Benefits of Music Education to Math, Reading, Language and Spatial Intelligence

1. Early musical training helps develop areas of the brain that are involved in language and reasoning. It is thought that brain development continues for many years after birth. Recent studies have clearly indicated that musical training physically develops the part of the left side of the brain known to be involved with processing language and can actually fire the brain's circuits in specific ways. Linking familiar songs to new information can also help imprint information on young minds.

*Students who participated in Arts programs in selected elementary and middle schools in New York City showed increases in self-esteem and thinking skills. National Arts Education Research Center, New York University, 1990.

*Students in two Rhode Island elementary schools who were given enriched, sequential, skill-building music programs showed marked improvement in reading and math skills. Students in the enriched programs who had started out behind the control group caught up to statistical equality in reading, and pulled ahead in math. Gardiner, Fox, Jeffrey and Knowles, as reported in Nature, May 23, 1996.

2. There is also a casual link between music and spatial intelligence (the ability to perceive the world accurately and to form mental pictures of things). This kind of intelligence, which allows one to visualize various elements that should go together, is critical to the sort of thinking necessary for everything from solving advance mathematics problems to being able to pack a book-bag with everything that will be needed for the day.

*A research team exploring the link between music and intelligence reported that music training is far superior to computer instruction in dramatically enhancing children's abstract reasoning skills, the skills necessary for learning math and science. Shaw, Rauscher, Levine, Wright, Dennis & Newcomb, “Music training causes long-term enhancement of preschool children's spatial-temporal reasoning.” Neurological Research, Vol 19, February 1997.

*A study of 237 second grade children used piano keyboard training and newly designed math software to demonstrate improvement in math skills. The group scored 27% higher on proportional math and fractions tests than children that used only the math software. Amy Graziano, Matthew Peterson, and Gordon Shaw, "Enhanced learning of proportional math through music training and spatial-temporal training." Neurological Research 21 March 1999.


3. Students of the arts learn to think creatively and to solve problems by imaging various solutions, rejecting outdated rules and assumptions. Questions about the arts do not have only one right answer.

*A University of California (Irvine) study showed that after eight months of keyboard lessons, preschoolers showed a 46% boost in their spatial reasoning IQ. Rauscher, Shaw, Levine, Kay & Wright, “Music and Spatial Task Performance: A Causal Relationship.” University of California, Irvine, 1994.
Benefits of Music Education to Math, Reading, Language and Spatial Intelligence

*A McGill University study found that pattern recognition and mental representation scores improved significantly for students given piano instruction over a three-year period. They also found that self-esteem and musical skills measures improved for the students given piano instruction. Costa-Giomi, E. (1998, April). The McGill Piano Project: Effects of three years of piano instruction on children's cognitive abilities, academic achievement, and self-esteem. Paper presented at the meeting of the Music Educators National Conference (MENC), Phoenix, AZ.

4. Recent studies show that students who study the arts are more successful on standardized tests such as the SAT. They also achieve higher grades in school.

*In 2001, students participating in music education scored higher on the SATs than students with no art participation. Scores for students in music performance classes were 57 points higher (Verbal) and 41 points higher (Math). Scores for students in music appreciation classes were 63 points higher (Verbal) and 44 points higher (Math). College-Bound Seniors National Report: Profile of SAT Program Test Takers. Princeton, NJ. The College Entrance Examination Board, 2001.

Other Benefits of Music Education

1. A study of the arts provides children with an internal glimpse of other cultures and teaches them to be empathetic toward the people of these cultures. This development of compassion and empathy, as opposed to development of greed and a ‘me first’ attitude, provides a bridge across cultural chasms that leads to respect of other races at an early age.

2. Students of music learn craftsmanship as they study how details are put together painstakingly and what constitutes good, as opposed to mediocre, work. These standards, when applied to a students own work, demand a new level of excellence and require students to stretch their inner resources.

3. In music, a mistake is a mistake, the instrument is in tune or not, the notes are well played or not, the entrance is made well or not. It is only by much hard work that a successful performance is possible. Through music study, students learn the value of sustained effort to achieve excellence and the concrete rewards of hard work.

4. Music study enhances teamwork skills and discipline. In order for an orchestra to sound good, all players must work together harmoniously toward a single goal, the performance, and must commit to learning music, attending rehearsals, and practicing.

5. Music study develops skills necessary in the workplace. It focuses on “doing” as opposed to “observing”, and teaches students how to perform, literally, anywhere in the world. Employers are looking for multi-dimensional workers with the sort of flexible and supple intellects that music education helps to create as described above. In the music classroom, students can also learn to better communicate and cooperate with one another.