

Facing the Challenge of Motor Development

by Phyllis S. Weikart



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*Five year old Jason, playing with friends outside, was trying to skip. His teacher noticed that he was having a hard time executing an accurate pattern — he did a **half skip**, meaning he did not hop after his second step. His attempted skip was STEP/hop, STEP, rather than the accurate pattern of STEP/hop, STEP/hop.*

Jason is a typical five year old of the '90s. His half skip pattern arouses curiosity. Why are more and more children having difficulty with basic movement skills and timing patterns? With a good experience base in the natural process of growing up, these basic skills should be in place by the time a child enters kindergarten. However, many children today do not seem to have enough motor development opportunities to promote the necessary basic skills, i.e., crawling, hopping, and skipping. And without these opportunities, motor coordination and steady beat independence generally fail to evolve.

Yet most adults feel that the development of motor coordination is a natural event. In a 1998 international study of early education by researchers at the High/Scope Foundation, most groups of parents and groups of teachers in 15 countries rate motor/physical skills at least of moderate importance for their children. Yet they apparently believe that the development of such skills is automatic. For neither group feels that they should assume responsibility for motor/physical development in children nor assign that responsibility to others.

Almost all children are born with the capacity for the normal development of basic motor coordination and independence in steady beat timing. Brain development research has documented the observation that mothers make the world over. Motor development moves from head to foot and from the center of the body to the extremities. Motor areas of the brain develop first and very systematically. Indeed, Steven Petersen, associate professor of neurology at Washington University Medical School, observes, regarding the overall development of children: "At a minimum, development really wants to happen. It takes very impoverished environments to interfere with development because the biological system has evolved so that environment alone stimulates development."

Movement (gross motor coordination) and timing (steady beat) are not abilities that children must go to child care to learn or preschool to acquire. While they should develop as a result of normal environmental interaction, they often fail to develop adequately as evidenced in the many Jasons of this modern world. In a recent High/Scope Foundation (1997) study in Effingham, Illinois, with more than 600 four to ten year olds, ability to maintain a steady beat timing was only partially explained (25%) by the age of the child. If steady beat timing was the product of *natural* growth, age alone should explain 90% to 95% of the ability. So we have a problem. There are normal skills in motor development and steady beat timing that should develop but they do not, at least in the ways they used to. Has the environment changed?

While it is unclear why this problem has developed, a number of culprits are at hand for blame:

- too much sedentary TV watching, often alone;
- time spent with computers rather than active play;
- smaller families with less sibling play;
- urbanization with the loss of play space and vacant lots for pick-up games;
- “fear of strangers” leading to the protection of children with many afterschool activities organized and controlled by adults with adult rules and adult purposes.

Enhance Motor Development

There are many things a center-based program can do to enhance motor development, especially steady beat timing. Two practices stand out as of primary importance. The first is to ensure that the children have the opportunity to see that movement itself can be consciously employed, that is, it is explicitly planned and described. This conscious use of movement is *purposeful*. While spontaneous use of general movement such as that used in running, catching balls, building with blocks, swinging, and the like is important, movement that is purposeful, that is, movement undertaken with conscious thought and intent, gives control and awareness to the child. Thus children can and should be asked to plan their physical body movements. While children may have difficulty expressing their actions initially, they can listen to adults’ or peers’ descriptions of those actions. These discussions focus on what was done and how it actually felt. As in the most effective learning activities, purposeful movement is combined with thought and language.

• Adding Purposeful Movement

Center directors and teachers can add purposeful movement as something that has its own value. To accomplish this goal, children need support to progress from actions that occur only to facilitate other activities, such as block building, painting, or bicycle riding, to actions that require a decision (Valerie: “I’m going to run to that tree and back!”); involve choices (Bobbie: “Let’s move our elbows up and down this time.”); and include movement labels (Kelsey: “Let’s all jump on our two feet.”). When manipulatives and objects are used with movement, the adult can ask Michael what he has to do with his legs to make the bicycle wheels go around, or Tamara how she used her whole body to place the last block on top of the tower, or what Brian did with his arm when he painted at the easel. These questions create recognition and conscious control of movement through a dimension of awareness, language, and purpose for motor skills.

Children need and enjoy extensive repetition of many common physical movements. For example, crawling on hands and knees contributes to coordination because arms and legs will eventually work in opposition for balance, grace, and many other physical skills. If crawling is not encouraged and supported, even by school-age students, many children may have difficulty with opposite side movements throughout life. Watch some adults try simple physical routines who can’t “get the hang of it.” Usually these adults are lacking oppositional movement ability.

