
Review of the Literature and Bibliography

Appendix C from The Governor's P-20 Leadership Council Task Force on Arts Education in Maryland Schools Final Report

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REVIEW OF THE LITERATURE

Introduction

While there is and has been a vast body of literature on the methodologies for teaching, learning, and practicing the art forms, relatively new to the field are studies and reports on the cognitive, affective and social impact of learning in the arts on students, the value and relationships of that learning to other fields of study, and role of the arts in efforts to improve the quality of public education. This review focuses on this more recent literature relevant to the work of the task force. It serves as the foundation for the recommendations found in this task force report.

The task force wishes to express its gratitude to the Arts Education Partnership and ArtsEd Search for a powerful and helpful database of peer-reviewed research on the importance of arts education to our children. That work made this review much easier than it would otherwise have been. The task force also wishes to express its gratitude to Richard J. Deasy, founder and former director of the Arts Education Partnership, for his advice, guidance, and support throughout this Review of the Literature.

The bibliography that follows this review is in the same format as the below outline.

Nature and Effects of Learning in the Arts

- Cognitive and affective capacities required and nurtured by the arts
- Relationship of arts learning to other fields of study
- Brain functions related to learning and practicing an art form

Arts and School Improvement

- Impact of the arts on high-poverty and underperforming schools
- Sustaining the arts in school districts

Policy Studies and Reports Germane to the Arts

- National studies and reports
- Maryland policies, studies and reports

Public Opinion on the Role of the Arts in Education

- National studies and reports
- Maryland studies and reports

Relevant Media Coverage of Arts Education

- New York Times
- Washington Post
- The Wall Street Journal

Best Practices

- Dance
- Music
- Theatre
- Visual Arts

The reader should be aware that many of the citations found in the bibliography could easily have been placed in multiple sections of this review since there is often evidence in the research that crosses categories. For the most part and for the purposes of writing this review of the literature, the citations are placed in the one section deemed most appropriate. The research on arts education has exploded in recent years. The task force members are excited about the extent to which the research supports the recommendations found in this report and how those recommendations should impact policy decisions, regulation, funding, curriculum writing, and classroom instruction.

Nature and Effects of Learning in the Arts

In 2002, business, community, education leaders, and policymakers formed the nationally recognized Partnership for 21st Century Skills (2002). This partnership began a national conversation on the skills needed by students to be successful in the 21st century. Over the past decade, the message has evolved and has resulted in the Framework for 21st Century Learning. This task force believes that the arts integrate those 21st century skills into daily instruction.

The Partnership created a graphic representation in the form of a two-tiered arch of those skills deemed necessary for students. The bottom tier represents the core subjects, which include the arts. The second tier includes life skills as well as information, media, and technology skills. At the top of the arch, however, are learning and innovation skills, including critical thinking, collaboration, communication, and creativity. It is these learning and innovation skills that the Partnership suggests separate those students who are prepared for the 21st century.

To explore further, critical thinking skills include the ability to reason effectively, use systems thinking, make judgments and decisions, and solve problems. Communication and collaboration skills include the ability to use oral, written, and non-verbal communication. They also include the ability to listen

effectively, work with diverse teams, and share responsibility. Creativity requires the ability to think creatively, work creatively with others, and implement innovations.

The cognitive and affective capacities identified as essential “skills” by the 21st Century Skills Partnership were also identified by Deasy (Ed.) (*Critical Links*, 2002) as those skills that are engendered by the arts and serve as the foundation for the positive relationships of learning in the arts and learning in other domains. Likewise the Arts Education Partnership (2013) in *Preparing Students for the Next America* identified those capacities necessary for students to be prepared for school work, and life, all of which shall be explored in this Review.

The following three subsections of this Review of the Literature demonstrate the integration of skills gained through the arts and the impact of the arts on enhancing those skills. The conclusion is inescapable – the arts are critical to the success of students by preparing them for the workforce of the future.

Cognitive and affective capacities required and nurtured by the arts

A number of researchers and authors have looked at the various cognitive and affective capacities that make for successful human beings and the extent to which those capacities are nurtured by the arts. This section explores the findings of a number of those researchers. For example, Binder and Kotsopoulos (2010) state that the arts can provide children with an identity journey that helps them understand the world around them. They further state that the journey helps children understand and express their own inner thoughts through which they can explore and validate their social and cultural ways of knowing. Children’s visual representations allow them different forms of expression and moves them from an “I” mentality at the beginning of their work to a “we” mentality and a sense of community as they engage with each other and share their work. Heather Malin (2012) studied the outcomes of art-making by elementary school students over an entire year. She wanted to know how art prepares students to connect, collaborate, and communicate in society. She found that art allows children to feel what it is like to be part of a community, explore boundaries, develop a community of critique and encouragement, and enjoy a sense of self-fulfillment and an identity in the community.

Catterall (2007) looked at the effect of drama instruction on pro-social behavior, learning processes, and attitudes toward drama in an after-school drama program. He found that students who participated in a 24-week theatre program developed more self-efficacy and conflict resolution skills than a control group comprised of students who were unable to participate. This study was conducted in schools with high

instances of poverty and low academic track records. Podlozny (2000) studied the relationship between drama instruction and student verbal achievement. Such instruction resulted in larger effect sizes for story understanding, reading achievement, reading readiness, writing, and oral language development, depending upon chosen instructional approaches. Montgomerie and Ferguson (1999) looked at effects of a process drama program on four-to-eight-year-old students. They found that students were able to explore multiple viewpoints in addition to those in the text. They also showed improved language development, including the construction of argument and ways of speaking depending upon circumstances.

In another study, Catterall and Pepler (2007) suggest that arts students in Los Angeles and St. Louis who participated in different types of rich arts programs made significant gains in self-efficacy and in creativity. These outcomes would, of course, benefit all children, but they are especially important with children from challenged backgrounds. The above findings corroborate those of two other studies. De la Cruz (1995) stated that students showed improvement in social skills and oral expressiveness as a result of participating in a creative drama program. Kennedy (1998) studied the effect of musical performance on the self-efficacy and self-esteem of juvenile delinquents and disadvantaged children. Guitar instruction was provided to 45 participants during a three-month study. He found that students who received instruction on musical performance techniques improved their self-esteem and self-efficacy compared to students in other conditions. Kagan (2009) suggests that participation in the arts increases self-confidence and the ability to work cooperatively towards a common goal.

