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Lighting Up the Brain With Songs and Stories

Shelly Cooper¹

Abstract

Songs and stories have a strong relationship to each other and have the capacity to boost brain development, increase vocabulary, and promote future academic success. The sounds and foundational structures of reading and singing provide young children with successful pathways for advancing language skills, increasing memory, and promoting emerging literacy. They both provide multiple opportunities for engaging in reciprocal vocalizations while simultaneously immersing children in the structure, rhythms, rhymes, and melodic patterns of language. Brain imaging provides researchers and teachers with evidence the songs and stories can “light up the brain.”

Keywords

songs; stories; brain development; early childhood; emerging literacy

Once Upon a Time . . .

It is likely that the three words “once upon a time” are very familiar, and if prompted to finish the sentence, your imagination could easily create a wonderful, adventurous story. If someone were to stop you on the sidewalk or in the hallway and ask you what songs and stories were your favorites as a child, it is likely that special ones would immediately come to mind. Songs and stories have a strong relationship to each other, to family and cultural traditions, and both promote brain growth. Children (and adults) of all ages can be engaged through songs and stories, have behaviors and moods affected, and creativity inspired, while simultaneously having the budding musician within them nurtured.

Connecting With Brain Research

Scientists and researchers are finding new and innovative ways to explore how children learn. Modern technology now allows for intrauterine photography and brain imaging. There is research in the fields of fetal aural stimulation, audiology, and infant brain response. Studies have shown that infants who received systematic prenatal musical stimulation exhibit “remarkable attention behaviors, imitate accurately sounds made by adults (including nonfamily members), and appear to structure vocalization much earlier than infants who did not have prenatal musical stimulation” (Shetler, 1985, p. 27). Infants wearing event-related potential caps allow scientists glimpses at the way

children’s brains process new events and stimuli through sensors on the cap that measure brain changes. Findings from these new types of learning research have identified three basic overarching principles: (a) learning is computational, (b) learning is social, and (c) learning is brain-circuitry driven (Vergano, n.d.). Songs, stories, and storytelling—especially for young children—are social learning environments, and it is the social interaction that promotes bonding between individuals while supporting and extending learning.

Brain development is dependent upon activity and stimulation and some have referred to the infant’s brain as an “Unfinished Symphony.” Every experience for a baby “excites certain neural circuits and leaves others inactive” (Robinson, 2006, p. 55). Infants and toddlers have “innate capabilities to see and hear patterns” (Vergano, n.d.). As music is constructed through patterns, music educators can reinforce and build upon those capabilities. T. Berry Brazelton, a Harvard professor of pediatrics, posits “the most important reason our brains are not fully formed at birth is that humans are social beings who live and work together in a community” (Robinson, 2006, p. 56). The social community of musicking within a music classroom, preschool, or child-care setting fuels interactions and stimulates learning.

¹University of Arizona, Tucson, Arizona

Corresponding Author:

Shelly Cooper, University of Arizona, School of Music, PO Box 210004,
 Tucson, AZ 85721
 Email: sccooper@email.arizona.edu



Figure 1. A mother singing a book to her child during a preschool music class

Similarities Between Songs and Stories

We share information and ideas through lullabies and literature, emotionally connect with the children involved, and promote emerging literacy. Songs and stories should be a natural part of children's everyday experiences. Children who are immersed in music and language are more prepared to listen, more receptive and alert, and more active in their responses. From the moment children are born, they actively respond to high-pitched voices and variations in pitch. Infants around age 6 months already experiment with different types of sounds and pitches (e.g., loud, soft, high, low) and by 8 to 12 months their sounds start to imitate the tone and variation of "real" speech. Between ages 2 and 3 they have become competent and confident communicators.

"From infants' early interest in and responses to sounds, to toddlers' increasing ability to convey messages through gestures, vocalizations, words, and sentences, we are nurturing this idea of having a conversation with someone" (Birckmayer, Kennedy, & Stonehouse, 2008, p. 27) Similar types of engaged exchanges within music environments can nurture the conventions of "musical conversations." Through the exposure to chants and nursery rhymes, children develop skills in using a wide variety of vocal sounds. Therefore, improvising stories, sounds, and melodies about nursery rhymes become natural extensions within a child's play. Children also improvise original songs and chants to accompany their play and become avid



Figure 2. A child singing a book to other children

storytellers. From their daily experiences, young children become "active constructors" of their understandings (Bowman, 2004; Bredekamp & Copple, 1997).

The sounds and foundational structures of reading and singing provide young children with successful pathways for advancing language skills and increasing memory and attention span.

Singing and reading have the capacity to boost brain development, increase vocabulary, and promote future academic success. They both provide multiple opportunities for engaging in reciprocal vocalizations while simultaneously immersing children in the structure, rhythms, rhymes, and melodic patterns of language.

