

Music and Academic Achievement

Grades and Test Scores

Data from the National Education Longitudinal Study of 1988 indicated that music participants had a higher percentage of students who received As, As/Bs, and Bs than non-participants. Also, music participants received more academic honors and awards (NELS:88, second follow-up, 1992).

An American Psychological Society study found that the children who received music lessons (keyboarding or voice) experienced greater increases in their full scale intelligence quotient than those who did not receive music lessons (E. Glenn Schellenberg. "Music lessons enhance IQ." *Psychological Science*. www.psychologicalscience.org/pdf/ps/musiciq.pdf).

A ten-year study by Dr. James Catterall, tracking more than 25,000 students, shows that regardless of socioeconomic background those students who are involved in music score higher not only on standardized tests, such as the SAT, but also on reading proficiency exams [Catterall, James (1997) UCLA].

A Rhode Island research project found that music training helps under-achievers. They studied eight public school first grade classes. Half of the classes were labeled "test arts" groups and received ongoing music and visual arts lessons. In kindergarten, this group was behind scholastically. However, after seven months when the groups received standardized tests, the "test arts" group tested the same in reading as the other group and actually surpassed the other group in math by 22 percent. During the second year of the project, the "test arts" students widened this margin even further. Classroom teachers also noted improvement in attitude and behavior [(May 23, 1996). *Nature*].

Math

An analysis of the National Education Longitudinal Survey (NELS:88) conducted by the U.S. Department of Education found that students who reported high levels of involvement with instrument music during the middle and high school years showed "significantly higher levels of mathematics proficiency by grade 12" [Catterall, James S., Richard Chapleau, and John Iwanaga. (1999). *Involvement in the Arts and Human Development General Involvement and Intensive Involvement in Music and Theater Arts*. Los Angeles, CA: *The Imagination Project at UCLA Graduate School of Education and Information Studies*].

A study by Rauscher and LeMieux examined separately the effect of keyboard, singing, and rhythm instruction on the spatial skills of 123 children. All three groups scored higher on spatial tasks following music instruction than the control group (which did not receive music instruction). The rhythm group scored the highest on sequencing and arithmetic tasks. This same study also found that children who received two years of individual keyboard instruction scored higher on a standardized arithmetic test than children in control groups. The control groups included a group who received computer

instruction [(2003). *Piano, rhythm, and singing instruction improve different aspects of spatial-temporal reasoning in Head Start children*. Presented at the annual meeting of the Cognitive Neuroscience Society, New York].

A 1999 study found that second and third grade students who were taught fractions using music-based lessons scored a full 100 percent higher on fractions tests than those who learned in the conventional manner. The students learned fractions by learning basic music rhythm notation for eighth, quarter, half, and whole notes. [(March 15, 1999). *Neurological Research*].

Language Arts

“A meta-analysis of a set of 24 correlational studies, some involving sample sizes of over 500,000 high school students, found a strong and reliable association between music instruction and reading test scores (Butzlaff, 2000). A more recent study found that ninety 6 – to 15-year old boys with music training had significantly better verbal memory than children without such training (Ho, Cheung, & Chan, 2003). The longer the training, the better the verbal memory appears to be. These studies provide some support for a correlation between music instruction and verbal abilities” [Rauscher, F.H. (September 2003). *Can Music Instruction Affect Children’s Cognitive Development?* ERIC DIGEST. EDO-PS-03-12].

Winston argues that learning to read music enhances the student's ability to perform the skills necessary for reading, listening, anticipating, forecasting, memory training, recall skills, concentration techniques, and speed reading [Winston, E.W. (1982, December). 3 R's and an M, *Music Educators Journal*, p. 40].

A study by Bygrave suggests that music may be an effective learning medium for aspects of language development, especially for students with reading problems. In the study, four groups of children (6 to 9 years old), who were experiencing reading difficulties, participated in a program involving listening to music. The results showed improvements in learning new words [Bygrave, P.L. (1995-1996). *Development of receptive vocabulary skills through exposure to music. Bulletin of the Council for Research in Music Education* no. 127, Winter, pg. 28-34].

A Scottish study found that elementary students who received musical training for six months scored higher on reading tests than students who received an equal amount of discussion skills training [Douglas, S., and Willatts, P. (1994). *Journal of Research in Reading*].