Heath and Wolf (2005) conducted a study of four- to seven year-olds who worked with a professional visual artist one day a week for an entire academic year. They found that the visual art environment helped improve students' vocabulary, command of syntax, use of metaphor, analogical reasoning, hypothetical thinking, and problem solving skills. The children's art showed confidence in working through problems, paying attention to detail, and understanding of complex terms and processes. Weinstein (2010) studied the personal and social outcomes of students engaged in poetry. She found that students who engage in writing and performing poetry begin to see themselves as writers thereby developing literate identities.

Karakelle (2009) studied the notion of divergent thinking through the creative drama process and found that fluent and flexible thinking, two important aspects of divergent thinking, led to increased creativity. Because divergent thinking requires a student to think in different directions, it is essential to creativity and vice versa. Creative drama tends to increase the tolerance of uncertainty and the sparking of curiosity, both of which lead to fluent and flexible thinking. Luftig (2000) studied the effects of an arts

infusion program on creative thinking among other outcomes. He found that students who were involved in an arts infusion program demonstrated advantages in creativity, academic achievement, and social self-esteem. Adams (2005) wrote a paper for the National Center on Education and the Economy where she studied the sources of innovation and creativity. She made a number of recommendations, including designing curriculum that promotes divergent thinking, promoting decisions to be creative, encouraging problem-based learning, and realigning testing to focus on creativity.

Noppe-Brandon, Deasy, and Gitter (2011) wrote a paper for the Lincoln Center Institute that described the findings from their *Imagination Conversations*. Behind this paper was the call from a wide variety of stakeholder and organizations, particularly the business community, for a renewed focus on imagination, creativity, and innovation (ICI). President Obama also focused on innovation during his 2011 State of the Union Address. The conversations were an ongoing series of public panel discussions held around the country, including in Maryland. The ultimate goal was to generate knowledge and build a critical mass of support for environments where ICI could flourish. They found that environments that encourage risk-taking are crucial to the conversation. Likewise there needs to be an atmosphere where ICI are not hindered. Collaboration was another key ingredient. In schools, these findings suggest the need for real-world challenges. Dr. William “Brit” Kirwan (p. 12), Chancellor of the University System of Maryland, states that engineering programs have changed to require a final year major problem that needs to be solved by students working in teams. In K-12 education, there needs to be similar opportunities for collaborative problem-solving where risk-taking is allowed and a culture that seeks creativity, and innovation exists.

Maryland participated in the Imagination Conversations through a cooperative effort between The Arts in Maryland Schools (AEMS) Alliance and the Lincoln Center Institute. Maryland focused on three key questions during their conversations:

1. What is the role of imagination/creativity/innovation in our own domains?
2. What conditions and strategies nurture imagination/creativity/innovation in our work?
3. What conditions and strategies best nurture imagination/creativity/innovation in education?

Among the many recommendations coming from the Maryland Imagination Conversations were the following:

- Articulate the vital role of arts education in developing ICI.
- Reflect the value of ICI in policy and practice in instruction and accountability across the curriculum as well as in the arts.
- Recognize and support the role of teachers in supporting ICI.

- Train teachers to be creative, to value creativity explicitly, and to enable students to see themselves as creative agents.
- Build the capacity of teachers to integrate skills and content across arts disciplines as well as across other content areas.
- Make the intersection of art and technology a nexus of creativity.
- Infuse ICI in teacher pre- and in-service training as values and ways of thinking to be transmitted to students as well as to be used in effective teaching.
- Inform and engage business, higher education, and public policy leaders in ICI initiatives in PK-12 schools.

Sandra Ruppert (2010) from the Arts Education Partnership has stated that “The United States is competing in a dynamic global economy in which two assets – a skilled, versatile, and highly adaptable workforce and the capacity for creativity, innovation, and entrepreneurship – provide a decisive edge.” Richardson (2011) also suggests that there is a need to start focusing on creativity, originality, and design thinking.

Two other capacities nourished by the arts include attention and perseverance. Scott (1992) examined the effect of Suzuki violin lessons on children’s development of these two traits. Children in the two Suzuki groups scored higher on attention tasks than other students. Likewise, children in the two Suzuki groups spent significantly more time on the perseverance task than children not in these groups.

Miller (2013) reports on a study by University of Arkansas social scientists examined the benefits of exposure to the arts, specifically in this instance exposure to cultural institutions such as museums and performing arts centers. The researchers found that such students not only have higher levels of engagement in the arts but also display greater tolerance, empathy, memory skills, and critical thinking skills, further corroborating other studies. Galinsky (2010) focused on the need for teenage boys to develop such empathy.

Montgomery County Public Schools in Maryland and the Arts Education in Maryland Schools Alliance (AEMS), with the help of a grant by the United States Department of Education, also looked at the impact of an arts integration model on selected schools. They determined the following:

- The selected schools showed a high level of student engagement.
- Students were enthusiastic and excited about participating.
- Students’ level of self-confidence and cooperation improved.
- Alternative instructional approaches met their needs.
- The atmosphere in the schools became more positive and cohesive.

- The project precipitated whole-school change.
- Teachers with more professional development showed the greatest gains.

One of the outcomes of this study was the creation of the Post-baccalaureate Certificate in Arts Integration in 2007, a multi-institutional graduate credential offered through Towson University.

Daniel Pink, former chief speechwriter for Vice President Al Gore and attorney in the Department of Labor, argues that our country is entering a new era -- the so-called conceptual age -- during which right-brained skills such as those fostered by the arts will become far more critical than left-brained skills such as accounting and computer programming. He suggests that the latter can be readily outsourced; whereas, such capacities as empathy and creativity are more crucial in the 21st century.

The oft-quoted, late Elliott Eisner (2002), Stanford Graduate School of Education, has contributed greatly to the literature with his ten lessons that the arts teach. They include:

1. The arts teach children to make good judgments about qualitative relationships. Unlike much of the curriculum in which correct answers and rules prevail, in the arts it is judgment rather than rules that prevail.
2. The arts teach children that problems can have more than one solution and that questions can have more than one answer.
3. The arts celebrate multiple perspectives. One of their large lessons is that there are many ways to see and interpret the world.
4. The arts teach children that in complex forms of problem solving purposes are seldom fixed, but change with circumstance and opportunity. Learning in the arts requires the ability and a willingness to surrender to the unanticipated possibilities of the work as it unfolds.
5. The arts make vivid the fact that neither words in their literal form nor numbers exhaust what can be learned. The limits of language do not define the limits of cognition.
6. The arts teach students that small differences can have large effects. The arts traffic in subtleties.
7. The arts teach students to think through and within a material. All art forms employ some means through which images become real.
8. The arts help children learn to say what cannot be said. When children are invited to disclose what a work of art helps them feel, they must reach into their poetic capacities to find the words that will do the job.
9. The arts provide experiences that other source cannot.

