

**Developing Brains-
Ideas for Parenting and Education
From the New Brain Science**
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**Music and Poetry for Young Children:
How they can help build healthy brains and mature behavior**

Introduction

A major concern among parents and educators in this current "tight budget" economy is how the arts in education have been sacrificed as a cost-cutting measure. Somehow, the arts have been placed in the "frills" category of subject matter in schools. A commonly held belief exists that the arts in education are "nice" but that they are not a "necessary" component to being well educated. But, what are children missing when the arts are not there?

This article will focus on music and poetry for young children,¹ and will address the following questions:

- How do music and poetry rich environments impact brain development?
- What areas of development are supported through music and poetry?
- Can music reduce stress and promote prosocial behavior?
- What kinds of music, movement, and poetry are appropriate for different age groups?

Though most of the research that has been done has focused on music, some of music's influence on the brain and development can also be achieved by the recitation and memorization of poetry, so it will be included in this discussion.

Music, poetry and brain development²

Numerous studies have been conducted on how the brain processes music as well as on how music education and experiences influence brain development. These studies are revealing that music is processed in all areas of the brain,

¹ See the article in this site on Movement Activities.

² For more detailed information, see the recommended readings listed at the end of this article.

depending on the music experience (listening, singing, playing an instrument). In fact, specialized areas of the brain are dedicated to processing rhythm, harmony, pitch, etc.

Eric Jensen, in Music with the Brain in Mind, details the various neurobiological systems which are influenced by music. These include:

- Cognitive systems
- Emotional systems
- Perceptual-Motor systems
- Stress Response system
- Memory systems

These influences, according to Jensen, may be brief (such as in listening to music) or may be long lasting (such as in long-term keyboard playing). As in all types of learning, the key to longer lasting influences lies in **repetition**. Thus, “one shot” music listening experiences (like taking children to a concert) will have limited impact, unless this is supported by an ongoing program of music education.

In addition, the impact of music training on the brain is greatest when the training begins at an early age. Though we can learn to play an instrument, sing, and/or read music at any age, during the first 10 years of life, the brain is “more sensitive to the active development of music.”³ The older we are when we get music training and education, the more time it will take to achieve proficiency. Thus, it is not surprising that the most accomplished musicians began their training between the ages of 3 and 5 years of age.

What areas of development are supported through music and poetry?

Music education, especially at an early age, “can be translated into performance skills.”⁴ In research done in Australia, music instruction has been found to be correlated with “positive performance in areas such as:

- reading comprehension, spelling, mathematics, and learning ability;
- listening ability;
- primary mental abilities (verbal, perceptual, number, and spatial); and

³ Jensen, Eric. Music with the Brain in Mind. Thousand Oaks, CA: Corwin Press, 2000, 23.

⁴ The National Commission on Music Education. “Growing Up Complete: The Imperative for Music Education,” in MENC: The National Association for Music Education. Music Makes the Difference: Music Brain Development, and Learning. Reston, Virginia: MENC: The National Association for Music Education, 2000, 109.

- motor proficiency.”⁵

Music enhances memory by improving how quickly we can learn something and how long we retain it. Music enhances attention (which is the essential first step in learning and memory) as well as retrieval of information. Music may also make our ability to learn more efficient.

Music education can also impact behavior in children. Research on the use of “rhythmic intervention” is suggesting that the “brain’s auditory system may regulate behavior.”⁶ Rhythm, in particular, “may be an important factor in the regulation of actions, especially in those [children] with impulse dysregulation.” As Jensen notes, “when students play any musical instrument, even drums, they learn to listen.”⁷ Reciting poetry that has a perceivable rhythm can have the same effects on impulse regulation and focused attention.

What about music reduces stress and increases prosocial behavior?

A number of studies have demonstrated that listening to music can alter our moods and reduce stress. Music has been found to reduce the production of the stress hormone, cortisol, and, at the same time, strengthen our immune systems. In a study by Lane (1993), as cited in Jensen, “children exposed to music, singing and instrument playing exhibited increased [production of] antibodies.”⁸ Music, thus, can help students stay healthy and achieve “the optimal learning state of relaxed alertness.”⁹

In several studies, the presence of music played in the background has been found to be correlated with more child-to-child interactions in a preschool classroom. In addition, having background music playing was found to help developmentally delayed children become integrated into the class of their typically-developing peers more successfully.¹⁰

⁵ Ibid.

⁶ Jensen, op. cit., 56.

⁷ Ibid., 57.

⁸ Ibid, 64.

⁹ Ibid., 66.

