

LET'S GET MOVING: USING CHILDREN'S LITERATURE TO SUPPORT PHYSICAL ACTIVITY AND READINESS SKILLS

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Abstract

The early years are the ideal time to support the physical activity level of children while also addressing readiness skills. With growing evidence of the link between physical activity and child development, it is imperative to find ways to routinely support physical activity. However, research has shown that children do not spend enough time in active motor play. This concern is even more critical for children with disabilities who often have challenges with development and physical activity. Strategies are provided to harness routine literacy opportunities so as to promote motor, social, language and cognitive development while increasing physical activity.

Keywords: Motor movement, physical activity, readiness skills

The preschool years are an important time for establishing physical activity habits and developing readiness skills across many domains such as motor, social, communication, and cognitive. The National Academy of Medicine recommends that preschool aged children participate in fifteen minutes of physical activity for every hour that they are in preschool or a childcare center (Institute of Medicine, 2011). However, researchers have found that most preschoolers do not meet the daily physical activity recommendations in their early childhood programs (Beets, Bronstein, Dowda, & Pate, 2011). Compared to their typically developing peers, preschoolers with disabilities often have fewer opportunities to engage in physical activities. In order to ensure that *all* children have opportunities to participate in physical activities, it is important to provide multiple diverse motor opportunities, using engaging materials and intentional strategies that promote high levels of physically active behaviors (Brown et al., 2016). Moreover, given the link between physical activities and different areas of development, teachers can provide opportunities for children to learn an array of skills during physical activities. The purpose of this manuscript

is to highlight a) the importance of motor development and physical activity for child development, b) how to link routine literacy activities to physical activity, c) a criteria for selecting interactive movement books, d) strategies for educators, e) strategies for families and, f) movement ideas for use with children's books.

Importance of Motor Movement and Physical Activity on Development

Physical activity during the preschool years is crucial not only in terms of gross motor development, but it is also important for other areas of development as well. Research has shown a link between participation in physical activities and working memory, verbal fluency, understanding of spatial, temporal and sequential concepts (Jensen, 2005; Rapoport, van Reekum, & Mayberg, 2000; Wassenberg et al., 2005), kindergarten readiness skills (Iverson, 2010; Oja & Jürimäe, 2002) and academic and cognitive performance (Fedwa & Ahn, 2011; Iverson, 2010; Piek, Dawson, Smith, & Gasson, 2008). More recently, active motor play was associated with self-regulation and early academic achievement in preschool children (Becker, McClelland, & Loprinzi, 2014; Carson et



al., 2016). In sum, there is an established line of research linking physical activity and motor development to other inter-related areas of development, all of which influence the development of readiness skills.

Linking Motor Movement to Literacy Activities

Given the importance of physical activity and motor movement on child development and the lack of time and/or opportunities for routine physical activities in early education, it is important that educators and parents find creative ways to integrate movement into daily activities. One such strategy is to capitalize on the multiple literacy opportunities that occur during the preschool day. Storybook reading is one of the most common activities that support literacy skills, irrespective of a child’s ability, culture or language. Reading to children and discussing books can lead to improvements in children’s emergent literacy skills, such as the acquisition of new vocabulary, letter recognition, or phonological awareness (Lonigan, Anthony, Bloomfield, Dyer, & Samwel, 1999). In the context of reading, children can learn the meaning of text, connect book content to personal experiences, and gain knowledge about different topics. At the same time, within inclusive early childhood classes, it is not unusual to use *interactive movement books* as a way to support knowledge and skills while actively engaging children in early literacy. In doing so, all children benefit, especially children with disabilities. As Bremer, Croizer, and Lloyd (2016) indicate, physical activities can result in a reduction of stereotypic behaviors, improvement of social-emotional behaviors, and an increased attention span for children with autism. However, one of the first steps in linking literacy activities to motor movement is to carefully select books that support both physical activity and readiness skills such as language and cognitive development.

lected based on guidelines developed by Nasatir and Horn (2003) to ensure that the books were age appropriate for preschoolers, reflected diversity and inclusion, and used current terminology (see items 1, 6, 7, 8, 9). Four criteria were developed to ensure correspondence to *CHAMPPS* (*CHildren in Action: Motor Program for PreschoolerS*) (Favazza & Ostrosky, 2015-2018), a new preschool motor program that supports readiness skills. For example, some items stressed the fundamental motor skills (item 5) while other items stressed interactive movement, positional words, and body parts (items 2, 3, 4), all of which are addressed in *CHAMPPS*. Once the criteria for book selection was developed, preschool books were selected through a library search using key words (i.e., motor movement, positional words, body parts). After reviewing the selected books, one item was added to the criteria to ensure that the books supported appropriate behavior by young children who may have challenges with self-regulation (item 9). Two additional items were added (items 10, 11) to ensure that the selected books were feasible for use in classrooms (i.e., affordable, appropriate size for use in a class-wide read aloud activity). As can be seen in Table 2, books were selected that aligned with the motor program, *CHAMPPS*, with 2-3 interactive motor books selected for each motor unit. The cost of the books ranged from \$2-\$27 or about \$9 per book, depending on whether new or used books were purchased.