10. The arts in the school curriculum symbolize to the young what adults believe is important.
(pp. 80-92)

Relationships of arts learning to other fields of study

The arts not only develop required cognitive and affective capacities in successful human beings, but also learning in the arts has a direct relationship to other fields of study, often referred to as transfer. The notion of transfer has received much attention over the years and was addressed in an essay by James Catterall in Deasy, (Ed.), (*Critical Links*, 2002) when referring to the “Mozart makes you smarter” craze in the mid-1990s:

Amidst the excitement, skeptics raised their voices. One group of psychologists, who had reason according to the traditions of their discipline, questioned transference. They believed claims such as cognitive development through music, reading achievement through drama, problem-solving through the visual arts, or persistence through dance were based on flawed research. Or if examined closely, such relationships must be trivial, or not instances of transfer, or simply evidence of something else. And the nation's arts educators and artists found themselves in a dilemma as interest in learning through the arts escalated. Arts educators and advocates feared that the talk of learning mathematics through music or producing increased standardized test scores through the visual arts would demean the higher place of art in society, further shielding the intrinsic worth of the arts from the public eye. At the same time, however, increased interest in the arts was serving to shift public and private resources toward arts education in a significant way. Some artists and arts educators heralded a revival of the arts, for whatever rationale; others felt their callings compromised (p.151).

In another article in that same compendium (Deasy, ed. 2002), Minton also addresses the notion of transfer through dance instruction. She states:

This study suggests a possible relationship between dancing and improved ability to consider multiple perspectives. Such flexible thinking is useful in a range of disciplines.

The study finds that high school students who studied a variety of styles of dance for a semester scored better than non-dancers on the elaboration, originality, and abstractness, factors of the Torrance Test of Creative Thinking. This study also models an experimental design that allows reliable conclusions about transfer to be drawn.

Experimental designs establish the direction of effect, in this case, from dance instruction to the outcome measure of creative thinking (p. 8).

The whole notion of causality vs. correlation has been a topic of transfer conversations for many years. While most research in education in general and arts education specifically does not claim to demonstrate strict causality as opposed to correlation, it is undeniable that the volume of research on this matter is now quite dramatic in terms of the effect of the arts on other disciplines and the intrinsic value of the arts as disciplines that do not require justification through other disciplines.

Some of the research is quite compelling. A team of multidisciplinary researchers studied Michigan State University Honors College Graduates (Science Daily, 2013) from 1990 – 1995 who majored in science, technology, engineering, or mathematics. They found that those graduates who own businesses or patents had received as much as eight times more exposure to the arts as children than the general public. Sustained participation over the years increased the likelihood of the participant becoming an inventor.

Burton, Horowitz, and Abeles (2000) also addressed the notion of transfer and the effects of learning in the arts on non-arts subjects as well as school climate. They administered numerous tests of creativity to fourth, seventh, and eighth grade students at 12 schools. They then compared students in the lowest quartile of arts exposure to those in the highest quartile of arts exposure. They found that the latter scored higher on the creativity test and were scored higher by their teachers on expression, risk-taking, creativity-imagination, and cooperative learning. Teachers and principals in schools with strong arts programs also believed that the arts encouraged more creativity across the school and created a more enjoyable place to work. The significance of this work is that it demonstrates that transfer is not just a direct relationship between the arts and another subject; rather there are a number of relationships between capacities and ways of thinking that impact other subjects and indeed school climate.

Spelke (2008) looked at the effects of music instruction on developing cognitive systems at the foundations of mathematics and science. The results show that from two of the three experiments, musical training is associated with higher skills in mathematical representation, reasoning in geometry, and estimation. Musicians outperformed non-musicians on a geometry activity. Music and dance majors outperformed other majors in estimation, number line, map activities, and geometric invariants, while visual arts majors outperformed creative writing and theatre majors.

Catterall and Chapleau (1999) described results from data emanating from the National Educational Longitudinal Survey which followed 25,000 students in middle and high school for 10 years. This research looked at student involvement in the arts across disciplines and the importance of sustained involvement in a single discipline (specifically music and theatre arts). They found that students engaged in the arts showed comparative academic success gains which became more pronounced over time, including for students of low-economic status. Students who showed high levels of involvement in

instrumental music over time showed significantly higher levels of mathematics proficiency by grade 12. Likewise students who showed sustained involvement in theatre arts had gains in reading proficiency, self-concept, motivation, levels of empathy, and tolerance for others. These findings are significant in that they show a relationship between arts education and student achievement. Moreover, they show that different art forms impact learning differently and thus we should be able to expect different outcomes depending upon the art form studied.

Courey, Balough, and Siker, and Paik (2012) examined the effects of a music intervention on a conceptual understanding of music notation, fraction symbols, and fraction size. They found that conceptual understanding of music informed the way in which they solved fraction computation problems. Students who had less fraction knowledge at the outset responded well to instruction and scored similar to their higher achieving peers. It is suggested that this approach to early fraction instruction may well provide the basis for a deeper understanding of fractions due to the fun and engaging ways that fractions are presented.

DeMoss and Morris (2002) studied 30 students taught by veteran teaching artists to try to understand their cognitive processes when involved in arts-integrated instruction compared to traditional instruction for the same unit of instruction. They found that students who received the arts-integrated instruction improved their ability to assess their learning. They also reported greater intrinsic motivation among this group of students, as well as problem-solving skills and motivation to continue learning. This study suggests that curriculum writers should look at ways to incorporate arts integration into their instructional units. There are also implications for pre-service training. Lajevic (2013) suggests that it is necessary to re-evaluate the position of art in teacher education. She states that even though teachers live in an inter-connected world, their academic education does not always promote teaching and learning in such ways since it does not often embrace arts integration. She says that learning to become a teacher is comparable to thinking like an artist by using creativity and taking risks. The latter are woven throughout one's life. Integrating the arts should be similarly woven throughout the curriculum.

