Research-Based Communication

Tool Kit

Section III

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A growing body of evidence suggests that arts learning and arts integration help develop key cognitive skills needed for academic success, as well as promote the social and emotional strengths that lead to academic achievement and positive behaviors and relationships.

- Learning in and through the arts:
- Provides another point of entry to ideas and concepts
- Helps students to see other perspectives and make connections
- Requires complex analysis and judgment
- Contributes to self-awareness and self-esteem
- Provides opportunities for collaboration and builds community within the school
The Arts and Cognitive Skills

- Involvement in the arts fosters the growth of key cognitive skills. According to Elliot Eisner, Lee Jacks Professor of Education and Professor of Art at Stanford University, these skills include the ability to examine qualitative relationships and manage problems with multiple solutions.
- According to the 1993 National Household Educational Survey, participation in culture-related activities was associated with higher levels of cognitive development in at-risk preschoolers.
- An interest in a performing art leads to a high state of motivation that produces the sustained attention necessary to improve performance and the training of attention that leads to improvement in other domains of cognition.
- Learning to dance by effective observation is closely related to learning by physical practice, both in the level of achievement and also the neural substrates that support the organization of complex actions. Effective observational learning may transfer to other cognitive skills.
- Training in acting appears to lead to memory improvement through the learning of general skills for manipulating semantic information.
- Learning to make music strengthens spatial-reasoning abilities. Research shows that a strong causal link exists between learning how to play music and the development of spatial-temporal reasoning skills, which can play an important role in mathematics and science education.

The Arts, Creative Thinking and Academic Learning

- The arts encourage children to think creatively. Creativity measures for students who participated in the SPECTRA+ program in two Ohio school districts were four times higher than those of their peers who did not participate in an arts curriculum.
- The arts are inherently aligned with the attributes of brain-based learning. Research in this area indicates that the brain learns best in rich, complex, and multi-sensory environments and that emotion and social interaction play a vital role in learning.
- Correlations exist between music training and both reading acquisition and sequence learning. One of the central predictors of early literacy, phonological awareness, is correlated with both music training and the development of a specific brain pathway.
The Arts and Social Development

- Participation in the arts helps students improve social skills. Students with lower socio-economic status who had sustained involvement in theatre arts were shown over time to have greater self-confidence, motivation, and empathy than did their non-arts peers, according to a ten-year national study of over 25,000 high school students.

- According to Lauren Stevenson and Richard Deasy's comparative analysis of ten low socioeconomic status arts-integrated schools that have been recognized for high performance, the arts help create an inclusive community where students are more motivated to contribute positively.

- Evidence from a wide range of school- and community-based arts programs suggests that arts experiences can be instrumental in resolving conflicts, deterring problems with attendance and disruptive behavior, and building self-respect, self-efficacy, resilience, empathy, collaborative skills, and other characteristics and capacities that are linked to high student achievement.

Summarizes various studies, including those in Critical Links, that explore connections between learning in music and the development of spatial-temporal reasoning skills. Notes that mathematics and language are composed of symbol systems that possess common characteristics and that both employ spatial-temporal reasoning.


Brought together by the Dana Arts and Cognition Consortium, this three-year study is the result of research by cognitive neuroscientists from seven leading universities across the United States. They grappled with the question of why arts training has been associated with higher academic performance. Of particular interest in these reports are the state-of-the-art brain imaging tools, such as Near Infrared Spectroscopy (fNIRS) and Functional Magnetic Resonance Imaging (fMIR). The consortium reports findings that allow for a deeper understanding of how to define and evaluate the possible causal relationships between arts training and the ability of the brain to learn in other cognitive domains.