Other physical activities may need to be specifically encouraged. Three year olds (and older) children need to be encouraged to imitate others who are experimenting with walking on tiptoe, walking backward, galloping and skipping, and climbing on outdoor play equipment. They need to invent special movements all on their own. All of these movements are purposeful when the child makes a decision to do them, and even more so when discussed afterwards, if only an exclamation, “I used my wrist to hit that ball!”

• Adding Steady Beat Timing

The second concept that requires a special focus is steady beat timing (independence in keeping steady beat). Again, most children have the mental and physical capacity to keep steady beat. But the skill will not evolve without opportunities to hear rhymes, songs, and recorded or live music where they may feel the underlying steady beat. Steady beat is *felt* when the infant is rocked to a lullaby or the toddler *walks* on an adult’s feet while that parent or caregiver speaks a rhyme, sings a song, or marches to music that is playing.

Beyond the infant and toddler stage of development, children need opportunities to pat steady beat, to rock back and forth, and to march to music, poetry, and chants. At first, children will imitate others, a natural occurrence. With daily beat-keeping activities, children will develop independence gradually, some more quickly than others. The capacity is there; but without opportunity, many children may never reach independence with steady beat.

Why is steady beat important?

- Steady beat independence helps the child develop inner control.
- Steady beat is the basis for coordinated physical competence.
- Steady beat matched to external sources requires focused attention.

In the Effingham, Illinois, project, there was significant correlation between steady beat and teacher-rated ability to attend. Children who have steady beat independence show greater ability to pay attention, to focus on tasks. Children without steady beat are more likely to be distracted easily. There is also a statistically significant correlation between steady beat independence and performance in academic learning, particularly reading and math. The same correlations have been found in several other research projects conducted by endorsed trainers in the High/Scope program, *Education Through Movement: Building the Foundation*. Good motor development and timing ability support better math and reading performance.

However, research over the past 15 years has shown a significant decline in children and young adults' ability to keep steady beat. Often fewer than 10% of kinder-garten children are competent in this ability and fewer than 50% are competent among older students and young adults. Why this decline? It seems that fewer beat activities are available for children. Fewer children jump rope, dribble balls, play jacks, and respond to nursery rhymes and sing simple songs. In addition, many adults focus children on the rhythm of the words and syllables, such as in playing "Patty Cake."

Patting (moving) in rhythm usually fractures comprehension. The research evidence suggests that children who respond consistently to steady beat seem to develop increased comprehension capability, clearer enunciation and speech flow, increased attending, and in-tune singing.

What can be done to ensure success?

What can centers do to ensure that a higher percentage of children develop gross motor capability and steady beat timing? Here are several considerations:

■ **Ensure proper equipment.** Appropriate equipment and a suitable environment is a primary consideration. Is there space for movement? Are there balls and an area to bounce them? Is there climbing equipment? Is there a low balance beam for children to walk across and stairs (two to three steps up and down the other side)? Is there open space outside for children to run, jump, hop, gallop, and skip? Is there a CD or cassette player to play instrumental music (not vocal music) for patting, rocking, and marching? (Vocal music makes it difficult for the child to attend to the beat of the music as attention is drawn to the words which are sung in rhythm).

■ **Provide regular opportunity.** The second consideration is making time in the schedule to work with both steady beat and purposeful movement. Movement and

steady beat need to become priorities for young children. Can a brief and consistent time be found in the daily routine to work with steady beat, for example, at transition points during the day? Can times be found for children to be actively engaged in self-planned purposeful movement both indoors as well as outdoors?

It is important to remember that repetitious activities, while often boring to adults, are necessary for children. Typically children love to repeat action songs, parades, and events. Adults are challenged by new activities they are able to do — so it is with children. Often, though, children may just be figuring something out when adults change the action song or introduce a new activity. Taking the cues from children based on observations of their engagement will help to prevent these problems.

■ **Support staff training.** Staff need training to help them understand movement as an important skill in it's own right. Training is also necessary because the basic skills of staff in these areas may need strengthening. Movement and timing are not just intellectual concepts — adults need to be able to respond accurately in order to feel comfortable working with children. Many adults need respectful support to make the transition to where they themselves can be successful.

With an increasing number of children each year in center-based settings, the time at home that once was spent with mom or dad or other family caregivers has decreased. Certainly this shift does not mean that children must be deprived a supportive environment for adequate development. The challenge is before us. We can create an environment that enables purposeful movement and steady beat abilities to keep pace with chronological age. The Jasons in our society can be assisted in natural ways to develop their abilities and increase their success.