Smithrim and Upitis (2005) also looked at arts-integrated curricula developed by professional teaching artists in collaboration with classroom teachers. They wanted to determine if students who participated in a "Learning through the Arts" program showed positive gains in mathematics, language arts, attitudes towards the arts, and learning. They found that students in the program scored higher than counterparts on tests of computation and estimation across all socioeconomic classes, with greater mathematics gains accruing to those who were engaged over a longer period of time. Furthermore, they found that participants were more engaged in their learning.

Seidel (1999) studied students understanding of Shakespeare plays and found that students used active reading skills developed in the Shakespeare program in other academic areas, including mathematics, physics, and other types of literature. Additionally, he found that drama provides an ideal setting for deeper learning experiences. Harris (2007) studied groups of students in Ontario, Canada who received traditional Montessori instruction and those who receive music-enhanced Montessori instruction. Students were randomly assigned to one of two groups for three times a week for six months. Students in the music-enhanced instruction scored significantly higher on the Test of Early Mathematics Ability.

Heitin (2012) wrote an article for *Teacher PD Sourcebook* describing the efforts of the non-profit Story Pirates who wish to inspire children to use their imaginations through writing. The children write stories, and the professional actors act out those stories. The group has a great deal of anecdotal evidence from teachers saying that their students are writing more than ever before because of seeing what they write actually make it to the stage. This program has rich potential for integrating drama and writing and is currently engaging the services of professional evaluators to determine its effectiveness. Walker, Tabone, & Weltsek (2011) studied the integration of drama strategies into language arts curriculum for sixth and seventh graders in New Jersey and found that those students who had been exposed to the arts-integrated curriculum passed the assessment at a higher rate than those who did not participate. Likewise, students in the arts-integrated curriculum missed fewer days of school.

Brain functions related to learning and practicing an art form

Neuroscience has spawned an emerging branch of research on brain functioning related to the study of the arts. It is an exciting field in that it affirms the importance of the contributions of the arts to cognitive development and thus has significant implications for policymakers at the local, state, and national level.

Bonbright, Bradley, and Dooling (2013) quote Sousa (2006) in their compendium of research for the National Dance Education Association as making the connection between neuroscience and the arts and how the arts impact a young person's brain.

During the brain's early years, neural connections are being made at a rapid rate. Much of what young children do as play -- singing, drawing, dancing -- are natural forms of art. These activities engage all the senses and wire the brain for successful learning. When children enter school, these art activities need to be continued and enhanced. Brain areas are developed as the child learns songs and rhymes and creates drawings and finger paintings. The dancing and movements during play develop gross motor skills, and the sum of these activities enhances emotional well-being. And sharing their artwork enhances social skills. The arts are not just expressive and affective,

they are deeply cognitive. They develop essential thinking tools -- pattern recognition and development; mental representations of what is observed or imagined; symbolic, allegorical and metaphorical representations; careful observation of the world; and abstraction from complexity (p. 38).

Regarding the neurological benefits of dance and movement in schools, they quote Sousa again stating:

Even short, moderate physical exercise improves brain performance. Studies indicate that regular physical activity increases the number of capillaries in the brain, thus facilitating blood transport. It also increases the amount of oxygen in the blood, which significantly enhances cognitive performance. ... Not only does the movement increase cognitive function, but it uses up some kinesthetic energy so students can settle down and concentrate better later. ... Dance techniques help students become more aware of their physical presence, spatial relationships, breathing, and of timing and rhythm in movement. Movement activities are also effective because they involve more sensory input, hold the students' attention for longer periods of time, help them make connections between new and past learnings and improve long-term recall (pp. 38, 39).

The authors go on to say: "The evidence has been growing for the ways in which dance impacts learning, as a part of the arts, and as a separate and unique discipline" (p. 56).

Costa-Giomi (1999) was among the first to look at the effects of music instruction, specifically piano, on children's cognitive development. She studied these effects on 9-12 year-olds, comparing those who received after-school piano instruction once a week to those who received no instruction. She found the piano lessons to have positive effects on students' general (attention, memory, logic, and reasoning) and spatial (mental visualization and manipulation of patterns) cognitive development. Even though this difference seemed to even out over time, it is believed that it is more related to reduced student effort over time rather than the short-term effect itself. Also, Hyde (2009) conducted brain scans before and after using MRIs in young children to determine if direct instrumental music instruction made a difference and found that there were indeed brain and behavioral changes in the auditory and motor areas.

Dunbar (2008) conducted a three-year study of college students using neuroscience methods to determine if there are cognitive differences between performing arts students and non-performing arts students. He found that such a difference did indeed exist and that performing arts students activated regions of the brain associated with language processing (which can lead to increased activation of conceptual thinking); whereas, non-performing arts students activated regions associated with perception. Sparks (2013) in a paper describing findings from the Society for Neuroscience suggests that music training may increase the neural connections in the brain that are closely associated with creativity, decision making, memory, and

the processing of conflicting information. She also reported on a study in China using functional magnetic resonance imaging to record blood flow that found students who began musical training prior to age 7 had significantly more developed brain areas associated with language and executive function.

More compelling evidence of the value of music education comes from Nina Kraus, Ph.D., Knowles Professor of Neurobiology, Physiology, and Communication Sciences at Northwestern University. In a press briefing as reported in Science Daily, Kraus (February, 2010), she argued that music training has profound effects that shape the sensory system and thus should be a critical component of K-12 education. By comparing brain responses to predictable vs. variable sound sequences, she suggests that playing an instrument may help students better process speech sounds and auditory signals in noisy classrooms and more accurately interpret nuances of language. In another article later that same year, Kraus and Chandrasekaran (August 2010) state that music prepares the auditory system for listening challenges beyond music processing. Smaka (2013), in an interview with Kraus found that because of her research, Kraus believed that working on making sound to meaning connections through such things as musical instruments can help create a nervous system that is able to respond more consistently by picking up on sound patterns and represent meaningful elements of sound.