Details the findings of the 1993 National Household Education Survey, which analyzed factors that affect the cognitive readiness of four-year-old preschool students. Of the preschoolers in the national sample considered at-risk, those who participated in culture-related activities were associated with higher levels of cognitive development and lower variability in cognitive readiness.

http://www.aep-arts.org/files/forum_reports/June%202004%20Forum%20Reports.doc

Explains that literacy is a complex, multilayered process for making meaning by working with various symbol systems. Each child uses those systems that are preferred or seem most natural. No system works alone; rather, all work together in a kind of inter-textual network. In the upper grades, the opportunities that are afforded to a learner to draw from experiences in one domain and apply them to another domain are critical to deep learning and understanding. Other critical issues in the upper grades include the connection of a learner’s school experiences to personal identity, individual culture, and family.


Establishes that knowledge taught in multiple contexts is likely to support the transfer of learning from one domain to another. Says learning to look for, recognize, and extract underlying themes and ideas can help
students to understand when and under what conditions to apply their knowledge, an aspect of expertise.


Examines brain-based learning. Describes how the brain functions during learning experiences and how this knowledge can influence teaching strategies. The brain has an infinite number of possibilities for making connections and constantly seeks meaning by identifying patterns, according to the authors.


Provides a compendium of research studies exploring the potential for transfer to occur in the context of arts learning. Compelling evidence of opportunities for transfer—the theory that learning in one academic area can assist learning in another area—is found in studies involving the relationship of music to the development of spatial reasoning abilities. Suggests that more research must be done in the areas of visual arts and dance.


http://www.gseis.ucla.edu/faculty/files/catterall/catterall.involvement.pdf

Analyzes the National Educational Longitudinal Survey (NELS:88), a ten-year panel study following more than 25,000 students between the eighth and twelfth grades. Links sustained involvement in theatre arts by low SES youth with improved self-concept and greater motivation, as well as with higher levels of empathy and tolerance for peers. In addition, students consistently involved in instrumental music were shown to have higher levels of mathematics proficiency than their non-music peers, regardless of SES.


Shows that students’ arts participation and SAT scores co-vary, meaning that the more arts classes a student has taken, the greater the likelihood that he or she will achieve high SAT scores.


Reviews research findings on the benefits of arts education and outlines recommended actions for states.

Shows how the arts can help students develop the essential understanding of metaphors, symbols, and analogies and their potential for communication of ideas.


Details the intellectual, developmental, and creative skills identified by Elliot Eisner, Lee Jacks Professor of Education at Stanford University, that are strengthened through arts learning. Among the key cognitive skills revealed in the article, participation in the arts teaches children to examine qualitative relationships, manage problems with multiple solutions, take advantage of unexpected opportunities, and create within the confines of a material.


http://www.pz.harvard.edu/Research/Reap/REAPExecSum.htm

Summarizes the findings of the Reviewing Education and the Arts Project (REAP) by Harvard’s Project Zero. A search for all English language studies between 1950 and 1999 found that learning in the arts leads to academic improvement in some other areas. Cites clear causal links demonstrated between spatial-temporal reasoning and both listening to music and learning to play music.


http://ww3.artsusa.org/services/arts_education/arts_education_012.asp

Presents commentary by Governor Mike Huckabee, who also was Chairman of the Education Commission of the States for 2004-06, and former U.S. Secretary of Education Rod Paige promoting the influence of arts education on the development of critical analysis skills. Introduces “The Arts: A Lifetime of Learning,” a program implemented by the Education Commission of the States. The program uses public awareness, research, analytical tools, and leadership efforts to “increase the arts’ stature in education.”


http://www.jlcbrain.com

Makes a strong case, based on research, that the arts should be a core subject. Eric Jensen, an expert in brain-based teaching and learning, cites research suggesting that arts education helps decrease the number of dropouts, boosts attendance, instills team building skills, enhances creativity, and provides other benefits that influence academic and career success. He describes in detail how the arts aid learning.

Explains the neurodevelopmental research of the author, who has found that students bring unique combinations of strengths and challenges to school. Understanding these differences can help teachers meet students’ needs. Often children may be perplexed by what appears to be their failure to fit a “norm.” Through a process he calls “demystification,” Levine’s approach helps individual children to understand that each has a unique set of strengths, as well as areas where they need additional help.


