

**Educators' Notebook**  
Reviews of Research of Interest to Educators

**The Arts and Academic Achievement: A Review of Research**

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This Notebook reviews research on the relationship between the study of the arts and academic outcomes in other areas, finding evidence of positive links in a number of areas.

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## The Arts and Academic Achievement

Francine Morin

Across cultures and historical periods, the arts enrich the human condition by enabling us to respond to ideas and express feelings through rhythms, textures, lines, movements, colours, or images. They offer important ways of knowing, and allow us to make and share meaning from multiple perspectives. Evidence is growing among educators that the arts can also help boost academic achievement. This article focuses on three reviews of research evidence on this issue.

*Champions of Change: The Impact of the Arts on Learning* (Fiske, 1999) compiles the results of 7 major studies of learning and achievement when the arts are integrated into the school curriculum and students' after-school experiences. These studies do not control, however, for other factors that might be causing the results.

One key finding was that students with high levels of arts participation outperformed "arts-poor" students in achievement in other academic subjects, particularly for students from low-income backgrounds. Students involved in the arts were also more motivated to learn and exhibited more imaginative, flexible, and critical thinking skills. Significant improvement in reading and mathematics was noted in "high-poverty" schools where the Chicago Arts Partnerships in Education developed arts-integrated curricula compared to arts-poor schools in the same neighbourhood.

Disadvantaged youth in after-school arts programs achieve more in both school and their personal lives than peers in the same socioeconomic cohort, even more than those involved in sports and other community programs. High quality arts education programs and a school climate supportive of active participatory learning are important factors.

The Reviewing Education and the Arts Project (REAP) (Winner & Hetland, 2000) was a meta-analysis of 188 studies conducted between 1950-1999 on links between the arts and other skills. REAP researchers identified three areas where reliable causal links were found: listening to music and spatial-temporal reasoning; learning to play music and spatial-temporal reasoning; classroom drama and language skills. Spatial-temporal reasoning refers to skills such as oral language understanding, understanding of structures and structural relations, object relations, computer programming, and planning activities. In the first of these areas the links were weaker and temporary; in the other two more robust.

An analysis of 19 studies showed a relationship between learning to make music and spatial-temporal reasoning, especially when musical standard notation was learned as well. This finding holds for both general and at-risk student populations, costs nothing if school music programs are already in place, and influences many students (69% of 3 to 12 year olds). However, for students to benefit academically, subjects like mathematics or social studies would have to be taught so that students applied the spatial abilities developed in music programs.

A link was found between classroom drama and a variety of language areas after examining 80 related research reports. Most relationships involved oral understanding of stories, reading readiness, reading achievement, oral language, and writing. Students who dramatized texts were compared to students who read the same texts, but did not enact them; drama helped students' verbal skills with the texts enacted, as well as with new, non-dramatized texts. This finding is important because language

skills are highly valued, employing drama in the classroom is easy and inexpensive to accomplish, and many students are positively influenced by drama-based pedagogical techniques.

The REAP team also found several areas in which reliable links could *not* be established, including studying the arts and academic achievement as measured by test scores and several measures of creativity. Minimal links between music training and math skills, or between music, visual art, dance and reading improvement were noted.

The Arts Education Partnership (AEP), a coalition of more than 140 arts, education, business, philanthropic, and government organizations, published a compendium of carefully selected research studies based on strict quality criteria. *Critical Links: Learning in the Arts and Student Academic and Social Development* (Deasy, 2002) presents summaries and evaluations of studies in each art form.

The compendium provides evidence that “research has identified a wide variety of academic and social developments to be valid results of learning in or engagement with the arts” (Deasy, 2002, p. 154). It concludes with 65 “core relationships” between arts learning and academic and social outcomes, all of which are said to “show evidence of transfer in the sense that learning activities in the arts have various effects beyond the initial conditions of learning” (p. 154). While some contributors strongly believe that the causal links are well established, others argue that some links do not adequately stand up to the demands of meta-analysis.

A common thread across 7 studies is that dance is an effective means of developing three aspects of creative thinking: fluency, originality, and abstractness. Other studies showed that using dance in a reading program for young children improves three areas of reading

skills: consonant sounds, vowel sounds, and phoneme segmentation. Teaching with dance was also linked to improvements in nonverbal reasoning and expressive skills. 19 studies reviewed the effect of drama on learning, showing consistent positive associations between dramatic enactment and several reading skills. For instance, children who dramatize stories, rather than listening to them, are better able to retell and recall stories. In the 4 visual arts studies reviewed, relationships were found between reading improvement and an integrated form of art instruction. Visualization training was found to improve reasoning about scientific images, and drawing supported students’ writing in social studies.

The 17 multiple arts programs analysed offered numerous links to improved academic performance such as reading, verbal, and math skills, as well as to creative thinking. Based on 15 music studies, there were positive significant associations found between music learning and a number of cognitive capacities. Music listening was found to improve spatial and spatial-temporal reasoning, as well as writing skills. Learning how to play the piano went hand-in-hand with mathematical proficiency, and piano and voice with spatial reasoning. High SAT scores and reading skills were linked with instrumental learning. When coupled with language learning, music instruction augmented English skills for ESL learners.

A growing body of research on the arts and academic achievement has produced interesting results though with varied quality. The evidence indicates that well-crafted, arts-rich learning experiences are linked to positive academic effects across a range of areas. It seems clear that curriculum time for the arts is not at the expense of achievement in other areas. The studies point to the continued importance of the arts in a balanced education.

## SELECTED REFERENCES

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This is a brief review of a complex body of educational research. Since no brief review can capture a full body of research, readers are urged to consult the references, which have been cited. The views expressed in this notebook are those of the author. The sponsors welcome your comments on this issue and your suggestions for future issues of Educators' Notebook.