Retention of content has also seen attention among researchers in recent years. Jonides (2008) looked at the impact of rehearsal and memorization on long-term memory. He found that trained musicians have better long-term memory and increased activity in their temporal lobes than non-musicians. Retention also appears to be a byproduct of arts integration in schools. Rhinne, Gregory, Yarmolinskaya, and Hardiman (2011) propose that arts integration leverages a number of factors that research has shown to affect long-term memory. Those factors include:

- Rehearsal – It is well documented that rehearsal of information leads to long-term retention of information. The more that rehearsal is tied to prior knowledge, the more effective it becomes. Artistic activity can significantly enhance rehearsal, and students are more likely to want to participate in artistic activity than simply memorize content.
- Elaboration – Semantic elaboration (that which adds meaning) can improve memory and recall of information. Writing a story, poem, song, poem, or creating a work of visual art assist in adding such meaning to content.
- Generation – Generating information in response to a cue can lead to better retention of content than simple reading of the information. Activities such as having students create a work of art provide opportunities for generating information in an active way rather than simply receiving the information.

- Enactment – Physically acting out material tends to improve long-term memory. One can see this effect in the performing arts, especially theatre.
- Oral Production – Producing a word orally yields better recall than reading silently. Thus singing songs or performing in theatrical pieces can lead to better long-term retention.
- Effort after Meaning – The effort expended to understand new information is critical to long-term retention. Artistic activity can play an important role in motivating students to put effort into understanding the meaning of what they witness.
- Emotional Arousal – Emotional arousal can impact long-term retention. Certainly art brings out emotion in stories, paintings, theatre, and dance.
- Pictorial Representation – The “pictorial superiority effect” suggests that information presented in pictures is retained better than the verbal counterpart. Using images with artistic content in pictorial representations can assist with long-term memory.

Petitto (2008) focused her research on the impact of dance education on attention and perception and the effects of childhood music education on later adult second language learning. Using brain imaging, she found that dancers were significantly more accurate in terms of paying attention to detail, probably due to their focus on precision and their ability to tune out distractions. Additionally, she found that early dancing improved memory and processing speed in spite of the fact that there were no genetic differences between dancers and non-dancers. She also found that adults who were exposed to music as children performed better on language learning tasks than those who were not exposed to music. Gazzaniga (2008) states that research indicates that dance training can enable students to become highly successful observers. That outcome has been affirmed by the Grafton and Cross research as cited in Gazzaniga (p. 62, 2008).

Posner, Rothbart, Sheese, and Kieras (2008) studied the impact of arts training on motivation, attention, cognition, and achievement. They found that motivation improves attention and sustained attention tends to improve cognition. They also found that success in the arts is somehow related to the temperament of the child.

Using children who were part of an NIH study, Wandall, Dougherty, Ben-Shacher, Deutsch, and Tsang (2008) wanted to determine whether there was any correlation between arts training and reading performance. Changes in physiological behavior were measured through the use of diffusion tensor imaging. They found that a strong correlation existed between visual arts training and phonological awareness as well as math calculation ability.

Arts and School Improvement

Although the arts require no additional justification beyond their intrinsic value to individual students, they also have an impact on overall school improvement, especially high-poverty and low-achieving schools. As principals, central office administrators, policymakers, and parents search for answers to the many challenges facing public schools, the value and impact of the arts can provide research-based solutions.

Impact of the arts on high-poverty and underperforming schools

One of the more promising arenas for demonstrating the impact of the arts in school improvement is with high-poverty and underperforming schools. In analyzing data from four large-scale, longitudinal, national datasets to determine how a student's level of arts participation during PreK-12 relates to academic achievement and civic engagement, Catterall, Dumais, and Hambden-Thompson (2012) arrived at some important conclusions. They compared outcomes for students from low socio-economic status (SES), high SES, and the general population based on level of participation in the arts. They found that teens and young adults who had high arts participation and were low SES showed better academic outcomes than their low-arts, low-SES counterparts. They also found that intensive arts experiences for at-risk youth generally were close to or exceeding the results of the general population. The strongest relationship was between high-arts and low-SES students' academic outcomes. The findings of this study offer possibilities for schools and school districts wishing to improve outcomes for disadvantaged youth. In spite of the above findings, a troubling outcome from the research of Rabkin and Hedberg (2011) suggests that arts education is the most influential factor in terms of arts participation, but that the general trend is one of declining rates of childhood arts education, especially among low-income and minority children.

Stevenson and Deasy (2005) conducted a comparative case study of ten schools with economically disadvantaged students. They found that arts education provides safe spaces for children to be risk-takers and learn to adapt and be flexible in arriving at solutions. Students in these schools embraced the creative process, taking responsibility for their own goals and measuring their own success. Self-efficacy improved. Teachers were better able to relate to their students and were more satisfied in their profession. Arts education also helped build a sense of community with greater tolerance and empathy. One significant overall finding was that within the complexity of schools comprehensive arts programs may help bring about systemic change. The "third space" in this research refers to the space that allows for

deep learning between a work of art and the viewer. The practical impact of this study for a school is potentially immense.

The relationship between low-achieving schools and the availability of the arts is of international interest, as well. For example, Caldwell and Vaughan (2012) studied students in ten schools in highly disadvantaged settings in Sydney, Australia that had the benefit of free arts-based programs. They stated at the outset that UNESCO considered education in the arts to be a universal human right, implying that its absence or “sidelining” is a breach of the convention on rights of the child (p. 3). They found that students who participated in the program had significantly higher grades in their academic subjects compared to students who did not participate in the program. The students also had higher overall resilience scores.

Sustaining the arts in school districts

Beyond the impact that the arts have demonstrated for high-minority and low-achieving schools, the arts have also shown positive effects on entire schools and school districts. Citing the existing research, Chicago Public Schools (2012) developed a new policy and plan requiring every student to receive a comprehensive and sequential arts program from PreK-12 to include visual art, music, dance, and drama with full support of its Board of Education and mayor’s office.

The Missouri Alliance for Arts Education Research (2013) conducted a three-year analysis of district data from 514 school districts, studying the relationship between student participation in the arts and attendance/graduation rates, disciplinary infractions, and statewide tests in language arts and mathematics. They found that attendance rates were higher for districts with greater student enrollment in the arts. Participation in the arts was significantly correlated with proficiency in mathematics. Standardized test scores for communication arts were significantly higher for districts with greater arts participation. Higher graduation rates and fewer disciplinary infractions occurred in districts with higher arts participation. Interestingly, this study pointed out that a mere 1% increase in student attendance equals an additional \$430,000 annually for a school district of 12,000 students because of their funding formula.

