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Learning Through Music: The Support of Brain Research

by Elizabeth B. Carlton

"Star light, star bright, . . ."
"Ring around the rosey, pockets full of posies . . ."
"The farmer in the dell . . ."

Do you remember singing these simple songs from childhood? If the first part of a familiar song text is given, most of us will finish singing the song, even if we sing it only in thought! As grownups, we may remember the joy experienced while singing and playing musical games with our friends. Often as we hum these melodies, we think of other songs we learned during our early school years, and we realize that we can still sing many of these from memory! I wonder if singing many songs and experiencing other essential benefits music provides will be possible for the majority of our 15 million preschoolers today.

MUSIC! How can children learn or live without it? Music educators have known for years that quality music experiences enhance listening; invite intuitive and steady beat responses; and aid learning of vocabulary, sound and pitch discrimination, emotional responses, creative responses, memory, and many hours of fun for our wee ones. What powerful links to learning might we use within the many aspects of music? It appears that the first three years of a child's life are critical for optimal brain development, for music, and for learning through music. Now brain research is becoming available to support these perceptions. Let's consider some of music's important gifts, supported by research, for the children entrusted into our care.

Music develops listening skills.

Three-year-old Alissa heard her baby sister crying in the infant-care room down the hall. Even though two other babies were also crying, Alissa could recognize the cry of "her" baby! How important keen listening skills are!

We have all experienced crying, fussy, or sick children in our care who become calm when quality instrumental music is played. They are listening! If we sing to our three- and four-year-olds, we will probably be asked to sing the song again . . . and again. **Many** listening experiences during the first two years of life are necessary before children actually sing or talk with us. How special the day when we begin to hear their tiny voices joining our voice on repeating or rhyming words in a nursery rhyme, or on the last word and pitch of the song! Songs, instruments, and instrumental music are wonderful ways to develop children's listening skills and awareness of different words and musical pitches.

It is critical that we begin to develop listening skills in our child care settings. Many games about "Listen! What is that sound?" or "Listen! Who is talking/singing?" or "What is making that sound?" encourage children to pay attention to what they are hearing, and even to represent that sound, when we ask, "What sound does the cow (dog, lawn mower) make?"

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Moving to music, dancing, playing instruments, and experimenting with materials that make sounds are all helpful to the development of toddlers. "It is the **doing**, in addition to the **listening**, that offers the greatest positive benefit in all aspects of learning, especially in music" (Wilcox, 1999, p. 31). John Feierabend, nationally recognized early childhood music educator, states: "We see a very large difference in the singing capability and musical awareness between children five years old and younger who have been exposed to music and those who have not" (Feierabend, 1999, p. 19).

Listening is necessary to hear same and different letters of our alphabet, words, sounds in our environment, and musical pitches. There will be a lifetime of sounds our children will need to identify. The sooner we encourage listening skills, the more opportunities children will have to develop them.

Music invites intuitive responses.

Children's intuitive responses to high-quality musical recordings is universally positive from birth. Wendy Sims, professor of music education, University of Missouri-Columbia and chair of MENC's Society for Research in Music Education, states, "Researchers have found that, during the preschool and primary years, children demonstrate very positive attitudes toward many kinds of music" (Wilcox, 1999, p. 31). In our child care centers, we may see children moving their whole bodies intuitively to the mood, tempo, and dynamics of music, or to a special instrument they hear in the music long before much language develops. Offer them a scarf or a wide ribbon, and watch their responses grow! Play a Sousa recording, and children will march instinctively! Play a lullaby without words, and notice the intuitive responses! Children will move naturally to almost any musical selection. The seeds of listening encourage intuitive, creative responses to music.

Our challenge as adults is to provide **quality** music for their experiences as we respect the collective needs of children. They also need to be introduced to music they might not have opportunity to hear otherwise. When adults encourage children's intuitive responses to music consistently, children may surprise us as they move creatively to music, and respond with movement representation of the music that makes us want to join in their "dance."

