



Theresa Perry

## **Giving Your Child the Edge**

### **Build A Better Brain....a Gift that keeps on Giving!**

“A baby’s brain is a work in progress, trillions of neurons waiting to be wired into a mind. The experiences of childhood, pioneering research shows, help form the brains’ circuits – for music and math, language and emotion.” Newsweek, Inc. 1996 science feature “Your Child’s Brain”. (<http://www.newsweek.com/id/101523>)

In these days of high competition and results-orientation, parents increasingly understand that future success for their children depends more and more on a healthy lifestyle and an enriched educational opportunity. What is missing is the knowledge that these same parents also can literally GIVE THEIR CHILD A HIGHER IQ AND A BETTER FUNCTIONING BRAIN. What better preparation for the new challenges which lie ahead of us all.

From the University of California (Irvine) to the University of Wisconsin to Cornell University to the University of Toronto (Mississauga) to the Royal Institute, London, England to University of Munster in Germany, researchers continue to test and confirm the relationship of music training and increases in IQ.

In an excellent article entitled “Sorry, Kids, Piano Lessons Make You Smarter”, Forbes.com™ ([http://www.forbes.com/lifestyle/health/2007/07/15/cx\\_0715health.html](http://www.forbes.com/lifestyle/health/2007/07/15/cx_0715health.html)) explores a distinct causal link between piano and voice lessons and increases in IQ. Focusing on studies conducted at the University of Toronto by Glenn Schellenberg, Forbes reveals that the participants were tested before and after attending first grade with consideration being given to the normal effect of attending one year of school. The change in IQ for students receiving music (piano or voice) lessons could be considered small (the difference between 4.3 and 7 points) -- however, looked at from a percentage of improvement, those experiencing music lessons scored approximately 39% higher in IQ measurement. And that after only the first grade.

Psychologist Dr. Frances Rauscher (University of Wisconsin, Oshkosh) has completed several studies which confirm that a link exists between music and intelligence. Early pioneering work by Drs. Rauscher and Gordon Shaw show that early experiences determine which brain cells will connect with other brain cells and which ones will die away. The researchers emphasized the relationship between early music training and the development of the neural circuitry that governs spatial intelligence,

Building upon the pioneering work of Dr. Rauscher a recent study at the University of Munster, Germany, revealed that practicing the piano in early childhood expands the mind, literally altering the anatomy of the brain. ©2007 American Music Conference "Music and the Brain"

That "Piano instruction is thought to enhance the brain's hardwiring for spatial-temporal reasoning " (the ability to visualize and transform objects in space and time) has been examined and confirmed at the University of California, Irvine. There, researchers published a definitive study in the journal Neurological Research linking musical training to the development of higher brain functions.

UCI researchers worked with public school elementary grade children in Orange County and Los Angeles. Children given only four months of piano keyboard training as well as time playing with newly designed computer software scored 27% higher on proportional math and fractions tests. (reference "Neurological Research" March 1999)

Gordon Shaw, UCI Physics professor emeritus said, "Children who took piano lessons and played with the math software performed better on tests of fractions and proportional math than children who took English language instruction on the computer and played with the math software, and better than those who had neither piano lessons nor experience with the math software."

"Puzzles in the STAR game allow children to apply the type of mental acuity that appears to be heightened by piano practice." Shaw added. "The findings are significant because a grasp of proportional math and fractions is a prerequisite to higher level math and children who do not master these areas of math cannot understand more advanced math critical in the high tech fields."

"Students who used the software and played the piano also demonstrated a heightened ability to think ahead," Shaw noted. These findings offer not only new insight into the theory of mental development, but also a potentially powerful teaching tool, capable of stimulating second-grade children to master critical sixth-grade reasoning concepts.

The piano teaching and software helped children regardless of income level, boosting achievement of students in low socioeconomic settings. Shaw added, "Music excites the inherent brain patterns and enhances their use in complex reasoning tasks" as shown in the children's ability to work mazes, draw geometric figures and copy color patterns.

Germany's University of Konstanz researchers have also reported that exposure to music rewires neural circuits. Using magnetic resonance imaging (MRI) technology researchers were able to link the effect of music practice to the amount of cortex developed. Also, like other circuits formed early in life, the ones for music endure.

As perhaps a demonstration of the long-lasting effect of early music training, it has been observed that high school music students score higher on SAT's in both verbal and math than their peers. In 2001, SAT takers with coursework/experience in music performance scored 57 points higher on the verbal portion of the test and 41 points higher on the math portion than students with no coursework/experience in the arts. (source: Profile of SAT and Achievement Test Takers, the College Board, compiled by Music Educators National Conference, 2001).

The American Music Conference notes that the world's top academic countries place a high value on Music Education. Hungary, the Netherlands and Japan stand atop worldwide science achievement and have strong commitment to music education. All three countries have required music training at the elementary and middle school levels, both instrumental and vocal, for several decades. The centrality of music education to learning in the top-ranked countries seems to contradict the United States' focus on math, science, vocabulary and technology. Source: 1988 International Association for the Evaluation of Educational Achievement (IAEEA) Test

As a former school music teacher it has been my privilege to see, first hand, the effects, in areas of academics and personal development, on students participating in enriched music programs and, most especially, piano instruction. Music training has a real and quantifiable benefit to students.....and our present culture has all but erased its significance!

Parents in the US are not being given the information they need to make the critical decision to provide early piano instruction to their children. If parents only knew the life-long value to their children I imagine most every child in our country would have had some exposure to formal music training.

It is time to bring this awareness front and center once again. If one looks long-term at the future of our country, it is the intelligence, competency and thoughtfulness of our children which will ensure the continuity of our Republic. Calling piano lessons a national security issue goes a bit far.....but if we can re-introduce a proven methodology which enables our children to develop higher cognitive and analytical brain functions, one which gives them a distinct advantage in life, would we not do it?? Tongue-in-cheek....it seems a no-brainer!

It is not a particular brand/type of piano that this information supports – what is important is that a child in your life has experience with ANY piano: upright, grand, used, new, borrowed. Research abounds which can further document the importance of this experience. You owe it to that young person to check it out for yourself and determine if this educational opportunity is right for your child.