Early childhood teachers can actively engage children in motor movement as part of their large or small group reading time or during their routine circle time. Additionally, as parents read books that include large motor movements, they can support their child’s physical activity in the context of daily reading. The following sections highlight some strategies that can be used during school and at home to connect literacy and motor movement.

Criteria for Selecting Books Interactive Movement Books

Criteria for selecting interactive movement books were developed as part of a federally funded research project, using two sources (see Table 1). Five of the criteria were se-

Table 1
Criteria for Selecting Interactive Movement Books

Criteria: Insert ✓ if the book meets the criteria	<i>Move!</i> by Robin Page	<i>Hop, Skip, and Jump</i> <i>Maisy!</i> by Lucy Cousins	<i>Jump!</i> by Steve Lavis
The story is <i>age appropriate</i> for preschool children (in content, length, vocabulary); this includes picture books with no vocabulary.	✓	✓	✓
The story is <i>interactive</i> . It has some element that supports/encourages children to move in different ways.	✓	✓	✓
The story incorporates different <i>positional words</i> (over, under, up, down); list positional concepts used.	✓ on, in		
The story incorporates different <i>body parts</i> (i.e., fingers, toes, knees, legs, arms); list body parts used.	✓ legs	✓ toes	

Table 1 continued

The story incorporates <i>action words</i> (i.e., kick, throw, catch, gallop, tip toe, walk, jump, run, march, hop, hide, smell, sing); list action words used.	√ swing, swim, walk	√ jump, hop, skip, kick, run...	√ jump, swing, roar, march
The story emphasizes <i>cooperative play</i> with friends and family as opposed to competition; shows children or animals (i.e., animated characters) playing with friends, family, or others.			√
Story is <i>current</i> in its images and terminology.	√	√	√
The story represents <i>diversity</i> in images, showing children who represent a wide range of characteristics engaged in movement activities. Note which representation(s) of diversity is in the story: race (R), ethnicity (E), abilities (A), languages (L), gender (G)	N/A – all animals		
The story <i>does not</i> encourage undesirable behaviors and/or <i>does not</i> contain a story theme that might be considered violent, scary, unsafe or unacceptable in some families (i.e., 10 Little Monkeys Jumping On the Bed).	√	√	√
The size of the book is suitable for reading to a class of 15-20 children, (as opposed to smaller books used primarily for one-on-one reading).	√	√	√
The book is affordable.	√		√
Other strengths of story or book (list)	√ Students love stories about animals.	√ Maisy is popular among students.	

Table 2
Sample of Interactive Motor Books for Preschool

Unit Motor Skill	Title	Author
Unit 1 Foundational Skills (Body Awareness, Motor Vocabulary)	<i>Dancing Feet</i>	Lindsey Craig
	<i>From Head to Toe</i>	Eric Carle
Unit 2 Running, Walking	<i>Wiggle Like an Octopus</i>	Harriet Ziefert
	<i>The Snowy Day</i>	Ezra Jack Keats
	<i>We're Going on a Picnic</i>	Pat Hutchins
Unit 3 Hopping, Jumping, Balance	<i>Jump!</i>	Steve Lavis
	<i>Silly Sally</i>	Audrey Wood
	<i>Sometimes I Like to Curl up in a Ball</i>	Vicki Churchill
Unit 4 Catching	<i>Here are My Hands</i>	Bill Martin Jr. & John Archambault
	<i>Clap Your Hands</i>	Lorinda Bryon Cauley
Unit 5 Throwing	<i>Clap Hands</i>	Helen Oxenbury
	<i>Pete the Cat: The Wheels on the Bus</i>	James Dean
Unit 6 Striking	<i>Hand, Hand, Fingers, Thumb</i>	Al Perkins
	<i>Whoosh Around the Mulberry Bush</i>	Lindsay Gardner
	<i>The Animal Boogie</i>	Debbie Harter
Unit 7 Kicking	<i>We're Going on a Bear Hunt</i>	Michael Rosen
	<i>Kicking a Ball</i>	Allan Ahlberg

