

# Moving Bodies, Building Minds

## Foster Preschoolers' Critical Thinking and Problem Solving through Movement

Michelle L. Marigliano and Michele J. Russo

At circle time, Ms. Anita tells the preschoolers, "Today we are going to explore how we move our bodies." She invites the children to explore moving as she taps out a simple rhythm on a drum. When she asks, "What body parts did you move?" the children answer with the obvious: arms, shoulders, hands, and so on. In response, Ms. Anita invites them to select and

move only one of the mentioned body parts. Then Ms. Anita asks the children to think about a body part not mentioned and to come up with different ways to move that part. She writes down all the words the children use to describe how their bodies move—*bend, straighten, twist, curl*—on a large piece of paper, which she calls the Dance Word Bank [see p. 46].

**C**reative movement is an ideal way to help young children develop critical-thinking and problem-solving skills. Most young children are, by nature, extremely physical. They delight in exploring the world with their bodies and expressing their ideas and feelings through movement (NDEO 2005; Lobo &

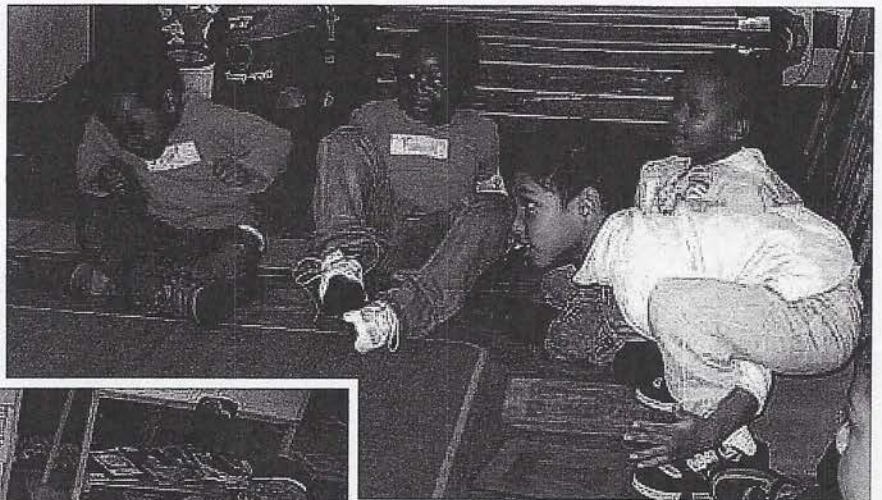
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Winsler 2006; Lorenzo-Lasa, Ideishi, & Ideishi 2007). When presented with movement ideas or problems that can be solved with a movement response, many young children create movement spontaneously. Furthermore, linking movement experiences with language—both *receptive* language (understanding that of others) and *expressive* language (sharing one's own thoughts and ideas)—builds children's thinking skills. Children go through a thinking process when given a problem to solve. Movement provides the cognitive loop between the idea, problem, or intent and the outcome or solution (NDEO 2005).

One fun problem-solving game involves challenging children to keep one body part "glued" to the floor while they explore moving other body parts (Feierabend & Kahan 2003). First, children respond to your cue to "glue your hands to the floor." Then, invite them to discover ways to move while their hands are glued. Ask children to share and talk about their experiences while you record their ideas ("I can still *lift* one foot up while my hands are glued" or "I can *rotate* around my hands while they are glued"). The cogni-

tive loop is closed when the children successfully solve the movement problem and then share their ideas with others.

Standards for Dance in Early Childhood, by the National Dance Education Organization (NDEO 2005), can guide teachers in offering children joyful and creative dance experiences, while encouraging critical thinking and problem solving. The standards include a wealth of developmentally appropriate activities.

To the young child, verbal language and movement are entwined. Preverbal movement expression does not cease when a child develops language. The road to literacy involves the translation of movement expression and communication into words. Language and dance are not separate threads, but are woven together and incorporated into a fabric of communication and understanding. (NDEO 2005, 4)

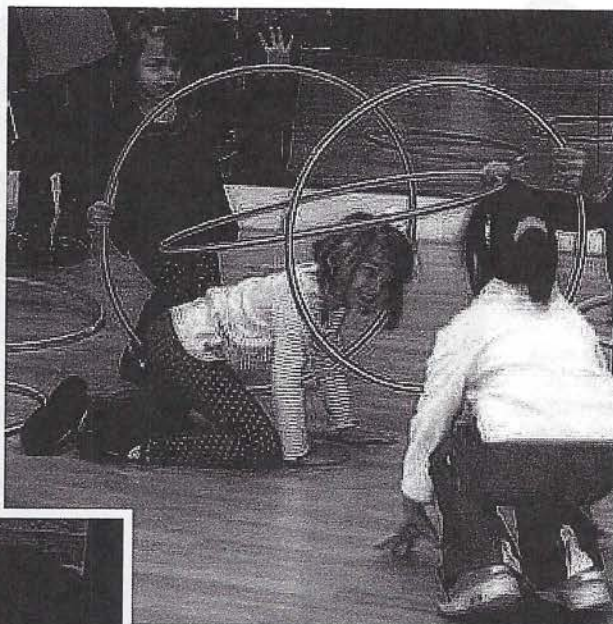
### Moving the mind muscles

Critical thinking requires children to carefully and rigorously reflect on their past experiences and to use their memory to note relationships and make comparisons