Details the finding from SPECTRA+ research that, based on data from pre- and post-administrations of the Torrance Test of Creative Thinking, a group of students receiving a systematic instructional program in the arts made greater gains than either of two control groups on several dimensions, including total creativity, fluency, and originality. The author concludes that “there was a strong indication that creative thinking...was facilitated by involvement in the arts.”


Details various national studies in which arts education was shown to strengthen creativity and promote communication and problem-solving skills in students.

In one notable study, creativity measures for students who participated in the SPECTRA+ Program were four times higher than their peers who did not participate in an arts curriculum. In addition, a review of 57 studies indicates that participation in the arts promotes a higher self-concept and improved social skills.


Describes how arts integration improves achievement by producing a “cognitive resonance” between the arts and other subject areas and amplifies this resonance by connecting learning to students’ feelings and experiences.


Makes a strong case for placing arts integration at the center of education renewal.


Examines how participation in the arts impacts student achievement, citing examples from national programs in which arts learning was linked to the development of cognitive and social skills. In one case, learning to play the guitar and perform in front of peers was shown to bolster the confidence and self-esteem of a group of 8- to 19-year-old boys living in residential homes and...
juvenile detention centers. Similarly, a group of juvenile offenders between the ages of 13 and 17 who participated in jazz and hip hop dance classes reported marked increases in confidence levels.


Examines what makes the programs of Shakespeare & Company, a classical professional theatre organization that teaches Shakespeare in K-12 schools, so effective. Four major learning areas are identified from responses submitted by the nearly 800 students who participated in the study: Shakespeare and his language, acting, creative communities, and self as learner. Project Zero’s research indicates that reading and acting Shakespeare’s works promote confidence in interpreting various forms of complex text (including mathematical theorems), as well as a greater awareness of others and a sense of community between peers working toward a common goal.


Reports case studies of ten schools that serve large percentages of at-risk students and use arts-integrated instruction to bring about student gains in various subjects, as well as to create an environment that is conducive to cognitive and social development. Researchers determined that arts-integrated learning experiences offered rich opportunities for developing higher order thinking skills. See Chapter 3: Thinking in the Arts. They also found that performance in the arts heightened students’ self-efficacy and engagement and awakened their desire to make a contribution. See Chapter 2: When Learning Matters.


Summarizes four studies (Champions of Change: The Impact of the Arts on Learning; Critical Links: Learning in the Arts and Student Academic and Social Development; Creativity, Culture, Education and the Workforce; and The National Assessment of Educational Progress 1997 Arts Report Card) in which arts education is shown to foster problem-solving and creative-thinking skills in students, as well as encourage increased self-confidence and empathy.
Samples – The Arts, Cognition, and Social Development

Newsletter Article

Elementary school students in the Lima City Schools understand culture and community more deeply after a month of learning activities that integrated the arts, social studies, and physical education. Mike Huffman, Director of Arts and Magnet Programs, says the centerpiece of their learning was several days spent interacting and performing with the Gullah Kinfolk—musicians and dancers descended from West African slaves who settled on the isolated islands and marshlands of the South Carolina coast.

“Such learning experiences—combining the arts with other ways of knowing to explore important themes that cut across the boundaries of disciplines—represent a powerful form of arts integration,” says Mary Campbell-Zopf, director of the Ohio Arts Council’s Office of Arts Learning.

“Arts integration engages students cognitively, physically, and emotionally,” says Patrícia Stuhr, chair of The Ohio State University’s Art Education Department. Recalling the schools she studied in her work with the national Transforming Education Through the Arts Challenge (TETAC), Stuhr says: “Students were more engaged and remembered everything. Principals said teachers were invigorated. Everything just seemed more alive.”