Strategies for Use at School and Home

Strategies for Educators

- *Select interactive books that physically engage children with themes related to the curriculum.* For example, during the preschool years, children are learning about: colors, letters, counting, body parts, positional words, animal movements and their habitats, and the weather and seasons. Interactive movement books can be used that address some of these concepts in fun and active ways during story time (i.e., *The Snowy Day* by Ezra Keats).
- *Plan 2-3 small blocks of time during the daily routine to read interactive movement books and get children up and moving.* Research has shown that even small amounts of physical activity can increase on-task behavior and children's capacity to focus (Luke, Vail, & Ayers, 2014; Priest, 2006).
- *Use books to introduce or reinforce motor movements such as jumping, balancing, and catching.* Interactive books can be used *before* a new motor skill is introduced as a way to focus children on a new motor skill or the body parts used to execute a motor movement. For example *My Hands* (Aliko, 2000) and *Clap Your Hands* (Cauley, 2001) can be used when introducing ball skills, while *Jump* (Lavis, 1998) or *Silly Sally* (Wood, 1994) can be read when teaching balance or jumping skills. In doing so, generalization of motor skills is reinforced while simultaneously teaching body parts, directional words, movement vocabulary and patterns in motor movement (i.e., jump, jump, clap clap).

- *Have children take turns leading interactive book reading.* Preschoolers enjoy reading books over and over once they are familiar with the story line. Moreover, re-reading interactive motor movement books can build confidence and support memory and language skills as children repeat the movements presented as part of the story.
- *Lead a flash mob!* This is a great strategy for showing off both motor moves and language skills. Several classes can join together to read and then rehearse moves from the same book. When this large group, interactive movement activity is done as a surprise for parents, staff, and other children, you can expect to see plenty of smiling, laughing, and energy.
- *Send home a video link of a teacher reading an interactive motor book.* For schools and families that regularly use technology, this is a way to get families moving together and reading as they watch the video. Be mindful of the district's policy of gaining consent for recording and sharing videos of children.

a result of helping with book selection. As parents become familiar with the school library resources, they can advocate for more books if there is not a sufficient selection. In addition, participating in these activities may result in parents' increased awareness about the importance of and the need for schools to have books that reflect the rich diversity represented in their child's class.

- *Use a weekly newsletter* to inform families about the interactive movement books used that week at school. Encourage family members to check these books out from their local library (first making sure the library has the books), and have children teach family members the motor movements at home.
- *Assist teachers in creating a classroom library checkout system* for children to take turns selecting interactive movement books to bring home. Schools are more likely to purchase multiple copies of books when these materials are linked to the preschool curriculum.
- *Create a book club for the classroom where families can share or trade books they have with other children and families.*
- *Support the classroom library by asking the teacher to identify "wish list" of books for the classroom* that can be purchased by families to acknowledge a child's birthday, support a book fair, or thank a teacher at the end of the year or at a holiday.
- *Invite families to audio or video record their interactive book reading at home.* This strategy enables children to "share their families" with their peers. Young children typically enjoy showing off their families to classmates, and this strategy supports the development of self-esteem, confidence, communication, social and motor skills.

Strategies for Families

- *Ask parent volunteers to review the criteria for book selection and assist in evaluating and selecting interactive movement books. By including parents in this activity, they may experience several benefits.* As parents become familiar with key criteria for book selection, it increases the likelihood that they may become better informed as consumers of children's books and they may become more engaged with their child by reading interactive books at home. Parents also might become more engaged in story reading within the classroom as

Table 3
Movement Ideas for Children's Books

The Snowy Day by Ezra Keats

Activity 1

- Have children walk around alternating with their toes pointing IN, then their toes pointing OUT.
- Use visual support cards showing toes IN and toes OUT can be used to assist children who are English Language Learners or struggling learners.

Activity 2

- Place children in pairs and hold hands.
- Have them move from one side of the room to the other while dragging their right foot, then dragging their left foot as they return to their starting place.
- Increase the pace the second time they repeat this partner activity with their right then left foot.
- Partner children together by drawing names from a can, or purposefully pairing children together to encourage social interaction (i.e., a shy child with an outgoing child).

