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language and literacy in the early years: why infants need you to read to them

By Susan Bowers, Ph.D.
Northern Illinois University

Much has been written about the importance of literacy and literature-rich environments for preschoolers. We know, for example, preschoolers develop language competence and an interest in reading when their environments are filled with books (Sénéchal et al., 1996; Teale & Yokota, 2000). However, infants also need reading activities and print-rich environments (Wade & Moore, 1996). Researchers have found that working with the smallest of children can sometimes have the biggest impact of all. This article explores some of the research involving infants and books, as well as implications of such studies for your infant/toddler classroom.

Research Themes Shared Social Experience

One theme found in the plethora of research literature focuses on

Reading activities help us make human connections with each other and help facilitate attachment and bonding between parents and their infants.

reading as a *shared social experience*. That is, reading activities help us make human connections with each other and help facilitate attachment and bonding between parents and their infants. When someone reads to them, infants learn to respond to social cues and become aware of language patterns and timing and the importance of mutual turn taking.

In one study, Bus & van IJzendoorn (1997) examined mothers and their infants engaged in a mutual book-reading experience. These researchers found that when a mother engaged in book-reading activities, such as pointing to a picture on a page or reading a brief paragraph, the infant actively responded. In addition, infants were more engaged in the activity when they had a secure attachment to the mother. The reactions of infants in this study provide insight into the kind of attention and focus found in secure attachments.

Attachment refers to an emotional bond an infant develops with another person. Theorists examining attachment suggest this emotional bond is influenced by the kind of interactions the infant has with significant others (Ainsworth, Bell, & Stayton, 1971; Bowlby, 1982). Although much of the early research on attachment was done with mothers, attachments can form with any significant person in a child's life – including fathers, grandparents, and even caregivers. The quality of these attachments depends on the infants' experiences with each of these special people (Berk, 2006).



Ainsworth, Blehar, Waters, and Wall (1978) examined the attachment between mothers and their infants and proposed three categories of attachment. These include *securely attached*, *insecure-avoidant*, and *insecure-ambivalent*. In this study, Ainsworth et al. found infants in the securely attached group had comfortable relationships with their mothers. These infants played while in the presence of the mother, and displayed actions suggesting they were comforted by the mother during times of stress, such as in the presence of a stranger.

The other two categories of infants, on the other hand, showed very different behaviors, such as avoiding the mother during times of stress (*insecure-avoidant*) or showing a mixture of both clinging and

avoidant behaviors during such times (*insecure-ambivalent*). A fourth category of attachment, *disorganized*, was added later by researchers to describe children whose interactions with the caregiver did not seem to show a consistent pattern (Main & Cassidy, 1988).

Securely attached infants are thought to be the most socially competent of the infants examined in this study. These infants display behaviors that indicate they are comfortable with moderate degrees of stress and change. The categories identified by Ainsworth et al. are useful in discovering what can be done to help parents develop these secure attachments with their children. Promoting and modeling reading activities, for example, is one strategy early childhood practitioners can use to help foster stronger bonds and secure attachments between the parents and infants in their programs.

One reading or pre-reading activity we can promote is the use of one-on-one (face-to-face) interactions. Recent studies examining infants as young as four months indicate early language interactions predict later attachment and understanding (Jaffe, Beebe, Feldstein, Crown, & Jasnow, 2001). In these studies, infants were found to be affected by interactions with both mothers and strangers, and these effects appear as early as eight months later, or by one year of age.

Reading Changes Over Time

A second theme found in the research literature focuses on reading as an activity that changes over time (Sénéchal, Cornell, & Broda, 1995). Researchers have found parents adapt their reading strategies to the age level of their infant. This is not unlike motherese (child-directed speech), the act of changing one's tone and pattern of vocal expressions to match newborns' abilities. Research on reading to infants suggests parents of younger infants use more labels, while parents of older infants are more likely to ask questions and wait for responses

from the child. Shared experiences such as reading evoke natural and developmentally-responsive behaviors on the part of parents.

Researchers also find attachment behaviors develop over time, although attachment categories (e.g., securely attached or insecure avoidant) don't tend to change. In their review of attachment, Carlson, Sampson, and Sroufe (2003) found that caregiving behaviors, family circumstances, and individual differences all play a role in the development of attachment relationships. Similarly, Berlin & Cassidy (2003) found evidence of a relationship between attachment and the development of emotions over time. That is, children learn a great deal from their parents' interactions with them, including, possibly, how to express and control emotion.



From these recent scientific examinations of attachment, one can draw the conclusion that we should not just promote one-on-one activities, such as reading and talking between mothers and infants; we should also ensure these activities are sustained over time. Our best efforts as practitioners are ongoing and keep up with families over time.

Literacy and Socioeconomic Status Are Linked

Finally, a third theme found in the research literature reveals that socioeconomic status matters when it comes to shared reading experiences (Korat, Klein, & Segal-Drori, 2007). Middle-class mothers use more elaborate language than mothers who are in lower socioeconomic homes. For example, a middle-class mother might use more than one word to describe an event in the book, or use longer or more complex sentences to convey the meaning of the story. Researchers are conducting further studies to discover exactly why such differences exist.

Why Reading Matters

Given the above research findings, we can see there are subtle, yet distinct differences in the kinds of things parents do when they read books to infants. As early childhood practitioners, we should work with parents to further the kinds of quality literacy activities we see in the best family environments. One of the strongest reasons for doing so is that we know early literacy opportunities are linked to later language outcomes (Richman & Colombo, 2007). Specifically, the quality of the literacy environment in the home is linked to language ability. Quality of the literacy environment is typically measured by such things as the availability of books and other print materials, use of oral and written language in everyday life, and access to developmentally appropriate literacy materials for the child (for example, having a library card).

Implications for Your Classroom

One thing we learn from the above studies is that parents need and benefit from our encouragement. Parents who receive training change their reading behaviors, creating more optimal situations for learning to take place. Parents are also more likely to read to young children when they are provided

with free books or books to check out. Parent training can occur in your classroom during parent conferences or parent workshops held at your center. Parent training can also be implemented informally through the use of bulletin boards, Web sites, or newsletters.

Parents also need us to help them find materials that are appropriate and interesting. Setting up a lending library is one way to encourage literacy activities at home. Typically a lending library is a designated set of materials parents can check out to use at home with their children. High-quality lending libraries include not only books, but music, games, and other educational materials as well. A good place to start is to read how other programs have integrated lending libraries, such as the description by Burningham (2005). Utilizing a combined effort of people within her region, Burningham put together a comprehensive program that not only offered books, but transportation and interpreters for activities as well.