“Arts integration also diversifies teaching to engage students with a range of backgrounds and learning styles,” says Cindi Menefield, visual and performing arts curriculum manager for the Cincinnati Public Schools. For example, Menefield teaches line dancing while students are learning about mathematical patterns. The combination of learning about patterns and moving in patterns, she says, especially benefits tactile-kinesthetic learners. In fact, the premise behind arts integration is respect for how children learn.

“Integration occurs,” says Ohio State University professor Michael Parsons, “when students make sense for themselves of their varied learning experiences, when they pull these together to make one view of their world and of their place in it. It takes place in their minds or not at all.”

But can arts integration promote general academic success? Evidence is mounting, say Nick Rabkin and Robin Redmond, who edited Putting the Arts in the Picture. They cite five projects in urban school systems that are not only improving test scores but also helping students “become better thinkers, develop higher-order skills, and deepen their inclination to learn.”

From Links & Threads a statewide online newsletter for school leaders and their arts partners, published by the Ohio Arts Council. Letter to the Superintendent

Letter to the Superintendent

DIANE NANCE
209 Winthrop Road, Columbus OH 43214
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January 23, 2006

Dr. Gene Harris
Superintendent
Columbus Public Schools
270 East State Street
Columbus, Ohio 43215

Dear Dr. Harris:

Last week’s announcement that the Board of Education may move ahead by next academic year with the Innovative Task Force recommendation for a later start time for middle and high school students is welcome news. Research on adolescent sleep cycles and the relationship of improved academic performance with a later start to the day should not be ignored. I strongly support this direction.
However, as a parent of a CPS high school student, I am disturbed by the concurrent discussion of instituting a shorter school day and offering high school classes in middle school as a way for students to earn elective credits. In essence, this idea benefits only a small percentage of middle school students who are prepared for, or will be selected to take, high school level classes, and it limits student access to electives since the time allotted for electives will be minimal with a shortened day.

Dr. Harris, you advocate steering CPS toward meeting today’s shifting work force needs by encouraging students to graduate from high school and progress to a college education. A decrease in time allotted for electives – and that generally means the arts and foreign languages – means a deficiency in the skills and preparation necessary to achieve success in college and in the 21st century work force.

Students involved with the arts exhibit greater motivation and achievement. Schools with quality arts programs register increased attendance rates and fewer discipline referrals. The arts can ‘level the playing field’ for students from disadvantaged circumstances. Exposure and participation in the arts contributes to social development and academic advantage, communication skills, and visualization training that leads to reading readiness. What better way to engage our children and prepare them for life? Columbus City Council, Mayor Coleman, the Chamber of Commerce, the Greater Columbus Arts Council, and Experience Columbus support the importance of the creative industries in our city’s development. The nonprofit arts alone generate $265 million in revenue and create nearly 9,000 jobs in greater Columbus. Clearly, support for arts education plays a vital role in this economic trend.

As the attached list of CPS achievements suggests, the CPS Board of Education values arts education. Last September, CPS entered into an unprecedented partnership with GCAC, BalletMet, Opera Columbus, and Jazz Arts Group with funding from the U.S. Department of Education for Professional Development for Arts Educators. At the end of the three-year grant, over 500 unique arts integrated lesson plans will have been designed and taught in CPS classrooms, over 200 CPS teachers and local professional teaching artists will have been trained to align integrated lessons to Ohio content standards for the arts and for English language arts, and data will have been collected on the impact of arts education in the classroom. Narrowing high school students’ access to arts electives could diminish the impact of this work, as well as detract from a distinguished history of rich arts education in our public schools.

The arts can turn a good education into a great education. Hundreds of artists, arts educators, and parents want to support your efforts, and we encourage you to improve arts integration in the Columbus Public Schools curriculum. Give us more reasons to stay in Columbus and send our children to Columbus Public Schools. Please do not consider shortening the school day or decreasing students’ access to electives.

Let’s not allow Columbus to be a place where the arts are cut or devalued. Our community deserves more. We look to you to provide a long-term policy approach to arts integration and to be mindful of the demonstrated effectiveness of arts learning.