based on a set of criteria (Zachopoulou & Makri 2005). Teachers help children develop their *working memory*—the ability to hold information in the mind over a period of many seconds—when they ask children to recall what movements they did or saw their peers do. In addition, children use their working memory as they reflect on their own thinking and see connections between different experiences.

When Ms. Anita asked the preschoolers to identify which body parts they moved when she tapped the drum, the children thought back

and described what they had done. Inviting children to share their own ideas increases their focus and encourages them to have greater recall of the movements. Children can use these



## Creating a Dance Word Bank

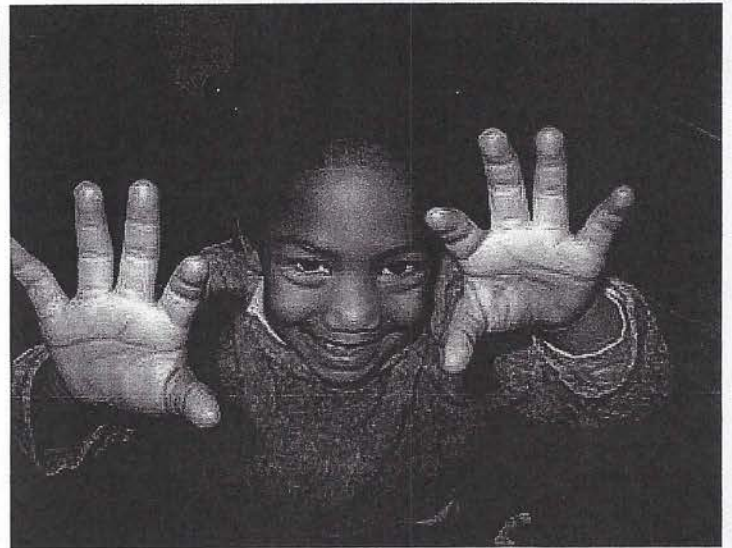
Movement is often spontaneous, and a Dance Word Bank is a great way to capture children's ideas and language as they explore movement. It encourages them to reflect on their ideas. Create a bank by dividing a large sheet of chart paper into two columns. Label the first column *Body Parts That Move*, and record children's ideas by drawing illustrations or pasting photographs of the body parts they name. Label the second column *Ways to Move* (such as *twist*, *bend*, *shake*), ask children to generate ideas, and record their responses.

Help children explore new ways to dance by asking them to select a body part from the first column and a way to move it from the second. A full bank provides a visual support for vocabulary and offers opportunities to try new movements.

personal memories to generate descriptive language and later to create new movements. When body movements are paired with language, and language paired with sensory motor experiences, children have two ways to make meaning of their experiences. This bodily kinesthetic and linguistic connection encourages children to recall and use descriptive language and discover new types of movement (Zachopoulou & Makri 2005; Lorenzo-Lasa, Ideishi, & Ideishi 2007). For example, if a child notes and demonstrates that she moved her shoulders "back and forth," the teacher could ask clarifying questions about the movement ("Do you mean that your shoulders moved *backward* together and then *forward* together? Or do you mean that you moved one shoulder forward at a time?").

Teachers also support critical thinking when they guide children to note similarities and differences and identify the relationships between things, based on a set of criteria (Zachopoulou & Makri 2005). For example, when Michael sees his friend Rebecca wiggling her wrists, his teacher could ask him, "What other body parts can you *wiggle*? Can you wiggle *slowly* or wiggle across the room?" The teacher

**When initiating a movement activity, teachers can use the scaffolding technique of engage, expand, and empower—the three Es—to create a rich experience.**



might also prompt Michael to think of other ways Rebecca could move her wrists: "Can she *bend* them, *twist* them, *shake* them, or *hold them still* while moving the rest of her body?" In this case the teacher encourages children to compare how their friends' movements are alike and different.

