The Benefits of Music Education for the Brain: Cognitive Development

Adults who receive formal music instruction as children have more robust brainstem responses to sound than peers who never participate in music lessons and that the magnitude of the response correlates with how recently training ceased. These results suggest that neural changes accompanying musical training during childhood are retained in adulthood.

— Skoe, E. & Kraus, N. (2012). A Little Goes a Long Way: How the Adult Brain Is Shaped by Musical Training in Childhood, Journal of Neuroscience, 32 (34) 11510. DOI: 10.1523/JNEUROSCI.1949-12.2012

Students in high-quality school music education programs score higher on standardized tests compared to students in schools with deficient music education programs, regardless of the socioeconomic level of community. Playing a musical instrument significantly enhances the brainstem's sensitivity to speech sounds. This relates to encoding skills involved with music and language. Experience with music at a young age can "fine-tune" the brains auditory system.

— Nature Neuroscience, April 2007

Results From The Elementary School Study prove that:

• *Students in top-quality music programs scored 22% better in English and 20% better in mathematics than students in deficient music programs.*

• *These academic differences were fairly consistent across geographic regions.*

• *Students at the four elementary schools with high-quality music programs scored better than students participating in programs considered to be of lower quality.*

Results From The Middle Schools Study prove that:

• *Students in top-quality instrumental programs scored 19% higher in English than students in schools without a music program, and 32% higher in English than students in a deficient choral program.*

• *Students in top-quality instrumental programs scored 17% higher in mathematics than children in schools without a music program, and 33% higher in mathematics than students in a deficient choral program.*

• *Students at schools with excellent music programs had higher English test scores across the country than students in schools with low-quality music programs; this was also true when considering mathematics.*

• Students in all regions with lower-quality instrumental programs scored higher in English and mathematics than students who had no music at all.

— Journal for Research in Music Education, June 2007; Dr. Christopher Johnson, Jenny Memmott

Young children who take music lessons show different brain development and improved memory over the course of a year, compared to children who do not receive musical training. Musically trained children performed better in a memory test that is correlated with general intelligence skills such as literacy, verbal memory, visiospatial processing, mathematics, and IQ.

— Dr. Laurel Trainor, Prof. of Psychology, Neuroscience, and Behavior at McMaster University, 2006 Stanford University research has found for the first time that musical training improves