

Benefits of Music Study in Childhood

- 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 and Newcomb, "Music training causes long-term enhancement of preschool children's spatial-temporal reasoning," *Neurological Research*, Vol. 19, February 1997.

- A 2004 Stanford University study showed that mastering a musical instrument improves the way the human brain processes parts of spoken language. In two studies, researchers demonstrated that people with musical experience found it easier than non-musicians to detect small differences in word syllables. They also discovered that musical training helps the brain work more efficiently in distinguishing split-second differences between rapidly changing sounds that are essential to processing language.

Prof. John Gabrieli, former Stanford psychology professor, now associate director of MIT's Athinoula A. Martinos Center for Biomedical Imaging. (Nov. 2005)

- "Music was frequently described as a force for building one's character, and many students expressed their belief that music was capable of directing them in shaping their broader sense of self, who they were becoming, and how they might succeed in the world. The respondents highlighted confidence, responsibility, compassion, pride, patience, and respect as aspects of their character they feel they owe, at least in part, to music." Subjects in this study conceded that the concentration required for learning music and the process of memorizing music pieces had honed those skills in other areas of their schoolwork.

Patricial Shehan Campbell, Claire Connell, and Amy Beegle (2007), "Adolescents' Expressed Meanings of Music in and out of School," *Journal of Research in Music Education*, 55(3), p. 229.

- Enlisting the National Educational Longitudinal Survey (NELS:88) (a panel study that followed more than 25,000 students in American secondary schools for 10 years), these researchers found: Students who report consistent high levels of involvement in instrumental music over the middle and high school years show significantly higher levels of mathematics proficiency by grade 12. This observation holds both generally and for low socio-economic status (SES) students as a subgroup. In addition, absolute differences in measured mathematics proficiency between students consistently involved vs. not involved in instrumental music grow significantly over time.

James S. Catterall, Richard Chapleau, and John Iwanga (1999), "Involvement in the Arts and Human Development: General Involvement and Intensive Involvement in Music and Theater Arts," *Champions of Change: The Impact of the Arts on Learning*, Arts Education Partnership

- The arts provide one alternative for states looking to build the workforce of tomorrow - a choice growing in popularity and esteem. The arts can provide effective learning opportunities to the general student population, yielding increased academic performance, reduced absenteeism, and better skill building. An even more compelling advantage is the striking

success of arts-based educational programs among disadvantaged populations, especially at-risk and incarcerated youth. For at-risk youth, that segment of society most likely to suffer from limited lifetime productivity, the arts contribute to lower recidivism rates; increased self-esteem; the acquisition of job skills; and the development of much needed creative thinking, problem solving and communications skills. Involvement in the arts is one avenue by which at-risk youth can acquire the various competencies necessary to become economically self-sufficient over the long term, rather than becoming a financial strain on their states and communities.

The Impact of Arts Education on Workforce Preparation, May 2002, The National Governors Association

- “...Our data on the relationship between arts training and cognitive development revealed a correlation between the amount of music training and the amount of improvement in reading fluency in children.... We discovered a correlation between brain structure--the diffusion properties of a part of the corpus callosum--and reading ability as well as phonological awareness, an auditory skill that is closely related to reading ability.”

Brian Wandell, Robert F. Dougherty, Michal Ben-Shachar, Gayle K. Deutsch, and Jessica Tsang, Stanford University, in *Learning, Arts, and the Brain* (Dana Press, 2008)

- Longitudinal data of 25,000 students demonstrate that involvement in the arts is linked to higher academic performance, increased standardized test scores, more community service and lower dropout rates. These cognitive and developmental benefits are reaped by students regardless of their socioeconomic status.

Dr. James S. Catterall, Graduate School of Education and Information Studies, UCLA

Michigan State University Community Music School

841-B Timberlane Street • East Lansing, MI 48823 • Phone: 517-355-7661

3408 Woodward Ave. • Detroit, MI 48201 • Phone: 313-578-9716

www.cms.msu.edu

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