Music is called the universal language because — with no words — all types of music touch children's ears, head, heart, and body, and leave them more alert for having responded.

Music strengthens aural discrimination.

During the first two years of life, young children listen and show us that they recognize many sounds important to them: voices of parents, siblings, and caregivers; sounds in their immediate environment such as their toys, TV, videos, and sounds in the kitchen and in the car. They also recognize musical sounds such as their own name sung, the theme songs for children's TV programs, music an older brother or sister may be practicing, songs sung to them, and the "music" heard in expressive voices of family members and caregivers.

The foundation for responses to aural discrimination is laid from the third trimester *in utero* (Wilcox, 1999, p. 29) and continues through age three. The quality of aural discrimination experiences will affect children's listening, singing, communication, and reading skills throughout their lives. On a nationally televised program, Oprah Winfrey made a plea for parents to sing to their children. Every adult working in child care also needs to take Oprah's request to heart, and sing, sing, sing for the musical needs and aural discrimination skills of their children.

Research shows that infants who are sung to and talkedto a lot develop greater phonemic awareness and later develop larger vocabularies. It has been reported that *in utero*, the fetus hears all sounds as "musical" through the amniotic fluid. Toddlers often join in singing with others, and create "infant songs" on their own while they play. Young children who miss these all-important interactions are often less expressive and sometimes delayed in their speech, and may be shy in communicating with others. They may not sing naturally on their own or with a group. This is music's gentle reminder to us that when music tenderly plants the seeds of aural discrimination, it is essential that adult caregivers nurture that seed through *daily musical experiences* that incorporate listening, singing, and moving to music in our child care centers.

Music helps children (and adults!) remember.

When young children sing "Eensy Weensy Spider" or "Clean Up, Clean Up," the underlying steady pulse of the song combined with the active singing pushes the brain to

remember the next part of the song, and the next, until we reach the end. This begins as "rote memory" (short term) but does evolve to conscious thought and long-term memory as children mature and songs that have meaning are sung repeatedly by individuals.

A former elementary student of mine recently called to share how much a particular song meant to her in fourth grade. Now that she is teaching fourth grade, she needed a copy of the music (she remembered all of the song!) so her students could sing it with piano accompaniment for their parents. This incident caused me to wonder if we have ever seriously considered the powerful link to learning that lies in all of the aspects of music.

Not only does music strengthen memory, it often wraps feelings or emotions around a song that enhances learning experiences. The Barney version of "I Love You" has placed "This Old Man" on the back of the shelf for two- and three-year-olds! Four-year-olds beam when singing "You Are My Sunshine" or "Hokey Pokey." Think of the pride instilled when singing patriotic songs, the peace experienced singing campfire songs, the religious connections strengthened when singing great hymns of faith. Learning is strongly influenced by emotion — "the stronger the emotion connected with the experience, the stronger the memory of that experience" (Jensen, 1998, p. 73).

For many children today, stress blocks learning avenues. We can relieve much of that stress through daily listening and singing experiences, moving to music, and exploring instrument sounds. We can help create that safe feeling of being a caring "classroom family" through the songs and singing games we lead. Help children develop a "music bank" of aural experiences that provide the foundation for rich memories throughout life.

Music helps children sing tunefully.

Singing experiences with the whole class are the most frequently reported musical activities today. In many classrooms, singing with a recording is the standard way this occurs. In reality, children participate more musically when adults in the classroom lead the singing! Yes! Sing a greeting song! Sing for a birthday! Sing a good-bye song! Often, the tempos recording artists use are faster than young children can imitate. You are right there, and can determine what tempo suits your children. Sing for the joy of singing!

Sometimes, artists forget to sing songs in the children's singing range. If at all possible, please sing **with** your children **in their singing range**, and model the pleasure felt when everyone sings together. The children's natural singing range may feel high or uncomfortable to us at first. Keep in mind that their tiny vocal cords cannot begin to match our adult vocal singing range. We need to "flex" and sing in their range!