Teachers can also help parents when they model a quality literacy environment in the classroom. Be sure books and print are visible in high-traffic areas, where parents are likely to take note of what they see. Document literacy activities and share your documentations with parents, or make sure those activities are occurring at times when parents are also present (for example, at the end of the day). Parents often use ideas or activities they observe working in the classroom.

Similarly, be sure your staff engages in the kind of attention and focus found in securely attached mother-child relationships. Like parents, teachers and caregivers are also important sources of literacy learning for babies. Teachers and caregivers can also model interactions for parents, a subtle yet particularly helpful strategy for optimizing outcomes in lower socioeconomic groups. Let the parents see your staff engage in storybook reading, and/or solicit information from parents about what they do at home. Create a community bulletin board where

parents can share reading tips or favorite books with each other.

What to Look For

Finally, you can also help by carefully examining the books you offer parents. Look for books with good visual design elements, including quality artwork and photographs. Examine the topics of available books to find those relevant to infants/toddlers (and yet also of interest to parents). Examine the developmental appropriateness of the books, screening out books that are too long or irrelevant in a child's world. Many longer books have been condensed into board book format, so you'll need to evaluate which are appropriate. Remember, just because a book is a board book (durable hard cover) format, doesn't mean it is appropriate for an infant or toddler. Perhaps it is too long, or it doesn't make sense once the publisher cut text to make it fit the format.



Good books for infants and toddlers should be durable and made of washable cloth or firm, laminated board. Durable, washable materials allow for easy cleaning. This is important because very young children are likely to put objects in their mouths. At this age, good books should also be: 1) constructed with sturdy, thick pages to allow for easier handling; 2) illustrated with simple, large, realistic pictures; 3) designed to include the objects and routines that relate to the infant's environment; and 4) filled

with familiar words, repetition, and pleasant rhythmic sounds. Toddlers enjoy simple stories with familiar events, routines, and family experiences (Gestwicki, 2007; Herr, 2008).



Award Winners

Luckily, help is available to assist you in finding good materials. Look for award winners of any kind, as these books have usually been screened by a panel of experts (or parents!) and are notable for their own individual reasons. Two of the most prestigious awards are the Newbery and the Caldecott. John Newbery is credited with the first published edition of *Mother Goose*. Each year the Newbery honor goes to the most distinguished book for children written by a citizen of and published in the United States. The Caldecott Medal is awarded each year to recognize excellence in children's book illustrations. Typically you'll find the Newbery and Caldecott in book selections for older children, but pay attention to these excellent books for ideas and examples.

Additional books to look for are those reviewed by the American Library Association. Every year, the Association for Library Service to Children (ALSC) puts together a list of notable books in several categories, including those for younger readers. For example, on their list for 2007 was *Black? White! Day? Night! A Book of*

Opposites by Laura Seeger, and from 2005, *Kitten's First Full Moon* by Kevin Henkes, which also won the Caldecott medal.

Final Thoughts

Throughout this article, we have found examples of the importance of reading to infants and toddlers. Research tells us that parents are important players in the development of literacy, and as early childhood practitioners, we can encourage their involvement by teaching parents strategies directly or modeling effective interactions. We can offer lending libraries and strengthen opportunities for those in lower socioeconomic groups. We can help parents make careful literature selections, and we can be selective ourselves when it comes to offering the highest-quality materials. Research tells us language-rich environments should start in infancy, and you can help.

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Appendix A

List of Recommended Books for Infants and Toddlers

Anderson, S. (2007). *Fruit*. Gulfport, MS: Big Apple Books.

Asim, J. (2006). *Whose toes are those?* New York: Little, Brown & Co.

Bang, M. (1996). *Ten, nine, eight*. New York: Green Willow Books.

Barton, B. (1998). *Trucks*. New York: Harper Collins Children's Books.

Brown, M. W. (1991). *Goodnight moon*. New York: Harper Collins Children's Books.

Brown, M. W. (1994). *Big red barn*. New York: Harper Collins Children's Books.

Crews, D. (1996). *Freight train*. New York: Harper Collins Children's Books.

Degen, B. (1985). *Jamberry*. New York: Harper Collins Children's Books.

Henkes, K. (2004). *Kitten's first full moon*. New York: Harper Collins Children's Books.

Hoban, T. (1986). *Red, blue, yellow shoe*. New York: Greenwillow Books.

Hoban, T. (1993). *Black on white*. New York: Greenwillow Books.

Hudson, C. W. (2007). *Hands can*. Cambridge, MA: Candlewick Press.

Joose, B. M. (1991). *Mama, do you love me?* San Francisco, CA: Chronicle Books.

Katz, K. (2007). *Daddy hugs*. New York: Simon and Schuster.

Kindersley, D. (2003). *Touch and feel baby animals*. New York: DK Publishing.

Kunhardt, D. (2001). *Pat the bunny*. New York: Random House Children's Books.

Martin, B. (1996). *Brown bear, brown bear, what do you see?* New York: Henry Holt & Co.

Oxenbury, H. (1999). *Tickle, tickle*. New York: Simon and Schuster.

Pinkney, A. (1997). *Pretty brown face*. New York: Harcourt.

Raffi. (1998). *Wheels on the bus*. New York: Random House.

Sanger, A. W. (2002). *Hola! Jalapeño*. Berkeley, CA: Ten Speed Press.

Sanger, A. W. (2003). *Yum yum dim sum*. Berkeley, CA: Ten Speed Press.

Seeger, L. (2006). *Black? White! Day? Night! A book of opposites*. New York: Roaring Brook Press.

Wells, R. (1998). *The itzy-bitsy spider*. New York: Scholastic.

Williams, S. (1996). *I went walking*. New York: Harcourt.



The Child Development Associates (CDA) competencies that can be linked to this article are:

- To advance physical and intellectual competence.
- To support social and emotional development and to provide positive guidance.

For more information on the CDA competency requirements, contact the Council for Early Childhood Recognition at 800-424-4310 or visit www.cdacouncil.org.

The Certified Childcare Professionals (CCP) professional ability areas linked to this article are:

- The ability to enhance the cognitive development of young children.
- The ability to enhance the social and emotional development of young children.

For more information on the CCP certification, contact the National Child Care Association at 800-543-7161 or visit www.nccanet.org.

AUTHOR NARRATIVE:

Susan Bowers, Ph.D., is a professor of early childhood studies at Northern Illinois University, and a child-care consultant in the Chicago area. She has experience as a preschool teacher and director, a parent counselor for child care resource and referral agencies, and a researcher in medical diagnostic settings. Dr. Bowers is also the author of a recent article on training early childhood professionals.

let's talk math with young children

By Alice Merz, Ph.D.