Sincerely,
Diane Nance
cc: Terry Boyd
Andrew Ginther
Jeff Cabot
Betty Drummond
Karen Schwarzwalder
Carlton Weddington
Stephanie Hightower, member, GCAC Board of Trustees


Catterall, J. In Critical Links: Learning in the Arts and Student Social and Academic Development, a 2002 study sponsored by grants from the National Endowment for the Arts and the United States Department of Education.

I am employed by the Greater Columbus Arts Council.
Samples – The Arts, Cognition, and Social Development

Columbus Public Schools and the Arts

Over the years, CPS has been a pioneer in arts education and has consistently supported artists and arts curricula:

- Two elementary schools (Duxberry and Fair Avenue), one middle school (AIMS), and a high school (Fort Hayes) provide a continuum of quality arts education for Columbus students.

- In the 2003 inventory of schools, the Greater Columbus Arts Council found that 69% of Franklin County School Districts teach to the national standards, as opposed to 31% of Ohio districts statewide. CPS provided a significant portion of that response.

- Of 132 arts and cultural organizations identified as partners for Franklin County schools, the three most frequently identified sources were The Columbus Museum of Art, the Greater Columbus Arts Council (Artists-in-Schools), and The Columbus Symphony Orchestra.

- CPS is a significant user of GCAC’s Artists-in-Schools program, accounting for approximately 25% of Artists-in-Schools bookings each year, benefiting a cumulative total of 25,000 CPS students annually.

- CPS partners with GCAC in the delivery of arts-based after school activities for elementary and middle school students.

In 2003, 16 Franklin County school districts cooperated with the Greater Columbus Arts Council to inventory levels of arts education in public schools in Franklin County. CPS cooperation was evidenced by nearly 100% participation from schools in the district. GCAC plans to repeat the study at regular intervals to monitor and quantify progress with respect to compliance with national and state standards for arts education, expenditures, space designated for art instruction, arts specialists employed, and use of community arts resources.

School communities which infuse their curricula and orientations to teaching and learning around the arts have experienced broad-reaching outcomes...including positive social behavior, social compliance, collaboration with others, ability to express emotions, courtesy, tolerance, conflict resolution skills, and attention to moral development.

James Catterall, Critical Links: Learning in the Arts and Student Social and Academic Development


94% of Franklin County school districts utilize Ohio’s Model Competency-Based arts education program in comparison with 88% statewide.
**Testimony to Legislators**

**Testimony of the Ohio Arts Council to the Ohio Senate, Tuesday, November 28, 2006.**

Thank you for this opportunity to speak to you about Substitute Senate Bill 311 and the importance of having a fine arts credit as part of Ohio’s graduation requirements.

The real question before us is: how do we educate our young people for leading productive and creative lives in the 21st century? The Ohio Arts Council, through its policies and grant programs, demonstrates its belief that the arts must assume a central role in education if young people are to achieve greater academic success in school and be prepared to contribute to Ohio’s changing economy, both locally and globally.

Students who participate in arts experiences improve their academic achievement, as well as their success in other realms of learning and life. In a well-documented national study using a federal database of more than 25,000 middle and high school students, researchers from the University of California at Los Angeles found students with high arts involvement performed better on standardized achievement tests than students with low arts involvement. Moreover, the students highly involved in the arts also watched fewer hours of TV, participated in more community service and reported less boredom in school.

These findings are supported by high school students’ SAT scores. The College Board and multiple independent studies have shown that students’ arts participation and SAT scores co-vary, meaning that the more arts classes a student has taken, the greater the likelihood that he or she will achieve high SAT scores. In 2005, students who took four years of arts coursework outperformed their peers who had a half-year or less of arts coursework by 58 points on the verbal portion and 38 points on the math portion of the SAT.