Activity 3

- Arrange children in a circle, with a large laundry basket in the center of the circle.
- Place 5-10 beanbags in front of each child, and as the teacher says "Throw a snowball," each child should try to throw one beanbag into the laundry basket.
- This can be structured in multiple ways: (1) One child throws at a time, (2) The children all throw one snowball, then wait until the adult says "Throw a snowball" before they throw a second one, or (3) All children with a certain color beanbag throw it at the same time, and so on.
- Children who have not yet developed strong throwing skills can be positioned closer to the laundry basket, while children who are skilled throwers can be encouraged to move farther away from the basket for extra challenge.

Table 3 continued

From Head To Toe by Eric Carle	
Activity 1	<ul style="list-style-type: none"> • Ask a child to pick an animal (i.e., animal from the story) and show the class how that animal moves. For example, a student might select the gorilla, then ask each child to move like a gorilla. • The teacher/parent might preface this by asking: “What sound does a gorilla make? How does he move?” Additionally, the teacher/parent might model movements (i.e., swing arms, lightly pound chest). • Ask guiding questions such as: “Does a gorilla walk like a human? How does he walk? Show me how he walks.” Encourage children to try different types of movements, such as jumping, pretending to eat a banana, pounding lightly on the chest, and imitating how a gorilla walks or climbs a tree. • After about two minutes, ask the child/children to go to their gorilla nests and rest. After they rest for one minute, wake up the “gorillas” and ask someone else to select another animal. • Eric Carle’s book can be used as a guide if necessary as the story shows specific animal movements such as: <i>Penguin turns his head. Waddle like a penguin; Giraffe bends his neck. Stretch tall and high like a giraffe; Cat arches his back; Buffalo raises his shoulders. Raise your shoulders high and pretend that you are very big, stretch and flex to show big muscles like the buffalo.</i>
Activity 2	<ul style="list-style-type: none"> • Play the <i>Mirror Game!</i> The leader faces the child/children, who will reflect the leader’s movements. • Act out movements that a particular animal would do, taking care to make the movements exciting and exaggerated so that children have fun and get exercise. • Each student will copy or mirror the adult’s movements and then guess what animal you are acting out. Try to refrain from making any animal noises so that children will rely on looking at physical movements to guess which animal they are copying. • Start by acting as an elephant, using an arm as the trunk, swinging the “trunk” side to side several times. Take large steps, swinging the trunk. Allow a couple of minutes for children to imitate the motion and guess the animal. • Move like a chicken, bobbing your head from front to back, bending your knees and arms, and flapping your elbows. • Encourage children to be the leader, modeling an animal of their choice for others.
Activity 3	<ul style="list-style-type: none"> • Create a <i>Gorilla Obstacle Course</i> using a trampoline, play mat, hula-hoops, and small tunnel. Arrange the materials in this order: trampoline, soft play mat, small tunnel and then few hula-hoops. • Have children pretend that they are gorillas traveling through the jungle. First, they need to jump off “the tree” (trampoline) and on to the “jungle floor” (play mat). Next, they must crawl through a “cave in the jungle” (play tunnel). Last, they walk like a gorilla through the “jungle puddles” (hula hoops). • To help children understand directions and sequence, model moving through the obstacle course like a gorilla first. • Provide positive feedback as children go through the obstacle course: “<i>Oh! You made it through the jungle cave! Glad you did not get stuck inside! Now use your hands and walk like a gorilla through the jungle puddles!</i>”



Movement Ideas for Use with Children’s Books

In addition to the strategies previously presented, teachers and parents could develop movement activities for use with selected books or children’s favorite books. For ex-

ample, there are many ways to turn the read aloud of the popular book, *The Snowy Day* (Ezra Keats, 1980) into an interactive motor and literacy activity. After reading the book, you could sprinkle confetti on the floor and pretend it is snow. Next, have the children lie on their backs and move their arms up and down to make snow angels then roll onto their stomachs and make them again. Then ask children to stand and pretend to climb a big snowy hill, lie back down and repeat the movement sequence again. See Table 3 for more movement ideas for use with two children’s books that support skill development in areas such as motor, social interaction, following directions, and communication.

Conclusion

Active motor play is a fun and natural context for learning. However, with the increasing demands faced by teachers and parents, the reality is that most children are not engaged in enough physical activity on a regular basis. One strategy for addressing these concerns is to embed physical activities into existing routines to maximize both learning and movement opportunities. While these activities should not replace the use of structured and unstructured motor play for young children, they do provide small moments of intentional motor movement that could be linked to the



preschool curriculum. Reading interactive movement books in the classroom and at home, and pairing these books with physical activities, can increase motor development, school readiness skills, and the overall well being of preschool children with a wide range of developmental needs.

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