Indiana University – Perdue University Fort Wayne

Like literacy development, mathematical skills are viewed as an emergent understanding of concepts (Gordon & Browne, 2004). It is easy to have our preschoolers practice their counting out loud, to ask them what shape something is or what pattern they are making, and to tell them if they are right or wrong. However, it is also easy to forget to ask them about their thinking. Likewise, it is easy to forget to share what we have noticed beyond their rightness or wrongness.

This article focuses on intentional teaching for promoting mathematical skills. It focuses on the supportive environment and instructional strategies needed to advance the development of mathematical concepts. Free exploration is not enough to help children develop these concepts. On their own, they cannot construct the vocabulary, concepts, and principles. Adult guidance is needed to supplement child-guided exploration (Epstein, 2007).

The task of the early childhood teacher is to find out what the children already understand. Six different math “talk moves,” often referred to as strategies can be used to further the children’s

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mathematical thinking. (See Table 1 for a list of the six types of talk moves.)

Throughout this article, we will see how these math talk moves have affected Ms. Jennifer’s preschool classroom.

“Ms. Jennifer” is a combination of a number of teachers I have observed who have been using math talk in the classroom for about a year. Like many teachers, Ms. Jennifer started out emphasizing one or two talk moves. As she and her children felt more comfortable with them, she has added more.

She is now using six different talk moves in the classroom with her children.

Valuing

The first math talk move that we can use is called valuing. When we value a child’s math idea, we direct attention to the mathematical value and importance of his or her work (Chapin, O’Connor, & Anderson, 2003). Consider the following example: Ms. Jennifer notices that Megan is lining up her beads in a different way from the other children at the bead table. Megan lines up a group of pink beads and then a group of purple beads and then starts all over with pink beads and then purple beads. While Megan does not use the same number of pink and

Table 1

Math Talk Moves

Math Talk Move	Purpose
1. Valuing	Directs attention to the value and importance of the student's work.
2. Revoicing	Repeats or rephrases what was said as a way to acknowledge one's listening; for verification; and to allow for additional time and opportunities for processing the learning and teaching.
3. Probing and Extending	Probes for understanding as well as extends their ideas.
4. Explaining One's Reasoning	Encourages the students to work on their reasoning as a way to further the accuracy of their understanding and to gain agreement.
5. Recapping	Keeps several ideas on the table for further exploration and consideration; facilitates the linking of current ideas.
6. Connecting with Prior Knowledge	Helps to develop prior accuracy and reasoning by connecting with previous events or ideas from the past.

purple beads each time, Ms. Jennifer values what Megan has done; she says, "Wow, Megan. You are doing a different kind of math; you made a pattern with your colors. I see you are using one of Ashley's favorite colors, pink. You used pinks, then purples, and then pinks and purples again. You made a pattern with the colors." As Ms. Jennifer says this, Ashley looks over at Megan's beads. After playing and fiddling with her own beads a little more, Ashley finally starts to settle down; she begins to move her beads into groups of colors, too. Ms. Jennifer notices this and says, "Ashley, you are starting to group

your colors, too." Ashley beams and keeps working.

Before learning about math talk, Ms. Jennifer would have focused on helping the children count their beads or commented on how pretty the arrangement was. She also would have told Ashley that she needed to settle down. Now she uses valuing to further the children's thinking about different aspects of math such as patterning, instead of just focusing on counting or aesthetics. She has also found that it helps some children focus in a more positive way, like it did with Ashley. Through the use of language, Ms. Jennifer supports the children's cognitive development. This strategy helps children use mathematical words, terms, and concepts correctly (Gordon & Browne, 2004).

Revoicing

The second math talk move that we can use is called *revoicing*. Revoicing means that the teacher repeats what the child has said and receives feedback from the child to verify if it was heard correctly (Chapin, O'Connor, & Anderson, 2003). Many times the teacher will use the same wording as the children. Particularly at the preschool age, children love to hear that the adult understands them and is listening closely; it's a form of validation. This is especially useful for preschoolers, as they refine the pronunciation of their words. It gives the teachers an opportunity to find out if they understood the child. It also allows the child more time and another opportunity to process what was said.

In the following example, Ms. Jennifer is working with a few children at the shapes table. All of the shapes are the same color, and each kind of shape is approximately the same size. She asks Jamira to find all of the triangles, Josten to find all of the circles, and Lizzi to find all of the rectangles. Josten has no trouble finding the circles. Lizzi finds all of the rectangles that are not squares. Jamira finds all of the triangles that are equilateral (whose sides are all the same length). This leaves the squares and the scalene triangles (whose

sides are of different lengths) unclaimed. Ms. Jennifer asks them to tell her what they notice about their shapes. Josten points out that he found all the circles and their sides are smooth and not pointy. Lizzi says that her shapes have four points. Ms. Jennifer revoices and says, "Your shape has four *points* and Josten's shape does not have any *points*." The children nod their agreement.

Jamira jumps in and says, "Mine has three sides." Ms. Jennifer revoices again and says, "Jamira's has three *sides*. Lizzi's has four *points* and Josten's does not have any *points*." Again, the children nod. "Jamira has just mentioned sides. Lizzi and Josten have talked about points. Let's go back and look at both the sides and the points for your shapes." So, the children explore the relationship between sides and points.

Before learning about math talk, Ms. Jennifer would have had the children quickly count the points and assumed that everyone was paying attention to the idea of "points" without checking back with them. As a result, she would have either missed that Jamira said "sides" or assumed that Jamira meant to talk about points since that was the focus. Then, she would have pointed out that the children missed some of their shapes. She would have told them that the square had four points and was also a rectangle, just like the scalene triangle had three points and was also a triangle. However, by revoicing their ideas, she is slowing things down, so the children can hear it again, verify what was said, and continue to process the ideas of points and sides. She is also processing her own thinking

and teaching better as she listens more closely.

In order to understand the students' thought-processes and encourage deeper thought, Ms. Jennifer asks about the unclaimed shapes. "I'm curious about these leftover shapes. Where do they belong?" Josten states that

one group is squares and they could be their own group. Jamira says that the rest (the scalene triangles) were not made right. Ms. Jennifer smiles and continues, "Let's see how many points and sides this one has?" as she holds up a square. Josten counts them and says four. Jamira jumps in, "Hey, that's one of yours, Lizzi, because it has four points and sides." Ms. Jennifer revoices again, "It has four points and sides. Lizzi, you said that your shapes have four points and four sides." This time Jamira nods, but Lizzi scowls. Lizzi isn't convinced, because she agreed with Josten that it was a square.