### Fostering movement experiences: Engage, expand, empower

When initiating a movement activity, teachers can use the scaffolding technique of *engage*, *expand*, and *empower*—the three *Es*—to create a rich experience. Focusing on one or two dance standards can *engage* children and give them an interesting problem to solve with their peers. For example, a teacher can select the elements of *level* (*high* and *low*) and *relationship* (*beside*, *behind*, *in front of*, *toward*, and *away*) for the children to focus on as they create movements and watch other dancers improvise. A simple song or chant helps organize the movement experience and cue the children (see "Making Shapes Song," p. 48).

Next, the teacher can *expand* children's experiences through the use of open-ended questions—"Now that



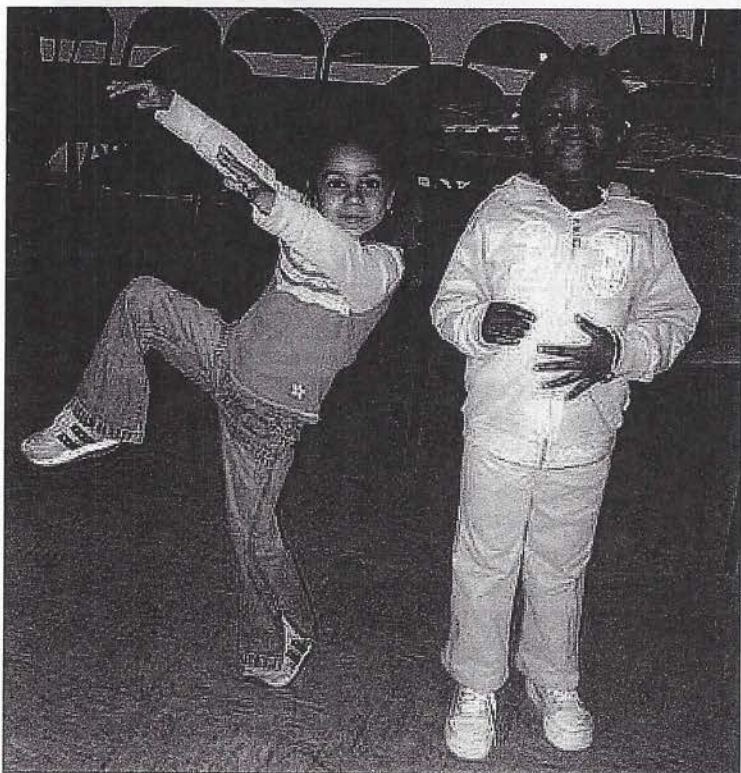
**Selected children's literature fosters open-ended dance experiences and rich conversations that promote children's emerging literacy.**

### Read it, move it, be it!

Selected children's literature fosters open-ended dance experiences and rich conversations that promote children's emerging literacy. Invite children to use the plot and characters as inspiration for creative movement. Encourage them to explore movement rather than just pantomiming the action of the story (Tortora 2006). For example, if a character in the story is walking, encourage children to discover many different ways to walk, rather than imitating the walk illustrated in the book.

Open-ended prompts challenge children to problem solve around a set of parameters. For example, if a book features a snake character, the following prompts could encourage children's snakelike movements:

- How would you move if you were a snake?
- I saw you use a *low level* to develop your snake movement. Did you realize you just did that?
- How would a snake move to this music?
- Can you show me how the snake moves along a curved pathway?
- What would a snake look like if it moved *fast*?
- I noticed your snake is *slithering*. How else could the snake move across the rug?
- You *curled* your body into a circle. Is there another way your snake moves in one place?



you've made your *low* shape, how can you move while still holding your shape? How is your shape different from Corinna's shape?" Finally the teacher can *empower* a child by noticing and validating her shape and inviting peers to do the same. For example, the teacher might say, "I see Corinna's fingers are stretching *wide* apart. Who can add a wide stretch to their shape?" Notice that the teacher asks the children to expand on their friend's ideas rather than imitate what their friend has done; they could interpret a *wide stretch* in many different ways. Scaffolding the three *Es* gives teachers a way to challenge children and create thoughtful activities.

### Using Dance Standards

The following is a modified excerpt from NDEO's *Standards for Dance in Early Childhood* (2005). Teachers can refer to the standards as they help children develop movement ideas.

**Body:** Identifying body parts, moving body parts in isolation, and coordinating several body parts to move together

**Movement skills:** Nonlocomotor movement (moving in place) and locomotor movement (moving through space)

**Dance elements:**

*Space:* Direction (such as *forward*, *backward*, *side to side*)

Pathway (such as *zigzag*, *straight*, *curvy*)

Level (such as *low* to the ground, *high* off the ground)

*Personal space:* Knowing where your body ends and another begins

*Relationships:* Over, under, beside, and so on

*Time:* Slow, fast

The movements do not have to be consistent with the story. In fact, children get a better mental workout if challenged to invent new ways for the characters to move. In addition, it's helpful to refrain from making animal sounds during the activity. The sounds may distract children from exploring animal movement.