In one of the earlier pieces of research in this field, Barry, Walls, and Wood (1990) conducted a qualitative study to ascertain the role of the fine and performing arts in high school dropout prevention in Florida. They wanted to determine if teachers’ claims that students who were identified as potential dropouts attended and performed well in their classes. Forty students were surveyed, and 83% responded to a direct question that the arts played a role in keeping them in school.

Barry (2010) studied the Oklahoma A+ Schools improvement initiative to determine the impact of art integration on schools. This initiative had its roots in North Carolina and has been identified as one of the more successful initiatives in the nation. The overall goal of the initiative was to improve student achievement and engagement. Barry found that both community and staff held strong, positive beliefs about the impact of the initiative on student achievement and engagement due to the positive climate that existed in the schools.

Catterall (2009) found a strong correlation between arts education and academic/social success. An integrated arts curriculum delivered better college outcomes and career opportunities. These findings are important for all states and local school systems that desire to deliver college- and career-ready students through the Common Core State Standards. The AEP Wire wrote a review of *Doing Well and Doing Good by Doing Art* (2009 Catterall) which suggested that the significance of Catterall's work was the empirical evidence it provided on the impact of arts education on the lives of young people.

Effective integrated-arts programs require a great deal of hard work and ongoing training. Garrett (2010) studied the benefits of professional development on arts integration for elementary school teachers and the transfer to instructional practice. Teachers reported that training helped improve their instructional practice in planning, delivery, and assessment. They believe that their improved practice impacted student outcomes in terms of academic achievement, engagement, and collaboration. Because of the engagement, teachers also reported less difficulty with classroom management. Dr. Hardiman of Johns Hopkins University (2013) adds that the arts will also help with school accountability and should be part of any new accountability design.

Ingram and Riedel (2003) looked at the impact of arts integration on student achievement. This study was a three-year effort out of the University of Minnesota. They found that reading scores were reliably higher for students whose teachers integrated the arts into English and reading lessons. The relationship was strongest for ELL students and disadvantaged children. Lorimer (2009) states that "Infusing visual and performing arts into the curriculum adds critical components to educating the whole child" (p. 8). Martin, Mansour, Anderson, Gibson, and Liem (2011) studied arts integration in Australia, paying particular attention to in-school and out-of-school programs for a fee. They found that in-school arts integration programs had a greater impact than out-of-school programs, especially those for which students had to pay. Similarly, Nichols and Stevens (2013) found that arts integration programs may have a significant impact on the sciences. They provided multiple examples of arts integration in science lessons. Poland (2012) conducted a meta-analysis of arts integration, documenting the positive impact of

arts education programs on academic achievement in core content areas. Scott, Harper, and Boggan (2012) arrived at the same conclusion.

Burnaford, April, and Weiss (Eds., 2002) wrote an early but important text, *Renaissance in the Classroom*, on arts integration and arts partnerships in schools that is still a mainstay in the literature today. The book described how to create, implement, and assess curriculum units that integrate arts and academic subjects. It also discussed how to forge, nourish, and maintain successful partnerships. They explored various collaborations between classroom teachers and visiting artists as well as constraints in schools that must be overcome.

All schools in Maryland must be prepared for the Common Core State Standards, the resulting curriculum, and the assessments. David Coleman, a lead writer of the English language arts standards and current president of the College Board, was described as saying in an article by Robelen (2013) for *Education Week* that some of the components of the English Language Arts Standards, including building knowledge through reading, writing, listening, and speaking, using high quality source material, observation, and analysis of text, were already outcomes of a rich arts program. Coleman was quoted as saying, “The great news is that the standards call on so many things the arts do well” (p. 18). The standards represent wonderful opportunities for arts integration, and curriculum writers need to take notice.

How a school district goes about creating and sustaining high-quality arts programs inside and outside of school for K-12 students was a study commissioned by the Wallace Foundation and conducted by Seidel, Tishman, Winner, Hetland, and Palmer (2009) from Project Zero at the Harvard Graduate School of Education. Their report *The Qualities of Quality: Understanding Excellence in Arts Education*, suggested that there are a complex set of conditions, influences, and dispositions that are characteristics of such programs. Additionally, the system needs to understand what decisions need to be made, who the decision makers are, and what the decision making process will be.

Central to this conversation in school districts will be the need to come to resolution to four foundational questions:

- Who should teach the arts? The researchers they found no theorist or educator who believed that the arts should only be taught by arts specialists and never by teaching artists. Nor did they find anyone who believed that the arts should only be taught in stand-alone classes or solely as integrated into the curriculum.

- Where should the arts be taught? The researchers stated that no arts educators in their study believed that the arts should not be taught in schools or that there should be no out-of-school art experiences. They also discussed the dangers of relying too heavily on an out-of-school arts program.
- What should be taught and how? Some argued that the curriculum should be more diverse, including contemporary art and art beyond the western culture. Others suggested that art should be taught in stages – western culture first before bringing in other cultures. Additionally, a decision needed to be made regarding whether arts education should be focusing on making works of art or developing students’ capacities to perceive, react to, and understand works of art.
- How should arts learning be assessed? Arts advocates wanted to see the arts assessed alongside other core academic subjects. Others worried about the potential detrimental effects of large-scale assessment.

One of the earliest studies on sustaining the arts in school districts was done in partnership between the President’s Committee on the Arts and the Humanities and the Arts Education Partnership (Longley, Ed., 1999), *Gaining the Arts Advantage: Lessons from School Districts that Value Arts Education*. This study identified several key factors in school districts that were successful in sustaining arts education program in spite of tremendous obstacles. They included: school board support; superintendent support; continuity of community leadership; strong district arts coordinator; a cadre of supportive principals; effective arts teachers; parent/public relations; elementary school foundation; opportunities for higher levels of achievement; national, state, and outside forces; planning; and continuous improvement. The study concluded that “The single most critical factor in sustaining arts education in their schools is the active involvement of influential segments of the community in shaping and implementing the policies and programs of the district” (p. 9).