So, Ms. Jennifer eagerly asks them more questions about their thinking so that she can learn where they are developmentally and if they are ready for scaffolding to a new level of thinking about shapes.

Probing and Extending

As you have seen with Ms. Jennifer and the children during their investigation of shapes, it is important to understand and encourage children's thinking. The third and fourth talk moves are designed to do that. The third math talk move is called *probing and extending*. This talk move invites children to



talk more deeply about their work and may lead to new ideas or understanding (Chapin, O'Connor, & Anderson, 2003). Ms. Jennifer probed the children's thinking at the shape table when she asked where the leftover shapes belonged. Now we will see how she probes and extends children's thinking at the block station.

When Ms. Jennifer moves over to the block station, she notices that Brian and Colin are stacking the wooden blocks as high as they can. Brian's blocks keep falling over, while Colin's stack gets taller. Ms. Jennifer makes the usual, open-ended probe, "Brian, tell me what you are making." Brian replies, "I'm trying to make a tower, but it keeps falling over."



Before learning about math talk moves, Ms. Jennifer would have suggested that Brian try lining his blocks up better. Now through talk moves, Ms. Jennifer decides to extend her question, so she can learn more about Brian's

thinking. "Brian, what do you notice about Colin's blocks?" Brian replies, "His blocks are smaller than mine. I want to use his; they work better." Ms. Jennifer wants to extend Brian's thinking about size further; "I'm wondering about the size of Colin's blocks and where they are placed. How is his placement of big blocks and little blocks different from yours?" Brian immediately starts to reorganize his own blocks by putting all of the larger ones on the bottom. As a result, his stack starts getting taller without falling over. By probing Brian's thinking, Ms. Jennifer is able to learn more about what Brian is attending to and can help extend his thinking by directing his attention differently. In this case, Ms. Jennifer learned that Brian was focusing on the overall size of his blocks in relation to Colin's blocks. Instead of focusing on how she was thinking about the blocks (by lining them up better), Ms. Jennifer encouraged Brian to notice the size of each of Colin's blocks and how they were placed.

Explaining One's Reasoning

The fourth talk move is called *explaining one's reasoning*. This math talk move is designed to understand and encourage students' accuracy and reasoning (Chapin, O'Connor, & Anderson, 2003). Julio and Raúl are at the center Ms. Jennifer calls the Animal Kingdom, and they are counting the animals that they want to put in their zoo. Julio and Raúl cannot seem to agree on how many animals they now have. Julio says that they have 23 and Raúl says that they have 24. As Ms. Jennifer watches, she notices that they have counted the animals more than once, still don't agree, and are starting to get agitated. Obviously, they are having difficulty with their one-to-one counting.

Before Ms. Jennifer learned about math talk, she would have jumped in to have them count it again with her help and then confirmed who was right. Now with more awareness about how to get the students to reason with math talk, Ms. Jennifer asks, "How can we figure out how many animals there are, since just counting them isn't working?"

Julio and Raúl both say to count them again. Ms. Jennifer asks more, "What else can we use to help us count? I'm thinking that we have some things in this room that we use every day to help us count and keep track of numbers."

As the children look around they see the classroom calendar and remember that they use the calendar at the beginning of each day to count the number of days in a month. Julio says, "We could place each animal on the calendar." Ms. Jennifer goes and gets the calendar. Julio and Raúl put an animal on each day, starting with the first day of the month. Ms. Jennifer then asks them about their accuracy and reasoning in the next set of questions. "So, how many animals do you have?" Both boys chime in, "24." Ms. Jennifer continues, "So, you both agree now! Tell me how the calendar helped to show us how many animals you have for your zoo." Julio and Raúl each take turns explaining how one animal goes with one number. Raúl completes the idea and says that the last number tells them how many they have. For Julio and Raúl, this talk move helped them move beyond their disagreement and find a different way to reason through and solve their problem together.

Recapping

As part of Ms. Jennifer's reflection on the talk moves that she used that day, she reviews each of the four talk moves that she intentionally pursued. In the process, Ms. Jennifer also realizes that she incorporated two additional talk moves without realizing it until now. The first talk move that came instinctively is called *recapping* (a statement about the shared understandings that were presented). Ms. Jennifer realizes this when she reflects on the revoicing that she did with each of the children's ideas at the shapes table. With the revoicing talk move, she was explicitly trying to hear and verify each child's ideas, while also modeling that she wanted the children to do the same. However, she realizes that at least one time that she can remember, she revoiced all of the children's

ideas together as kind of a package of ideas. This resulted in a type of recapping of all of the ideas as a way to make sure that the children were continuing to focus on the information about both the sides and the points of the shapes so that they could explore them further (Chapin, O'Connor, & Anderson, 2003).

This technique is important to Ms. Jennifer, because she noticed previously that if she did not do this, the students would focus primarily on their own contribution and get lost with others' ideas. In addition, she has found that when she recaps information, the children are able to make better connections and to recall more information. While it is common to think about recapping at the end of a lesson, Ms. Jennifer has learned through her own teaching that recapping is also beneficial in the middle of a lesson when a lot of different information has been discussed.



Connecting with Prior Knowledge

As Ms. Jennifer went on to reflect on her talk moves, she realized that she also instinctively used the *connecting with prior knowledge* talk move in the Animal Kingdom area. When she prompted Julio and Raúl to think about what they had used before to count and keep track of numbers, she was instinctively asking them to connect their prior knowledge

to their current situation, so they could continue working towards accuracy and explaining their reasoning. She also realized that if she had made the connections for them, she would have had them use something more traditional like a ruler or their set of different length bead strings. By letting them make their own connections, Ms. Jennifer was able to see the children's inventiveness, as well as different connections that they were making on their own from other class activities. She has started wondering, "How many times in the past have I underestimated the children's abilities and not known it? How many times have I valued my own assumptions and knowledge over the children's?"

Overall, Ms. Jennifer was very excited and proud that the talk moves were becoming both more intentional, with the four talk moves, and more natural for her, as illustrated in the two instinctive talk moves. She began to see how the talk moves can work together to explore the children's thinking. In retrospect, she realized that implementing talk moves one at a time when she was first learning them was wise, because it would have been overwhelming for her and for the children in the class if she had tried to implement them all at once. By concentrating on one or two talk moves at a time, she has allowed both herself and the class to explore and become acclimated more naturally to the changes.

