



## APPENDIX A

### **An Inventory of Arts-Related Academic and Social Outcomes Found in Critical Links Indexed by the Academic and Social Arena Where They Have Impact, and by Study**

This index on the following page is based on a chart from James Catterall’s essay, “The Arts and the Transfer of Learning,” in the research compendium, *Critical Links: Learning in the Arts and Student Academic and Social Development*. Catterall’s original chart provides a preliminary inventory of the academic and social outcomes that are shown to be, by the studies collected in *Critical Links*, related to learning in the arts; this index groups those outcomes by the academic or social arena in which they have impact (e.g., reading and language development, mathematics) and/or by any special population of students for which particular outcomes were found.

Additionally, next to each outcome indexed in this chart, are listed examples of studies in *Critical Links* that find a relationship between arts learning and that outcome. The studies are indicated by the name of the study author (printed in parenthesis after the outcome listed). Following the index is a listing of the study titles and authors, designed to facilitate locating the studies in *Critical Links*.

This chart does not claim to be exhaustive, but rather is intended to be a useful tool in finding material that is targeted to specific reader needs or interests. The specific studies and the essays in *Critical Links* should be referenced for more detailed information, particularly on the strength of the relationship of a particular arts learning experience to an outcome/s (the strength of these relationships varies by study). »

## READING AND LANGUAGE DEVELOPMENT

---

### BASIC READING SKILLS

- Reading readiness (Podlozny, Burger & Winner)
- Basic reading skills—consonant sounds, vowel sounds, segmentation (Rose)

### LITERACY AND LANGUAGE DEVELOPMENT

- Story comprehension (DuPont, Pellegrini & Galda, Podlozny, Williams & Silvern, Wolf, Page, Parks)
- Character identification (Goodman, Page)
- Character motivation (Page)
- Sophisticated reading skills/interpretation of text (Parks)
- Skill with subsequently read, unrelated texts (DuPont, Podlozny)
- Reading, verbal skills (Page, Wilhelm)
- Reading achievement (Butzlaff, Podlozny)

- SAT verbal scores (Vaughn & Winner)
- Language instruction/learning (Lowe—French language)
- Oral language development (de la Cruz, Kassab, Podlozny; Pellegrini, 1984b)
- Explicit language development (Pellegrini, 1984b)

### WRITING

- Writing quality (Moore & Caldwell, Kariuki)
- Writing achievement (Podlozny)
- Writing fluency (Pellegrini, 1980)
- Seeking resources to improve writing (Horn)
- Persuasive writing (Wagner)

## MATHEMATICS

---

- Math achievement/skills (Rauscher, Vaughn; Catterall, 1998, April 1999, and July 1999)
- Spatial reasoning (Costa-Giomi)
- Spatial temporal reasoning (Rauscher, Hetland a&b, Bilhartz, Rauscher & Zupan)
- Nonverbal reasoning (Kienenan)
- SAT math scores (Vaughn & Winner, Vaughn)

## SCIENCE

---

- Reasoning about scientific images (Tishman)

## GENERAL ACADEMIC SKILLS

---

- Paying attention
- Concentrated thought
- Focused perception (de la Cruz, Burton & Horowitz, Kariuki)
- Higher-order thinking skills (Kim; Pellegrini, 1984b)
- Problem-solving dispositions/strategies (Palmer Wolf)
- Creative thinking: i.e., fluency, originality, abstractness of thought (Mentzer & Boswell, Minton, Kim, Burton & Horowitz, Moga)
- Elaboration and flexibility (Minton)
- Expressive skills (Rose, Mentzer & Boswell, Schaffner, Burton & Horowitz)
- Imaginativeness (Fink)
- Performance on standardized tests (Catterall, 1998 & April 1999)
- Non-verbal communication skills (Parks & Rose)
- Persistence (Ross)
- Perseverance/Persistence
- Risk taking (Burton & Horowitz)
- Leadership (Horn)

## SELF-MOTIVATION

---

- Engagement/attendance (Page, Palmer Wolf, Horn, Seidel, Center for Music Research, Corbett et. al., Wilhelm)
- Educational aspirations (Heath)
- Ownership of learning (Burton & Horowitz)
- Self-concept (Rose, Mentzer & Boswell, Horn, Kassab, Wolf, Burton & Horowitz, Seidel)
- Self-confidence (Ross, Horn)
- Self-efficacy (Kennedy)
- Self-esteem (Kassab)

## GENERAL SOCIAL SKILLS

---

- Social tolerance (Ross)
- Understanding social relations (Fink)
- Ability to explore complex issues and emotions (Seidel)
- Attention to moral dilemmas (Schaffner)
- Increased peer interaction (Schaffner)
- Conflict resolution skills (Pellegrini, 1984a)
- Empathy for others (Catterall—April 1999; Burton & Horowitz, Harland)
- Collaboration skills (Burton & Horowitz, Palmer Wolf, Seidel)
- Positive social behavior (Standley, Horn)
- Community service (Catterall, 1998; Heath)
- Self-control/regulation (de la Cruz, Baum & Owen)
- Courtesy to others (de la Cruz)
- Social Compliance (de la Cruz)
- Social Problem Solving skills (Williams & Silvern)

## SPECIAL POPULATIONS

---

### LOWER SES STUDENTS

- Story understanding—written measure (Podlozny)
- Story recall, conflict-resolution (Pellegrini, 1984a)
- Reading skills (Rose)
- Academic achievement (test scores), student retention, self-concept, community service, student boredom (Catterall, 1998)
- Math achievement, empathy, tolerance (Catterall, April 1999)

### SPECIAL EDUCATION STUDENTS

- Ignoring distractions, courteous behavior, self-control, following directions, and oral expressive language skills (de La Cruz)
- Writing skill, focused perception (Kariuki)
- **(Two boys with learning disabilities):** writing and drawing (Mentzer & Boswell)
- Reading, engagement (Wilhelm)

### YOUNG CHILDREN

- Story comprehension (Page; Pellegrini & Galda, Pellegrini, 1984a)
- Persuasive writing (Wagner)
- Math and reading (Catterall, July 1999)

### AT-RISK STUDENTS

- Self-confidence, self-image, seeking additional resources to support writing, positive social behavior (Horn)
- Self-perception, momentum, accuracy (Wolf)
- Self-efficacy, (Kennedy)
- **(Remedial reading students):** Story comprehension and skill with subsequent unrelated text (DuPont)
- Self-regulation (Baum & Owen)
- Educational aspirations, community service (Heath)
- Engagement (Center for Music Research)

### INCARCERATED YOUTH

- **(Youth in the study were also low-income and had low-English proficiency):** confidence, tolerance, persistence (Ross)

## IMPACTS ON THE WHOLE SCHOOL

---

- Instructional practices in the school (Seidel, Nelson)
- Professional culture of the school (Seaman, Burton & Horowitz, Nelson)
- School climate (Seaman, Burton & Horowitz, Nelson)
- School identity (Nelson)
- Community engagement (Seaman, Nelson)
- Reduced dropout rates (Catterall, 1998)
- Teachers innovation (Burton & Horowitz)
- Increased teacher awareness of student abilities (Burton & Horowitz)

## COMPENDIUM STUDIES BY GRADE-LEVEL OF THE STUDENT POPULATION EXAMINED

---

### OF THE 62 COMPENDIUM STUDIES\*

- 29 examine Elementary students,
- 18 examine Middle school students,
- 14 examine High School students, and
- 11 are Meta-analyses (including various age groups).

\* Please note that when a study examined more than one age group it was counted once for EACH relevant age group. Therefore the total number listed here, 72, is higher than the actual number of studies in the Compendium, 62.