). For example, a young infant surrounded by a tube, rattle, soft toy, and a piece of fabric may quickly explore each object by mouthing, touching, or moving it. If a teacher offers the infant only the tube and fabric, she is likely to spend a longer time exploring each item and possibly seeing how the two objects interact with each other.

Four-month-old Lila grasps fabric with her fingers, balls it up, and brings the fabric close to her mouth. She pulls the fabric away from her mouth and then moves it back toward her. Her eyes blink as the fabric moves across her face. She repeats these actions several times with what appears to be clear intention.

Materials' sounds also impact how infant and toddlers explore them. Infants enjoy producing an effect with materials, such as rattles. However, they tend to not like

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loud or sudden noises. Wooden materials, fabrics, and soft toys can absorb sound and minimize ambient noise (Curtis & Carter 2003).

Finally, since children from birth to age 2 are in the sensorimotor stage, a material's feel also matters (Piaget 1952). According to Piaget, during the sensorimotor stage infants and toddlers use their senses to learn about the world around them. Materials should be light and easy to grasp and offer a variety of textures and temperatures. For example, wood is warm and inviting, while plastics tend to be cold. Tactile experiences include opportunities to explore sand, water, mud, and ice.

Conclusion

As infants and toddlers explore their environments, they select and process information, construct hypotheses, and make decisions about the world around them. Materials can invite them to be active learners and participants in their environments. Materials help infants and toddlers learn to solve problems and independently make choices based on their developmental abilities and their individual interests. By making thoughtful, intentional choices, caregivers can offer children materials that create a safe, healthy, engaging, and developmentally appropriate environment.

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