Conclusion

While math talk moves are not a new idea in the field of mathematics education, it is important to consider how to incorporate them effectively and to remind ourselves that they are valuable tools for teachers to use with young children. This technique helps teachers listen to their children more effectively. It helps teachers think about where the children are in their thinking, so the teachers can make their next steps more responsive to children's needs. As we have seen with Ms. Jennifer, before her use of talk moves, she was imposing her own ideas onto

the children. With the talk moves, however, she has been able to scaffold their thinking more – remember her valuing Megan's patterns with the beads and how that also helped Ashley think differently about her beads. Remember she found out that Brian was focusing on the size of the blocks and not just lining them up straight. Remember at the shapes table, Jamira focused on sides while the other children focused on points and how Ms. Jennifer went back to pursue that relationship more.

As we saw in Ms. Jennifer's class, the math talk moves also helped her children practice their communication and reasoning skills. Before learning about talk moves, Ms. Jennifer was doing most of the talking and felt that it was important to model for the children. Now she lets them model their thinking and reasoning for her. However, it is important to note that she has not given up modeling altogether; instead, she uses it more judiciously.



Ms. Jennifer and the children's parents have noticed that the children are starting to become more positively involved socially, more articulate, and better problem solvers when it comes to math. Who would have thought that preschoolers would think to use a calendar to help them count animals and prove their thinking? It's easier to imagine that they would have had an escalating disagreement where they would have had

to be separated from each other and the Animal Kingdom, and their focus on the math and problem solving would have been minimized.

According to Ms. Jennifer, the best part of math talk is that the children are not groaning about having a math center anymore. Instead, they are requesting to incorporate more math at other centers. They are also starting to use some of the math talk moves with each other and communicate better with their drawings of their work at each center. Ms. Jennifer tells us that this experience has emboldened her to do more math with her children. Currently, she is in the process of looking for more meaningful math investigations that are authentic and emergent, rather than just having an isolated math activity here and there.

For more examples about how math talk can work in the classroom:

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AUTHOR NARRATIVE:

Alice Merz, Ph.D. teaches elementary math methods at Indiana University Purdue University – Fort Wayne. Her teaching highlights using students' work and discussions about math to facilitate learning and guide teaching. Her research interests include understanding dispositions and defensive pessimism in the mathematics classroom and examining Reggio-inspired schools from multiple perspectives.

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For a fascinating video of children investigating and talking about math:

Dolk, M., and Fosnot, C. T. (2004). *Taking Inventory, PreK-3: The Role of Context* [CD-ROM]. Portsmouth, NH: Heinemann.

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developing children's observations skills

By Dr. Donald Platz,
University of Wisconsin-Stout

Much attention has recently focused on the importance of observing children in an effort to identify important developmental characteristics and social or emotional behaviors or to assess children's learning. When working with children, adults and teachers often set up situations for children to observe objects, phenomena, or events. What is sometimes missing in these observational opportunities is time to teach or guide children as to how to observe the objects, phenomena, or events they experience. While children's ability to observe may take place naturally to some extent, guidance can be given and effective strategies can be used to help elevate children's ability to observe at a higher level.

Helping young children develop their powers of observation is an important goal for adults and teachers to plan for when working with and teaching young children. Observation is a critical developmental behavior that serves as a foundation for learning for children as they form concepts and build relationships among objects and events

Children at an early age learn through perception, and these experiences with real materials and observable activities are essential for children to assimilate what they experience.

in their world. Carin, Bass, and Contant (2005) define observation as "becoming aware of an object or event by using any of the senses to identify properties" (p. 39). Observation is facilitated by a child's natural curiosity about their environment and the world around them. As children observe and interact with their environment, they begin to form and organize new ideas and modify past understandings. Piaget uses the term *assimilation* to describe this processing and organization of new ideas based on experiences. He believes that assimilation is very important in the cognitive development of young children. He also states that children at an early age learn through perception, and he maintains that these experiences with real materials and observable activities are essential for children to assimilate what they experience. The skill of observation plays a critical role in how children come to understand and organize their world through play and other experiences (Wadsworth, 1971).

Since the beginnings of early childhood education, nature and teacher materials were used to develop children's powers of observation. Many early professionals such as

Jean Jacques Rousseau, Friedrich Froebel, Johann Pestalozzi, Elizabeth Peabody, and Maria Montessori were influential in creating learning experiences and materials for children, some of which are found in early childhood programs today. Experiences with nature (science) were often used to develop observation abilities in young children. Friedrich Froebel and Marie Montessori are well known for the teaching materials they created to develop children's sensory abilities and observations.

Froebel's Gifts and Observation

Friedrich Froebel had an early impact on the education of young children. He has been credited with developing the first kindergarten program in the 1830's. A major component of his kindergarten curriculum was a set of what he called his *Ten Gifts* (Osborn, 1980). Froebel spent 15 years developing and perfecting his gifts. While Froebel attached great symbolism to his gifts, he believed that as children enter the world, they receive impressions through their senses from their observations and interactions with objects.

The first gift was a set of six colored balls derived from the spectrum: red, yellow, orange, green, blue, and violet. He chose balls because they were the simplest shape and most easily grasped by children. Strings were also used with the balls to create motion.

His second gift consisted of a wooden sphere, cube, and cylinder. The primary characteristic of the second gift was contrast in forms, which would help children begin to see differences among objects.

Through interactions with these two gifts, children learn to observe, compare, and describe objects, which Froebel felt would help them in the years to come. Children could also make comparisons between the first set of gifts, which were soft and light, and the second set of gifts, which were hard and heavy. As the remaining eight gifts were introduced to children, challenges became

more complex and manipulation of the gifts became more difficult. In many ways Froebel's gifts were a beginning curriculum on teaching observation.

Montessori's Learning Materials



Maria Montessori's method was divided into three core parts: motor education, sensory education, and language. For her core curriculum, she developed a number of instructional materials to be used to advance the learning of students.

Her *didactic material for the education of the senses* was perhaps a major contribution to children's development of the senses, which directly related to improving children's ability to observe, compare, and synthesize phenomena (Montessori, 1963).

Originally Montessori developed 11 kinds of didactic materials to enhance sense development. Ten pink stacking cubes were provided for children to use to build a tower. The cubes decreased in size as they were placed on top of one another. The concept of seriation (ordering) was developed through the stacking of the cubes.

Today we still find this didactic material in many early childhood classrooms. Usually the ten cubes are multi-colored rather than the original pink color. Geometry shapes, rectangular tablets with rough and smooth surfaces, colored tablets, series of musical bells, and small wooden tablets of different weights have also been developed to aid children in the development of their senses. Many of the materials were made in series to allow children to experience seriation, or as Montessori (1963) would suggest, "to educate the eye to distinguish difference in dimension" (p. 70).