Furthermore, the arts support literacy development by increasing students’ desire for and commitment to expressing personally relevant ideas. Communicating by creating and performing in the arts often enhances students’ desire to read, write, and speak. These were the conclusions of Lauren Stevenson and Richard Deasy’s comparative analysis of ten low socio-economic status arts-integrated schools that have been recognized for high performance, one of which was Cleveland’s own Newton D. Baker School of Arts.

A review of research on learning and creativity conducted by the Ohio Arts Council finds that the set of skills most required by today’s knowledge-based economy includes a combination of creative thinking, problem-solving, individual responsibility, sociability, and self-esteem. These and other aspects of cognitive growth are nurtured through an education in the arts.

Most importantly, though, the arts encourage children to think creatively. Creativity measures for students who
participated in the SPECTRA+ program in two Ohio school districts were four times higher than those of their peers who did not participate in an arts curriculum. Additionally, more than 80 percent of business leaders participating in a recent survey ranked “creativity and innovation” among the top five applied skills that college graduates need to succeed in today’s workplace. However, only 21.5 percent of recent four-year college graduates were assessed as “excellent” in these skill sets; more than half of high-school graduates were rated “deficient.”

Many business experts recognize that these findings have serious implications for America’s position in global trade. Workforce skills are nurtured through an education in the arts. Arkansas Governor Mike Huckabee, who was also Chairman of the Education Commission of the States in 2004-06, and former U.S. Secretary of Education Rod Paige both have asserted that the arts are a vital part of developing workforce skills. According to Huckabee, “The future ability of our economy and this country will be based on the fact that we have students who are able to be more creative with what they’ve learned than anyone else.” A 2001 survey of 6,000 executives, conducted by researchers from McKinsey & Company, revealed that of all the challenges businesses will face in the future, one of their greatest concerns is finding employees able to “make good decisions in times of uncertainty … adapt to new opportunities and respond creatively to change.” Creativity is the domain of the arts, and learning in the arts reinforces improvisation and entrepreneurship, vital skills for workers in the 21st century economy.

In conclusion, I, along with our Council Board (which passed a resolution of support this past summer), urge your support for the addition of one credit Carnegie Unit in the fine arts to Ohio’s graduation requirements as necessary to prepare Ohio high school students to be competitive in a global, knowledge-based marketplace. As U.S. Secretary of Education Margaret Spellings states, “[The arts are] an important part of a well-rounded, complete education for every student. The knowledge and skills that learning in the arts imparts uniquely equip young persons for life.”

Thank you for your time and your consideration of this very important issue.

Testimony given by Julie S. Henahan, Executive Director, Ohio Arts Council, in support of including a graduation credit requirement in the fine arts in Substitute SB 311 and Substitute HB 565 (the Ohio Core). This testimony was created using multiple examples in the Tool Kit.
Here’s an innovative idea: A wallet-sized card with talking points about the impact of the arts on cognition and social development. When conversing with colleagues, you don’t have to fish for the answers. You can literally reach into your wallet and say, “Wait a minute. Let me tell you what the arts can do.”

The arts help develop cognitive skills, as well as a number of strengths and capacities that contribute to better educational outcomes. Benefits include:

- Abstract reasoning skills essential to learning
- School attendance and engagement and cognitive involvement in academic work
- Creative thinking and problem-solving
- Communication skills
- Self-confidence, social skills, conflict resolution skills, and community-building skills

**How to obtain additional ArtFacts cards**

Download the pdf files that follow for printing additional cards. Overnight Prints, the company initially used to print them, required separate files for front and back, thus the reason both sizes are provided. Any business card printing company can be used, but be aware that not all of them do full color and bleed like www.overnightprints.com does. A credit card is required when ordering with Overnight Prints. Following the pdf files there is an InDesign file you can download and use to create your own version using pictures and research relevant to your state. The InDesign file is in InDesign CS3. It will tell you what links are missing, and potentially the fonts, based on what you have on your computer. You can certainly change the links and fonts.