Policy Studies and Reports Germane to the Arts

National studies and reports

A number of national studies and reports germane to the arts have been written, including some that have been previously cited which could also easily be included in this category. The Institute of Education Sciences (2008), in preparing the *Nation’s Report Card*, produced data on music and the visual arts in comparison to 1997 data. They found that there were gender and racial achievement gaps evident in both music and visual arts. Frequency of arts instruction remained about the same. The important point here

was that although the research showed clearly that there was a positive impact of arts education on these populations, they were still not getting the exposure to the arts as were other populations. Parsad and Spiegelman (2008) analyzed similar data and provided an analysis for the National Center for Educational Statistics. They reviewed data on the availability of arts programs, characteristics of those programs, instructors, graduation requirements, community partnerships, and teaching loads the elementary and secondary levels in dance, music, drama/theatre, and visual arts.

The Arts Education Partnership (2013) reports regularly on the status of arts education across the country through their State Policy Report Generator and their State of the States Report. Interested readers can go to their website to review data by state such as: state fine arts standards; arts education instructional requirements by elementary and middle school, high school graduation requirements, and assessment requirements.

Reinvesting in Arts Education (2011), a product of the President's Committee on the Arts and the Humanities, released five recommendations on arts education: 1) Build collaborations among different approaches (for dealing with access issues); 2) Develop the field of arts integration; 3) Expand in-school opportunities for teaching artists; 4) Utilize federal and state policies to reinforce the place of the arts in K-12 education; and 5) Widen the focus of evidence gathering about arts education. *Tough Choice or Tough Times* (2007) discussed the need for educational systems to pay attention to developing in students capacities such as innovation, facility with ideas and abstractions, self-discipline, organization, drive, and the ability to function as a member of a team.

Zakaras and Lowell (2008) produced a report for the Rand Corporation that looked at the decline in arts participation generally over the years. They suggested that many Americans do not have the knowledge and skills to appreciate what the arts have to offer and that too many policymakers have not included the arts. They claimed that the decline is a supply and demand issue and that demand for the arts was drying up because too many people graduate without an appreciation of the art. This situation, then, would eventually have the negative effect of a decrease in funding for the arts. They suggested that public policy makers need to cultivate the demand by providing rich art education programs in schools.

Richerme, Shuler, and McCaffrey (2012), in *A SEADAE Arts Education White Paper*, dealt with some extremely important policy issues in looking at the training of three, key partners in arts education – certified arts educators, certified non-arts educators, and providers of supplemental arts instruction. Certified arts teachers were more broadly trained than teaching artists because they needed to deliver a comprehensive curriculum. Thus, they were a necessary component to a rich arts experience, but they

were unable in many cases to bring depth to the table because of their broad training. The certified non-arts educators were those who were not certified to teach art, yet they taught other subjects. The subjects they taught provided multiple opportunities for interdisciplinary activity as well as collaborative partnerships with arts educators and partner arts organizations. The authors claimed that providers of supplemental arts instruction, including teaching artists and community-based organizations, can contribute the richness needed to fill the gap left by arts educators and non-arts educators because of the depth of their experience and their daily work focused on their art. They also provide the real world connection needed so badly by students. As a result of the foregoing discussion, the authors offered four recommendations:

1. Ensure that all students in public schools have access to sequential, standards-based arts instruction taught by certified arts educators
2. Foster instructional collaboration between certified arts educators, certified non-arts educators, and providers of supplemental arts instruction
3. Foster advocacy collaborations among these groups to provide children the best possible arts education and their communities with quality arts opportunities
4. Bring these groups together to develop a National Accord on Professional Practice in Arts Education

On May 6, 2013, a number of national organizations, including the State Education Agency Directors of Arts Education (SEADAE), participated in the National Arts Accord Summit and developed a statement titled *Arts Education for America's Students, a Shared Endeavor*. This statement embraced the four recommendations and stated that an education without the arts was inadequate.

Funding for the arts remains another national issue facing states, schools, and school districts, with each constantly searching for additional resources. Stevenson, Landon, and Brazell (2013) developed a white paper for the California Alliance for Arts Education designed to clarify a policy pathway regarding allowable expenditures for Title I funds on arts education. Because research in the arts demonstrates that students from low-socioeconomic backgrounds can improve achievement levels in English language arts and/or mathematics as a result of certain arts education strategies, Title I funds in California could be used for the arts without fear of reprisal as long as the strategies employed supported the Title I goals. California has spent considerable time aligning school and district practice with federal and state guidance in this regard, including evaluation of program outcomes. They also developed cohorts of schools and districts that are interested in pursuing these strategies in a more comprehensive manner. Maryland also has a history of using Title I funds to support arts education.

Maryland policies, studies and reports

Maryland has a long history of rich arts programs across the state; however, arts education in public schools is currently uneven. There are certainly numerous instances of exemplary arts education programs in Maryland, but far too often there are school systems and individual principals that have reduced and/or eliminated arts positions, funding for the arts, and instructional time. The Code of Maryland Regulations (COMAR), which is addressed in the recommendations of this task force report, outlines program requirements for the arts. The language, however, is often so nuanced that avoiding the intent of the regulation becomes quite simple.

Four studies/reports stand out in this arena which are especially worthy of mention. The first is *The Evolution of Arts in Maryland: Working in Consortium* by Mears, O'Dell, and Rotkovitz (2013). The Arts Education in Maryland Schools (AEMS) Alliance's mission has been to create equitable access to high quality arts programs for all Maryland students. Its advocacy efforts have led to policy formulation and implementation across the state. This chapter looked at the evolution of professional development in arts integration in Maryland. It included discussions of the Maryland Artist/Teacher Institute, Deans' Roundtables, the Arts Integration Institute at Towson University, and the Higher Education in the Arts Task Force (HEAT). It also described the Superintendents' Summits, the Maryland Arts Integration Network (MAIN); the Cultural Arts for Education (CAFÉ); the Arts Education Leadership Awards Luncheon; the Teaching Artist Institute; the 21st Century Institute; the Driving the Future: Creativity and Motivation in the 21st Century; the Imagination, Creativity, and Innovation Conversations; and a variety of publications. Moving forward, the existing collaborations will work on establishing a clear understanding of the intersections among elements of school reform, balancing tradition and innovation, conducting high-quality research, and facilitating transparency.

Higher education has been an integral part of the discussion of rich arts programs in Maryland as well. Sponsored by the Arts Education in Maryland Schools Alliance, the Dean's Roundtable (2009) comprised of the Deans of Education, Arts & Sciences, and Arts & Humanities met to address the preparation of teachers for 21st century teaching and learning. Through a series of roundtable discussions, "the roles, purposes, and benefits of arts education were discussed in light of their perceived relationships with other parts of the schools' curriculum and teacher preparation" (p. 1). In another article, Carroll (2011) raised some interesting questions about the preparation of arts education teachers in Maryland. She concluded that content-area expertise delivered in teacher preparation programs in Maryland were characterized by breadth but not depth.