To help children focus on one sense experience at a time, only one attribute was

altered. For example, the tower cubes were of different size dimension, but all were made of wood and all were of the same color.



First Time Use of Materials

When using the materials for the first time, the teacher may intervene, but the materials were constructed to be used by children alone. Montessori felt children were aroused by the challenge of placing the materials in the right order to obtain an end to the activity. Working with didactic materials of the senses, children observe, make comparisons between objects, form judgments, and make decisions. Montessori also observed what we have now come to know: children like repetition and consequently will work with the material a number of times to enhance their learning.

Sensory Development

In the preface of her text, *Dr. Montessori's Own Handbook*, Montessori (1963) makes the

following statement regarding Helen Keller and the importance of the senses in learning:

If one only of the senses sufficed to make of Helen Keller a woman of exceptional culture and a writer, who better than she proves the potency of that method of education which builds on the senses. (p. vii)

The development of the senses is critical to the development of observation in young children. Setting up appropriate learning activities that cause young children to use their senses to improve their observational abilities greatly contributes to their learning and development. At the start, the early childhood curriculum should spend time helping children better utilize their five senses of hearing, sight, smell, taste, and touch in making observations. The development of their senses can greatly enhance children's abilities to observe objects, make comparisons among objects, and describe findings.



In the *Head Start Child Outcomes Framework: Domain 4: Science* (2007), adults and teachers are charged to help young children use their senses and other tools to observe common materials and relationships among these materials. The National Science Education Standards also suggest that as young children progress in their knowledge of science, they should begin to answer questions based on their observations (Bybee & Champagne, 1995).

Figure 1

Recommended Components for Developing Good Scientific Observation Skills

1. *Plan*: Use a plan to guide observations.
2. *Senses*: Use all appropriate senses as well as instruments that extend the senses in gathering extensive and clear information.
3. *Questions*: Be curious and keep an open mind while observing, be alert to discrepancies, and raise questions that can lead to new observations and new information.
4. *Measurements*: Make measurements of important variables.
5. *Similarities and Differences*: Identify similarities and differences between the object and other comparable objects.
6. *Changes*: Observe natural changes occurring in the objects whenever appropriate.
7. *Communication*: Report your observations clearly.

(Carin, 1997, p. 12)

At a beginning level, children should have experiences using their senses to observe and describe common materials, which contain basic properties of color, shape, size, texture, and so forth. Other concepts such as odors, temperatures, pitch, and changes in properties can also be included. One strategy teachers can consider is to encourage children to use several appropriate senses to describe the objects or experience being observed. For example, when presented with a red ball, children could use multiple senses to observe and describe the object as they look at it, feel it, bounce it, etc. Alternatively, teachers could encourage children to complete observations using only one appropriate sense for an object or experience. For example, children could listen to a set of sounds or music and identify different pitches.

As children progress in their ability to observe and describe objects and materials, teachers can further challenge them to make observations using their senses while

properties change. For example, children can observe changes in materials as they mix colors, heat ice cubes, or take measurements of plant growth over a period of time.

Nature, Science, and Observation

The skill of observation is an important process skill used to study nature and science in early childhood curriculum. Charlesworth and Lind (1995) categorized science process skills into basic, intermediate, and advanced levels. Observing was included in the basic level, along with communicating, inferring, classifying, measuring, and predicting. Basic level process skills provide the foundation for the intermediate and advanced level process skills. Monhardt and Monhardt (2006) further suggest that observation is the most basic of all the process skills used by children.

Involving young children in nature and science-based activities and investigations is a great way to improve their observational abilities. Through these experiences, children are able to better understand the world they live in. Wilson (2006) maintains that today there are many benefits to incorporating natural places (versus structured play area) for children to investigate. By entering into natural places, children have the opportunity to observe, interact, and investigate nature, which relates to real experiences in their world. Wilson also suggests teachers develop a variety of gardens and provide places and materials that invite wildlife.

Use of Listening to Support Observations

As children develop observational skills, it is helpful for teachers to incorporate experiences that enhance children's ability to listen and observe (Bredenkamp & Copple, 1997). This approach also promotes the development of problem-solving skills, as children must listen to information while making observations and drawing conclusions.

The elimination game is a gaming strategy that can be used with young children to incorporate listening and observation. To play the game, a teacher can set out a group of objects and tell the children that they are to pick out the one object the teacher is thinking of. The teacher then provides a series of clues (one clue at a time), continuing until children think they have enough clues to identify the correct object. Children continue guessing until the correct answer is revealed. Animals, fruits, transportation vehicles, flowers, and other objects can be used with this gaming approach.

This game helps children with their power of observation through listening. Children begin to put together what they hear with what they observe and synthesize the information to solve a problem or identify a conclusion. Because children have so much enthusiasm, they often find it hard to wait and collect all needed information before drawing conclusions. The game also teaches children to hold off on conclusions until they gather more needed information.

Sharing and Comparing Observations

Children can improve their ability to observe by making and sharing observations with other children. As children observe together, they can compare or discuss attributes of things they see or make analysis of events that have occurred. Wilson (2004) believes that children's knowledge can be enhanced by sharing their observations, and that adults and teachers should encourage children to work together to build theories and draw conclusions based on their shared observations. For example, imagine several children observing a cooking spice made of multicolored particles; their teacher asks them to identify the colors they see. As the children begin to share their observations, one child may say he sees "red stuff," while another child may say she sees "dark red stuff." After looking at the substance again, the two children might agree that it is more of a darker red color. Through this consensus-

making activity, the first child may in future observations begin to not only observe the color of an object, but may also begin to describe the shade of the color.

These shared observations provide children with the opportunity to develop their communication skills. Anderson, Martin, and Faszewski (2006) believe that in order for children to learn how to make good observations they need to communicate what they see to others and gain feedback on their communications. Feedback provided by adults, teachers, or peers can help children clarify or reconsider their observations.



A second benefit of having children work together to share their observations is that children may become more accepting of the opinions of others. In order for children to become accepting of the views of others, teachers need to ensure that the observations of children are respected. The more comfortable children feel with their observation, the more accepting they may be of the observations of others.

Summary

Observation is an essential beginning skill to develop in young children. It helps children develop cognitively by building understandings of properties, seeing relationships, making comparisons, and drawing conclusions. Piaget states that through observation children can begin to assimilate their experiences and make

sense out of their world. Teaching materials such as Froebel's gifts and Montessori's didactic materials for the senses are very important models to consider when initiating observation activities. Nature and science curricula in the early childhood classroom incorporate many activities that provide great opportunities for children to observe through their senses. Observations in natural settings allow children to make connections to their real world and can facilitate their development. Exercises that require children to listen to information and determine an outcome can also improve children's abilities to think deductively and organize their thoughts while they observe. If adults and teachers allow children to share and communicate their observations with others, children may learn to accept the views of their peers.