Children's books contain more unique vocabulary words as compared to what children hear in their typical everyday conversations, and "research shows that a love of books is the number-one determinant of future academic success" (Pfaff, 2008, pp. 123-124). Additionally, songs and books provide aural and visual stimulation and their foundational structure of rhythm and rhymes are building blocks for learning and literacy in all content areas. "Children who have lots of experiences with books absorb the rhythms and patterns of language and, at surprising early ages, begin to imitate the language and gestures their caregiver uses while sharing stories, sometimes turning pages and murmuring as they 'read' the pictures" (Birckmayer et al., 2008, p. 45). In addition to pictures, starting at approximately age 15 months, children will begin to notice print and "by 32 months may track across a line of print with a finger or hand while 'verbalizing her memory' of the text" (Schickedanz, 1999, as cited in Brickmayer et al., 2008, p. 45).

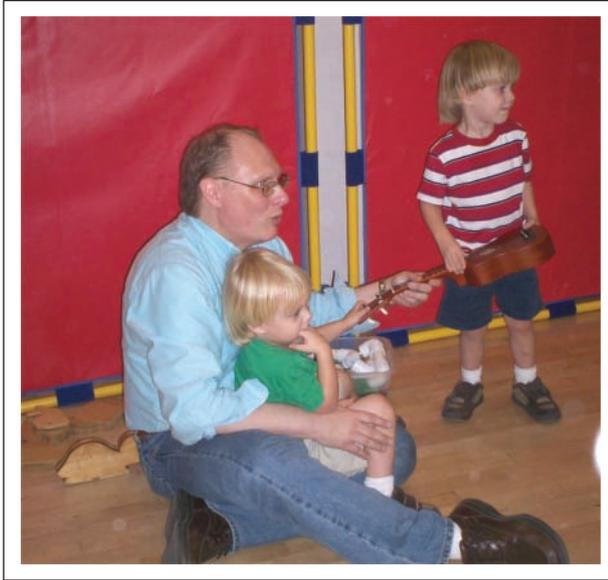


Figure 3. Listening to a story with daddy

The Reciprocal Process

Young children's music learning processes are similar to those in language acquisition; therefore, it is important for teachers and parents to combine books and stories as this promotes a reciprocal process of learning for language and music literacy. "Music experiences . . . can help young children learn to listen carefully and selectively, a critical skill for enjoying and learning from stories" (Birckmayer et al., 2008, p. 34). From the moment of birth, children are becoming literate and we want them to become literate in their spoken and written language and the sung and written language of music.

All the strategies that stimulate, sustain, and respond to infants' and toddlers' language development and their participation as listeners, observers, sound makers, singers, and speakers—in short, all the strategies that nurture a love of stories—are also developing their emerging literacy skills. (Birckmayer et al., 2008, p. 117)

Similarly, stories and storytelling experiences can help young children be expressive music makers. It is widely recognized that books can expand young children's budding vocabularies, and likewise songs can do the same. Utilizing the often rhyming, repetitive texts in books, adults can add melodic snippets for specific



1. 15-month boy "reading" a book



2. 33-month girl "reading/singing" book

repetitive passages to create a "win, win" experience for children.

Good books and stories "grow with children" and can reach multiple age levels. Singing only one snippet of a repetitive phrase can engage the youngest children. For preschool- and school-age children, increase the interaction by adding more singing segments, accompanying with instruments, and dramatizing. Five of my favorite children's literature selections (listed below alphabetically by title) for their engaging repetitive text are (a) *Brown Bear, Brown Bear, What Do You See?* by Bill Martin; (b) *Chugga-Chugga Choo-Choo*, by Kevin Lewis; (c) *Goodnight Gorilla*, by Peggy Rathmann; (d) *Not the Hippopotamus*, by Sandra Boynton; and (e) *What Shall We Do With the Boo-Hoo Baby?* by Cressida Cowell.



Figure 4. Children embracing music making

Selecting Stories

Music teachers make numerous decisions as to the song repertoire to introduce in their classrooms. The number of children's books available can create an equally daunting task for music educators seeking to choose appropriate titles for incorporating within their classrooms. The list below—not by any means to be considered exhaustive—highlights items to consider when choosing a book for integration with music:

- Segments where words are predictably repeated throughout the text (repeated patterns lend themselves to instrumental accompaniment)
- Books that contain echoing phrases
- Books that contain illustrated folk songs or explanations of a musical style or form
- The lyricism of the author's words or the rhythm of the text (rhythmic cadence)
- Books that reinforce steady beat and/or vocal inflection
- Books that contain participation opportunities
- Books that lend themselves to incorporate movement
- Books that lend themselves to incorporate instruments or found sounds
- Books that reinforce singing
- Books that reinforce specific music skills and/or concepts (e.g., music terminology included within text)
- Books that when read with recorded background accompaniment enhance the story's mood and/or integrate within a thematic unit

- Books that are appropriate length for the students' ages
- Books that present familiar subjects/topics
- Books that respect diversity and do not portray stereotypes or bias

Another important consideration is a book's illustrations. Jalongo (2004) identifies the illustrations as the "heart of a picture book" and posits high-quality illustrations and photographs enhance the likelihood that the book will be more appealing to both children and adults.