¹⁰ Ibid., 50.

The type of music listened to can impact "how" we perceive others. Jensen reports the following:

"In one study of healthy adults, subject's opinions about a neutral image changed after hearing a piece of music. Two music selections were played- one sad and one upbeat. After hearing the sad music, subjects rated the neutral images as more depressive. And after hearing the upbeat music, they rated the neutral images as happy. This demonstrates that the type of music one listens to, in fact, influences interpretation."¹¹

Thus, upbeat background music in the early childhood classroom may support children's openness to other children who may be different from themselves by providing a "positive" filter for interpreting their interactions. Upbeat music makes us feel good and when we feel good, we feel good about ourselves, others, and our situations.

What kinds of music, movement, and poetry are appropriate for different age groups?

Eric Jensen gives some practical suggestions for what types of music experiences are appropriate for each age group. Here is a summary of what he recommends:

Prenatal Period - Be careful about prenatal exposure to music that is loud (over 50 decibels). Loud sounds cause the fetus to startle. The recommendation is to stick with singing to the fetus, playing soft instrumentals and lullabies.

Birth to Two Years - Newborns can be soothed with lullabies (this is not news to parents!). This is especially important for babies who are born early or at a low weight. Low birth weight babies have been found in one study to be released from the hospital earlier and to normalize their weight earlier when they were exposed to lullabies for just one hour a day.

In the first two years of life, children like to listen to simple songs and lullabies (recorded or sung). By one year of age, babies can "incorporate

¹¹ Ibid., 49.

body movement into the music."¹² This is a time to model keeping the rhythm through clapping, tapping, and nodding the head to the beat. You can also keep the beat through use of bells, xylophone, or other instruments. Give the baby a ring of bells to play with you! The baby's built-in mirror neuron system will allow them to begin to copy your movements.

Two to Five Years - This time period is one of greatest plasticity in the brain for the development of musical abilities. At this age we can introduce children to the use of simple instruments (whistles, harmonicas, drums). Encourage the children to play the instruments with you, so you can model their use and the beat.

By ages two or three, we can expand the types of music that children listen to: folk songs, traditional music of various cultures, nursery rhymes, and some "easy-to-hear" pop music. Music lessons/instruction can begin as early as three years of age. The child's playing (especially on, for example, a violin) may be out of tune, but this is considered normal.

According to Jensen (and early childhood tradition), "by age four, when the brain's left hemisphere has had time to develop, it's smart to include a lot of rhythm games," songs, and poetry. He reminds us to "keep the music-playing atmosphere light, social and fun. Kids love silly, wacky songs at this stage because their language skills have developed enough to decipher most of the words, and they begin to appreciate alliteration and rhyme."¹³ The following is an example of a song that I found was a top hit among the 3-5 set!

Prunie

No matter how young a prune may be, he's always getting wrinkled.
A baby prune is like his dad, but he's not wrinkled half so bad.

Now, we have wrinkles on our face,
But, prunie has them EVERYplace!

¹² Ibid., 25.

¹³ Ibid. 26.

Little seed inside the prune,
Is it night, or is it noon?
What's in there? Whatcha' doin'--
Little seed inside the prune?

Five to Ten Years - This is a time when children are capable of not only learning to play an instrument, but are also capable of composing music. It is a good time to start formal music lessons. What we know is that every child can play an instrument and singing is still of a great benefit. Reading highly rhythmic poetry at this age is also still helpful.

A Few Last Words on Incorporating Music into the ECE Classroom

Here are a few suggestions from myself and from Eric Jensen:

- Before playing recorded music, LISTEN to it! Make sure the words (if there are any) are appropriate and not offensive (racist, sexist, etc.).
- Be a model of enjoying music. Teachers need to demonstrate their enthusiasm for listening, singing, moving to, and playing music. Children learn what they see as well as what they do.
- "Music is great; but silence is golden. If used to extremes, saturation can occur and music will lose its effect. Engage music selectively and purposefully. A general rule is to incorporate music no more than 10 to 30 percent of the total learning time, with two exceptions: (1) When music instruction is the primary focus of the class; or (2) When incorporating environmental sounds, like waterfalls, rain forests, or waves breaking on the beach."¹⁴

Recommended Reading on Music and the Brain

Jensen, Eric. Music with the Brain in Mind. Thousand Oaks, California: Corwin Press, 2000.

MENC: The National Association for Music Education. Music Makes the Difference: Music, Brain Development, and Learning. Reston, Virginia:

MENC: The National Association for Music Education, 2000.

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2008

¹⁴ Ibid., 94.