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AUTHOR NARRATIVE:

Dr. Donald Platz teaches early childhood mathematics and science courses at the University of Wisconsin–Stout. He has more than 30 years of experience in early childhood professional education ranging from preschool teacher/administrator, to primary school teacher, to university faculty member and administrator.

preparing environments in family child care homes

By Ramona Freeman, Ph.D.
Assistant Professor, Kent State University

The context, defined and determined by the relationships and interactions with others, and thus also with the environment – spaces, furnishings, colors, lights, and sounds – determines the possibilities and qualities of the learning processes that each individual chooses to produce within that context and thanks to that context. (Ceppi & Zini, 1998, p. 17)

The family child care provider's business is nestled quietly within any given neighborhood, without billboards or spotlights to attract interested parents. Yet these settings play a critical role in fostering the healthy growth for an estimated four million children in the United States (Bromer, 2001). Family child care is of particular interest because children's early years establish the foundation for future learning: quality of care is correlated with positive growth and development (Bredekamp & Copple, 1997).

Providers' homes are a particularly important element of quality, because unlike other forms of educare, here the adult's public career and private life share one setting.

Much of what family child care providers do and what children need relies on the environment in which social/emotional, cognitive, physical, and language growth occur. The physical environment affects the child's behavior and the quality of adult-child relationships. Bredekamp and Copple (1997) emphasize that the environment is critical to exemplary early childhood practice, along with a provider's ability and willingness to interact with children, determine their needs, assess their development, and provide safety. Therefore, it is important to study family child care providers' descriptions of preparing

and using their environments. A well-known Italian phrase attests to the importance that Reggio Emilia educators place on the materials, space, and time spent within a caregiving environment: “The environment is the third educator,” after the co-teachers (Giudici, Rinaldi, & Krechevsky, 2001, p. 290). Given the critical importance of this dimension of educare, this article considers how family child care providers view the teaching/learning environment of their settings.



Family child care providers can think about their environment in several ways. First, they can consider the physical space, its furnishings, and its uses. These three physical dimensions vary dramatically, because the settings in family child care are so unique. Second, there are always practical limitations that shape providers' decisions about their environments. Third, outdoor areas, which vary from urban apartment playgrounds to rolling farms, are a major component for providers to consider. Fourth, the viewpoints of parents (the clients) are an ingredient

that cannot be ignored; their perceptions about environments for their children must be heard. Lastly, children themselves are capable of and deserve to have input in their educare environment. These five issues form the main points of this article, considered from the perspectives of three family child care providers, Daisy, Rose, and Iris, who have each been in business for at least 15 years.

Providers' homes are a particularly important element of quality, because unlike other forms of educare, here the adult's public career and private life share one setting. Blending the public and private represents a unique characteristic of this form of child care. In their comments, Daisy, Rose, and Iris all mention space and material in their homes and outdoor settings, describing what it's like to live and work in places they created to support children's growth and learning. They also acknowledge an atmosphere of openness and freedom to move about, accompanied by child-centered choices and opportunities to take ownership of their caregiving world. As Iris notes, "I look at my environment all the time. It's my home, too. But I look at what I can do to make my house better for the day care kids."

Rationale for Indoor Spaces, Furnishings, and Use

Indoor environment serves as both the family home of the providers and the space where they carry out their work with children. Child-care space flows through multiple levels and rooms, and providers work hard to plan, maintain, and modify their homes. The following examples illustrate these concerns:

Daisy-

When I lived in Lakeland, I had my day care primarily in a finished basement. That was where we had three indoor swings. My grown boys will tell you their favorite memory is swinging in the basement. Then, when we moved to Martinsburg, I started in a little eight by eight [foot] room

and immediately saw that wasn't practical. I convinced my husband I needed the family room too. Pretty soon I basically had day care everywhere. I never had more fun in my entire life.

Rose-

I think that kids need an environment with a lot of room to be able to spread out and make a big mess. If you're in a small, confined area, you're piling on top of each other. In a big area you can spread out and do whatever you like. Outside, they need a lot of space too. They can do whatever they like – not necessarily what I think, but what they think – and then build on it. And if I want to take them in a direction, I can.

Iris describes some of her efforts to provide an appropriate environment, including some of the frustrations caused by certification restrictions:

Iris-

I like all the room in this house: two rooms in the basement, the front porch, kitchen, living room for nap, plus the backyard. The attic we made to look like a jungle. It was a special theme getaway that I changed every once in a while; that took a lot of time. The kids were so excited. But regulations won't allow it, so that floor is for my own kids, and off-limits to day care. It's a big environment issue; I'm always trying to find a way to avoid cabin fever.

These examples illustrate that providers earnestly plan their indoor environments based on the best interest of their work and the children in their care. The spaces they devote to educare are rich in variety – multiple rooms with diverse purposes, designs, and atmosphere. They continually question

their physical spaces in order to improve their settings. In addition to furnishings and equipment, these providers are keenly aware of how space is important to educare: more than the minimum number of square feet, they take pains to furnish abundant room for children's varied daily needs and interests.

Environmental Constraints

In family child care, providers must determine space for work and for privacy and for any overlap of those spaces. There are problems caused by environmental constraints, for which creative alternatives need to be found. Unlike licensed centers and preschools, family child care providers perform multiple roles simultaneously with children of varying ages.

Iris-

I hate not having a kitchen or bathroom in the basement. I do the best I can, but sometimes we are in the basement and it's a wonderful set up, but then we have to go upstairs so I can fix lunch or I have to change a diaper. I can't be both places, so when we go downstairs, it's like going on a trip you have to prepare for.

Daisy-

The downfall of living in the apartment is limited space. Plus if the kids get something on the walls or on the carpet, I have to pay for those damages, so I've felt more intimidated to do things here. I want them to have fun doing things that kids are supposed to do.

I like the idea of stations. The kids can go from one place to another and do what they want, like dress-up and books and the computer or music. I like the idea of them being able to choose what they want to do, or maybe suggesting what to do. I allow TV only for a transition period. Maybe I'm making lunch or getting kids down for nap, so I'm still able to keep an

eye on them. I don't mind TV if it's appropriate, and then limited to only when it's necessary.