Remember to repeat stories and songs multiple times over varying time periods. Children desire repetition and this desire ". . . which is valuable for building vocabulary and developing language skills, shows that children are engaged" (Birckmayer et al., 2008, p. 73). The best compliment an adult can hear upon finishing a book is the children's excited uttering of "again, again." (See the sample lesson for suggested teaching strategies of combining folksongs and stories.)

The End . . .

Psychologists, neuroscientists, roboticists, and music teachers are all interested in learning how brains grow, map, and form connections. Brain imaging provides researchers and teachers with evidence the songs and stories can "light up the brain." "The newborn has a superactive brain and is primed to learn" (Robinson, 2006, p. 55). Music educators can build upon that "primed" brain and enhance children's learning and enjoyment by engaging students in a variety of songs and stories within their daily activities.

Author Arnold Zable (2002) wrote, "Whether young or old, stories connect us and add meaning to our lives. We tell stories because we must. Stories are what make us human." As music educators, we also understand that whether young or old, singing connects us and adds meaning to our lives. We sing because we must. Singing is what makes us human. Share your passion and nurture the children's passion, by giving them the lasting gift of lullabies and literature.

Young children who are given the gift of stories [and songs], who learn to love them from an early age and enjoy their endless benefits, have received a gift that will last a lifetime, one that provides pleasure in the present and limitless possibilities for the future. It is a gift that is ours to give. (Birckmayer et al., 2008, p. 118)

Appendix

Lesson 1: Combining Lullabies and Literature through a Connecting Theme

Grade Level: K-2

Songs:

- “Lullaby My Jamie” (Latvian Lullaby)
- “What’ll We Do With the Baby?”
- “What Shall We Do With a Drunken Sailor?”

Book:

What Shall We Do with the Boo Hoo Baby, by Cressida Cowell

Selected Skills

Steady beat, singing, vocal exploration, playing instruments, bordun

Primary Focus:

- While teacher hums melody for “Lullaby My Jamie,” have students gently rock side-to-side matching the beat. Teacher then sings text for English verse 1 multiple times.
- Teacher models bordun of “sleep, softly sleep” (tam, ta, ti, tam, rest) by patting lightly on knees while whispering the words.
- Assign a small group of children to pat and whisper bordun; assign another small group to snap on the rest. Perform bordun while teacher and other children sing melody.
- Transfer pat to barred instruments (E, B) and snap to triangle or finger cymbals; perform.



Lull - a - by my Jam - ie, ___ Soft - ly sleep my child. Sis - ter rocks you gent - ly, ___ Soft her hands and mild.

Figure 5.

Lullaby My Jamie

Latvian	English – Verse 1	English – Verse 2
Aija, Ancit, Aija Saldā miedziņā Māsiņātevi šūpos Vieglām rociņām	Lullaby my Jamie Softly sleep, my child. Sister rocks you gently, Soft her hands and mild.	Snow white lambs for Jamie, All kinds for your own. Curly, bob-tailed, long-tailed, When a man you're grown.

Add: Bordun (E,B) using words “sleep, softly sleep” followed by one light tap on triangle.



(Triangle)

Sleep, soft - ly Sleep.

Figure 6.

Change of Pace:

What'll We Do With the Baby?

Figure 7.

Strategies for Teaching the Song: Ask Students:

- What is the question in the song? (What'll we do with the baby?)
- How many times is it asked? (3)
- What is the answer to the question? (Wrap it up in calico)
- Where is the baby going to go? (To its Pappy-o)
- What's another name for "pappy-o"? (Daddy)

Accompanying Activity for "What'll We Do With the Baby?"

Child walks around circle with cloth/quilt. On the words "wrap it up," the child puts the cloth around the shoulders of a student in the circle and gently rocks the student back-n-forth. On "send it to its pappy-o," the child who was rocked stands up and becomes the next one to walk around the circle.

Secondary Focus:

- Show children the cover of the book *What Shall We Do With the Boo Hoo Baby* and ask "What do you think this book will be about?"
- Share with children that the animals don't know what to do with the baby because the baby only says "Boo hoo." Have children explore different ways to say "boo hoo."
- Sing the melody of the folk song "Drunken Sailor," but substitute original song lyrics to the text of the book title, "What Shall We Do with the Boo-Hoo baby?"
- While reading the book with the children, encourage them to add the various animal sounds. A strategy that works well is to have the children say lines from the text in "animal language" (e.g., "Put him to bed" said with "quacking," "barking," etc.)
- The last page shows the baby awake. Ask the children, "If the baby doesn't have anyone to play with, what do you think it will do?" As the children chime in "boo-hoo," it allows a smooth transition into singing the song a final time.

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Bio

Shelly Cooper has been an active music educator for 26 years. As a researcher and general music specialist at the University of Arizona, she has presented at numerous local, state, and national music and general education conferences.