Music helps children speak clearly and pay attention.

Become best friends with "neat steady beat." This element of music lies inside all language and music and holds it all together. When children speak nursery rhymes and pat steady beat, they speak more clearly. When teachers encourage children to keep patting steady beat while they sing, no one child races ahead to finish the song first. Children also sing more "in tune," and enunciate more clearly; therefore, singing is more satisfying to everyone. High/Scope Educational Research Foundation's statistics on the steady beat factor suggest that students who demonstrate beat-competence and beat-independence are the same students who perform well in all areas of the academic curriculum (Weikart, 1998).

Music makes transitions in the classroom go smoothly.

All segments of the daily routine — time to work, clean up, go outdoors, have a snack, story time, singing time, etc. — can be connected by using a simple melody such as "Hot Cross Buns" or "Where is Thumbkin?" and creating specific verses for your needs. Before long, children will join you in singing these "new" songs for transition. Many teachers have reported success with this idea. The simplicity and repetition of the melody has given children and adults confidence to sing many other songs.

Singing transitions together provides the time needed for children to finish one activity and be ready for the next. Since young children learn and play totally in the present, their sense of time is not the same as ours. *Their* plan is always the most important plan! Some children need those musical cues and a few extra minutes to finish their project. Try this singing transition to the melody of "Hot Cross Buns":

Time for a snack! Time for a snack!
Pass the napkins, pass the juice.
Time for a snack!

Sing this daily for a week, and then create new words using this same melody for another transition with your teachers next week!

Music helps children cooperate, think, and problem-solve.

Opportunities to cooperate in singing games, action songs, and movement to music are the early childhood active learning precursors to thinking, problem-solving, and memory. Music helps children and adults stay alert. *Music is the essential element for children that touches all ways young children learn.*

Music has received short shrift in today's world of educational values because we cannot measure its immediate importance with hard data. School budgets have cut music programs first. Teachers have allowed others to determine that the gifts of music should be relegated only to nonessential frills and to the area of entertainment. How disappointing. **We have to help others realize that quality music experiences provide *essential gifts to learning* found nowhere else.**

Musical instruments provide beginning experiences in pitch, timbre, and texture.

Exploring the various sounds of instruments fascinates young children and, again, can strengthen aural discrimination. They will discover that most instruments make several sounds; they should be encouraged to talk about what they discover.

The music area of the classroom should contain four or five rhythm percussion instruments, a small keyboard, cassette player with headset(s), and several short tapes of songs and instrumental music. Instruments and tapes can be rotated on a monthly basis for maximum learning.

If parents play musical instruments, invite them to share with your class. Older brothers and sisters often need an opportunity to play for others. Here is a perfect opportunity to share music between generations!

Music is FUN! – and fundamental for all young children.

Research suggests that the first three years (**our preschool years!**) are critical for combining music experiences with learning — especially for children in at-risk categories.

Because movement almost always accompanies these musical experiences for young children, we should endeavor to provide these double reinforcements in all areas of the curriculum, because **the body, voice, and brain are united for optimal processing**. Grace C. Nash, noted pioneer in American music education, has said for over 20 years that music and movement are the **first languages of childhood** — used before traditional language provides the link to communication. As I have interacted with and observed infants and toddlers for over 40 years, I wholeheartedly concur. Moving and singing are joyful and memorable experiences! Children don't begin to get enough to satisfy their needs.

Daily music experiences in child care can make many valuable connections to our children's language capabilities, memory, physical activity, creative thinking, emotional stability, discipline, and emerging academic success. As brain research begins to support the importance of learning through music, we must continue to find useful ways to make the gifts music provides essential in our daily routine. While music possesses awesome meaning and great value in and of itself, our children will never be able to realize this unless we begin to share these gifts every day. Music's gifts abound around us. Let's use them now to make significant differences in ourselves and with all our children.

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