Outdoor Environment

The family child care home is characterized by leisureliness and variety in open spaces on and near the property. Nature and gross motor development through play and exploration are incorporated into children's interactions. There are unique ways to customize home settings and take advantage of what the outdoors has to offer. Providers' comments attest to the benefits they experience outside:

Daisy-

I love to be outside whenever possible. It's good for the kids to be out in the air, running around, burning off energy. And when it's warm, we go out barefooted. After school we definitely go out. Sometimes we're outside for snack; if they could nap outside, we wouldn't even come in.

Rose-

I only go to the curve in the road on our walks, because if a parent comes, I wouldn't know it. If we're not downstairs, they can either see us on the road, we're in the playhouse, or we're behind the barn. This much acreage gives us elbow room.

Iris-

Other day cares are sometimes in a rut. They do the same old same old, even the field trips. Here, parents aren't surprised if we walked to the library or the park. One street comes to a dead end alley, so it's quiet when we walk there. We have our own parades, our own Indy 500, obstacle course, you name it. My backyard is small but we have nice stuff. Ben [husband] just made a

climbing wall; he looked at one and copied it, with architectural improvements [laughter]. Now we're getting creative, and kids don't want to leave.

Environment and Parent Expectations

The subtle messages received from parents also have an effect upon how providers treat their environment. Playground equipment, toys, and materials are expensive, require storage, and can overpower the space. Providers must decide how much of the home needs to be filled with child-care and educational trappings, and just how much is necessary to achieve and sustain an exemplary program:

Daisy-

With the environment I present, I'm also selling myself to a parent. So the catch-22 is: even though I know milk crates and a big wood spool for a table are all kids need, unfortunately we're dealing with a society that wants to keep up with the Jones's. So in order for my day care to appear successful, they want to feel that I'm equal with say, a center.

Rose-

You know, I have all that stuff in the yard because it looks good [laughter]. You don't need any of that, but it sells the parents; it looks like a center. The kids do like swings; they play on that. They learn to share and get along. But if I didn't have any of that and I just had a yard, they'd roll down the hill, they'd gather up leaves, they'd pick up pinecones or acorns. This is what's important.

Iris-

See, I don't need matching silverware or labels on my jeans . . . and neither

do the kids. What kids need is a puddle outside, a cardboard box, a kitten, and a healthy dose (not an overdose) of attention.

These providers are generally unimpressed by commercial playground equipment; they prefer items they considered to be more genuine. But they realize elaborate and expensive playscapes satisfy parent preferences, and providers understand the politics of appearances. They admit to making compromises in order to satisfy parents' expectations for "professional-looking" equipment.



Environment, Children, and Ownership

Some children could be in providers' care for extended periods of time. As a result, flexible play schedules, multiple spaces (among other techniques), and a certain degree of autonomy over the environment can be used to compensate for children's lengthy stays. Rose describes her understanding of ownership: "The basement child-care area is supposed to be their house. I think that's what the parents are paying for. If they spend so much time with me, it should be their house."

Rose and Iris explain the importance of giving children reasonable amounts of freedom over their domain.

Rose-

I love it when the corn's up because you can't hear anything, like cars or neighbors. With five acres, we're in our own little world. The kids have access to all of it, because there's just no reason not to. There is nothing they are going to get hurt on, and I'm with them. We grow a garden with the kids. They love to pick blueberries, mulberries, tomatoes, pumpkins.

Iris-

The good thing [about the basement] is that I can let the kids do whatever they want almost. It isn't our living space, so they can own it, so to speak. I let them paint the walls with real paint. There's about eighteen layers. They'll do an archeology dig some day and wonder who the artist was that kept changing his mind [laughter].

Rose-

On the chalkboard the older kids will write notes back and forth, or they'll write music. They have access to everything and they're free to explore. I want them engaged and challenged, so school-agers in particular can set their own pace.

By using their homes, providers afford a sense of realism to any childhood play, but especially if that play focuses on daily life. From their standpoint, providers can envision places to nap, run, eat, commune, and learn. The environment, according to providers, assures protection but does not negate risk, invites engagement but does not demand response, and challenges but does not threaten.

Summary

The work of family child care expands to include much of the provider's home rather than a single, partitioned room. Providers can avoid monotony by varying materials and manipulating areas dedicated to appropriate experiences. Providers understand children's positive responses to outdoor environments, where there is much latitude in the diversity and availability of activities. Providers view their playgrounds in terms of learning potential, whereas parents may focus primarily on appearances. Providers expect and approve of children's



taking their rightful ownership of the environment. Freedom to explore the indoor and outdoor environment is marked by favorable opportunities to interact with and manipulate their surroundings. Given these kinds of choices, children are more likely to be physically engaged, mentally aroused, and emotionally prepared for challenge. Remember the well-known Italian phrase: "The environment is the third educator" (Giudici, Rinaldi, & Krechevsky, 2001, p. 290).

Appendix

Here are a few recommended questions to keep in mind when considering exemplary family child care environments. Does the provider:

- Have a clear understanding of the public and private domains of his home for business and personal use?
- Make practical decisions based on the limitations of her interior spaces and outdoor areas?
- Incorporate the exterior property and surrounding neighborhood into his curriculum?
- Keep parents' beliefs about the environment in mind, and share her own views about natural, open-ended, and child-negotiated spaces?
- Acknowledge and incorporate children's needs, interests, and abilities into decisions about materials and play areas?

These points of reference, excerpted from providers' own stories, will serve the family child care providers well as they reflect upon improving their environments. Nonetheless, there is always more that can be done, and other aspects of the setting to consider. For example, how should providers work to make their homes more multicultural, where diversity is often lacking? How does the environment change in summer with the addition of school-aged children? What should providers consider when accommodating the possibility of a child who is wheelchair bound? What concerns do providers' own children have about ownership of their home environment? These and many other questions are priorities for training, inspection, and family child care associations to consider as family child care continues to move toward increased professionalism.

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The Child Development Associates (CDA) competencies that can be linked to this article are:

- To establish positive and productive relationships with families.
- To ensure a well-run, purposeful program responsive to participant needs.
- To maintain a commitment to professionalism.

For more information on the CDA competency requirements, contact the Council for Early Childhood Recognition at 800-424-4310 or visit www.cdacouncil.org.

The Certified Childcare Professionals (CCP) professional ability areas linked to this article are:

- The ability to establish and maintain a safe, healthy, and nurturing learning environment.
- The ability to provide effective and nurturing learning environments in response to the individual needs of each child.
- The ability to establish and maintain a well-run and purposeful early childhood educational environment for young children.

For more information on the CCP certification, contact the National Child Care Association at 800-543-7161 or visit www.nccanet.org.