One very important report that has emanated from Maryland has been the Economic Impact of the Arts in Maryland (2012) publication from the Maryland State Arts Council. This brochure described how the arts are an economic engine for Maryland. It claimed that the arts generated 11,434 full-time equivalent jobs in Maryland as a result of non-profit arts organizations and their audiences at the time of this report. Additionally, \$399 million in salaries were paid to those employees, with \$37.8 million in tax revenue returned to the state. There were 7.9 million people who attended arts events, classes, and workshops. Overall, there was a \$1 billion impact on Maryland's economy. Clearly, as the publication states, "Marylanders value and engage with the arts! And the arts provide many opportunities for learning and cultural enrichment free of charge" (n.p.).

Public Opinion on the Role of the Arts in Education

National studies and reports

The Arts Education Partnership and Lake Research Partners (2008) released an analysis of their findings in a national poll of likely voters. It found a new and growing constituency of voters who were extremely concerned about innovation in America. This constituency, marked by concerns about limiting public education to "basic skills", was seen as becoming more vocal about public education. The findings from this survey were consistent with the findings of the Partnership for 21st Century Skills poll and focus groups. Among the group's findings were the following:

- Almost nine in ten believed imagination was a key to innovation and student success.
- Only 19% felt that the United States was ahead of other countries in developing imagination and creativity.
- 91% indicated that the arts were essential to building the capacities of the imagination.
- 73% felt that building the capacities of the imagination was just as important as the "basics" in public education.
- 82% wanted to build imagination and creativity in public schools.

Maryland studies and reports

Public opinion in Maryland is also quite clear when it comes to the arts. The Maryland Arts Council commissioned the Maryland Statewide Survey of the Arts: Assessing the Value of Creativity in our Lives (2013). There were several findings of note:

- One quarter of Maryland adults considered themselves to be active or aspiring artists...
- Among self-described non-artists, an overwhelming 83% were engaged in various forms of artistic expression in their spare time...

- By their own assessment, six in ten residents statewide said the arts in Maryland touch their lives.
- They described profound and moving emotions when they encountered artistic expression. Their feelings were overwhelmingly positive, evocative, and personal.
- The public in Maryland placed an extremely high priority on bringing children in contact with the arts. Marylanders wanted art to be a core subject in school like science, technology, engineering, and math.
- Citizens overwhelmingly saw a role for the State in encouraging art and creativity...
- The public rated the quality and diversity of artistic expression highly. They remained positive but had some concerns about the accessibility of the Arts, particularly in the more rural parts of the State. (n.p.).

In *Why Art* (2007), the Maryland State Teachers Association, an affiliate of the National Education Association and the primary voice of teachers statewide in Maryland, described in its Action Newsletter how the arts are an integral part of a high-quality PK-12 education. They stated, “In an era of high-stakes testing, arts enrich and engage students” (n.p.). In 2011, the Maryland State Education Association voted to appoint a task force to conduct an online survey of elementary and secondary performing arts teachers and to report findings and make recommendations. The survey gleaned 236 responses, and the *Report of the MSEA Performing Arts Task Force to the MSEA Board of Directors* (2013) described inadequacies pertaining to budgets, staffing, scheduling, and facilities.

Relevant Media Coverage of Arts Education

Media articles appear regularly in support of rich arts education programs. Kisida, Green, and Bowen of the New York Times (2013) reported that the arts make a person smart. They cited the Crystal Bridges project in Arkansas that exposed children to a museum and how that experience provided them with different perspectives on life. They concluded by stating that expanding the arts should be a central part of any school’s curriculum. Glenn (2013) discussed how the arts and the Common Core are a natural fit by describing the partnership between Young Audiences Maryland, a non-profit arts education group, and the Arts Education in Maryland Schools Alliance. Students experience the Common Core in action as they engage in the arts. Grant (2013) wrote an article for the Wall Street Journal that answers the question: What does a fine arts degree get you? She suggested that maybe the answer is –a job – and provided some backup data from various authors.

Hawkins (2012) wrote for the Washington Post that less arts and music will not lead to academic success for students. Quoting Secretary of Education Arne Duncan, she wrote, “...low-income high school

students who earned few or no arts credits were five times more likely not to graduate from high school than low-income students who earned many arts credits” (p. 3). Hollander (2013) wrote an article for the Wall Street Journal stating that Stanford University was requiring all undergraduates to take two creative expression classes, which could include design, dance, music, fine arts, drama, or creative writing. She also discussed the movement to include the arts into STEM, calling it STEAM.

Strauss (2013) wrote two articles for the Washington Post. In one article she discussed the top ten skills (as reported by others) that students learn from the arts, which is similar to what has already been discussed in previous research in this Review of the Literature. She also wrote about what poor children need in school, suggesting through the works of other authors that our best schools are places where children learn about the world and begin to imagine life beyond their neighborhoods.

Best Practices

There are four documents developed by the Maryland State Department of Education that describe “better practices” in the visual arts, music, dance, and theatre. They were written by practitioners in the field from K-12 as well as higher education.

Overby, Bradley, and Tucker (Ed.), (2003) wrote the publication on dance education. They focused on teaching through dance (interdisciplinary, non-traditional dance forms, self-concept, and gender issues); dance analysis, health, and applied movement theory; teacher effectiveness; advocacy policy; and special programs (at-risk and special needs). McCarthy, Carlow, Gabriele, Moore, Woody, and Tucker (Ed.), (2003) wrote the publication on music education. They discussed learners and the learning environment; teacher effectiveness; perceiving, performing, and responding; historical, cultural, and social context; creative expression and production; and aesthetic criticism. Smith, McCarty, Strachan, Decker, Germinaro, and Tucker (Ed.) (2003), wrote the publication for theatre education. They focused on theatre and language development; the development of thinking skills; social cognition; student success; and teacher effectiveness. Carroll and Tucker (Ed.), (2003) wrote the publication on visual arts education. They described effective classroom practices on how to develop a repertoire of skills for visual perceptions and artistic response; facilitate investigation into historical, cultural, and social context; facilitate engagement in the art-making process; and facilitate critical and aesthetic inquiry.

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