## Make room to move

Safety is a common concern in movement activities. Choose a space in the classroom that is free of distractions—the group meeting area is usually a good bet. If possible, move bookshelves, equipment, and other classroom materials out of the space. Avoid grouping children together if you know they have a pattern of purposely getting in each other's way.

It is helpful to start with just two or three dancers, with other children observing. After a few minutes, gradually add more children to the group as everyone gets better at managing space. As you grow in confidence, you can work with a larger group and in different spaces.

Children should be able to stretch out their arms and not touch anyone. However, young children are just learning about personal and shared space. They often bump into each other, either by accident or on purpose. A "home base,"

## Supporting Children with Special Needs

Every child should have opportunities to move and create movement. Movement activates the neural wiring throughout the body, making the whole body "the instrument of learning" (Hannaford 1995). This multilayered experience serves as a framework for creating adaptations for children with different abilities, interests, and backgrounds (Lorenzo-Lasa, Ideishi, & Ideishi 2007).

When involving children with special needs in movement activities, adapt the prompts and challenges to reflect their social, cognitive, and physical abilities. For example, if a child uses a wheelchair, be certain the dance space allows for free movement. Include prompts for the parts of the body the child can move. Even if a child is not verbally expressive, it's important to include him in the discussion by making eye contact and affirming his accomplishments ("Joey, I noticed your eyes were moving up and down" or "You really like stomping your feet!"). Some children may prefer to play small instruments for the group or record ideas on the Dance Word Bank. Such contributions make activities rich for all children.

## Making Shapes Song

A few children dance freely while others in the group sing this song to the tune of "Three Blind Mice." At the end of the song, the dancers freeze into a shape.

*Making shapes,*

*Making shapes.*

*Ben and Latoya,*

*Ben and Latoya.*

*He's moving moving moving now.*

*She's moving moving moving now.*

*Freeze right now.*

*Freeze right now.*

Ask the other children to describe the shapes the dancers are holding (such as "Ben is *low* to the ground and *behind* Latoya. Latoya is standing *tall* in a *high level* and is frozen *beside* the block area.") Have children describe the shapes by what their classmates' bodies are doing, not by what they look like (a cat, a cow, a snake, and so on).

or personal space, where children are not touching anyone or anything, is a good idea. Children can complete locomotor movements—those in which they move from one place to another—as they move away from and back to their personal space.

Another strategy is to give specific verbal prompts, such as "Can you make your shape without touching your neighbor?" Visual cues such as rugs and individual carpet squares help define space. Another way to define physical space is to offer children hula hoops to hold or place on the floor. Older preschoolers can understand the concept of a magic bubble enclosing their body. Warn them that if their bubble touches anyone else's bubble, both bubbles will pop.

At the end of a locomotor movement experience, such as walking around the room in curved pathways, prompt children to use eight counts to move back to their personal

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space. "1-2-3-4-5-6-7-8—and freeze." Use a small percussion instrument as you count. Comment on a child who moves back in the eight counts, so other children see how important it is ("Madelyn returned to her space before I said freeze").

## Conclusion

Creative movement activities foster critical-thinking and problem-solving skills while encouraging joyful exploration. During creative movement experiences, children learn to think before they act, pay attention to detail, and consider differences between experiences. Using NDEO's dance standards, open-ended questions, and interesting literature, teachers can scaffold movement experiences that encourage children to generate and express themselves with rich verbal and body language.

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## Children's Books Involving Movement

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- Giraffes Can't Dance*, by Andrea Giles. 1999. New York: Orchard Books.
- The Magic Hat*, by Mem Fox. 2002. New York: Harcourt.
- My Many Colored Days*, by Dr. Seuss. 1998. New York: Random House.
- Pete the Cat: I Love My White Shoes*, by Eric Litwin. 2010. New York: HarperCollins
- This Jazz Man*, by Karen Ehrhardt. 2009. New York: Harcourt.
- Watch Me Dance*, by Andrea and Brian Pinkney. 1997. New York: Red Wagon, Harcourt.

## Connecting with Families

Keeping families informed about how creative movement benefits children contributes to connections with families (Lorenzo-Lasa, Ideishi, & Ideishi 2007). Create and post a movement photo gallery for families to see when they drop off or pick up children. With each photo include a brief anecdote about what the child discovered or verbalized.

When possible, use direct quotes from children and show the process of their discoveries. Invite children to look at the photos and recall their movement experiences. Encourage families to ask their child open-ended questions, such as "How can you use your favorite movement on the playground?" or "What kind of movement will we do when we go to the grocery store?"

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