

the ARTS *and* HUMAN DEVELOPMENT

FRAMING A NATIONAL RESEARCH AGENDA FOR THE ARTS,
LIFELONG LEARNING, AND INDIVIDUAL WELL-BEING



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A white paper based on "The Arts and Human Development:
Learning across the Lifespan," a convening by
the National Endowment for the Arts in partnership with
the U.S. Department of Health and Human Services,
March 14, 2011, Washington, DC

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1100 Pennsylvania Avenue, NW

Washington, DC 20506-0001

Telephone: 202-682-5400

Prepared for the NEA Office of Research & Analysis by the National Center for Creative Aging.

Lead author: Gay Hanna. Co-authors: Michael Patterson, Judy Rollins, and Andrea Sherman.

Produced by the NEA Office of Research & Analysis

Sunil Iyengar, Director

Patricia Moore Shaffer, Senior Evaluation Officer

Ellen Grantham, Program Analyst

Editorial and publication assistance by Don Ball and Rebecca Gross

Designed by Beth Schlenoff Design

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"We hope this meeting

leads to deeper collaboration in research and in identifying new ways to engage the arts to improve people's lives."

KATHLEEN SEBELIUS

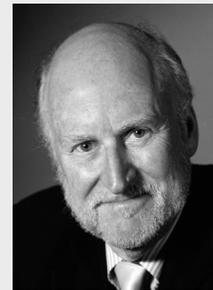
Secretary, U.S. Department of Health & Human Services

"How do the arts

help build us as a people and as individuals? We share a fundamental mission — how to improve the quality of life. The arts are central to human development."

ROCCO LANDESMAN

Chairman, the National Endowment for the Arts



From opening remarks at "The Arts and Human Development: Learning across the Lifespan," a convening by the National Endowment for the Arts in partnership with the U.S. Department of Health & Human Services, March 14, 2011, Washington, DC



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EXECUTIVE SUMMARY

OVERVIEW

Human development describes a complex web of factors affecting the health and well-being of individuals across the lifespan. Together, these factors yield cognitive and behavioral outcomes that can shape the social and economic circumstances of individuals, their levels of creativity and productivity, and overall quality of life.

Increasingly in the 21st century, U.S. policy leaders in health and education have recognized a need for strategies and interventions to address “the whole person.” They have urged a more integrated approach to policy development—one that can reach Americans at various stages of their lives, across generations, and in multiple learning contexts.

The arts are ideally suited to promote this integrated approach. In study after study, arts participation and arts education have been associated with improved cognitive, social, and behavioral outcomes in individuals *across the lifespan*: in early childhood, in adolescence and young adulthood, and in later years. The studies include:

- Neuroscience research showing strong connections between arts learning and improved cognitive development;
- Small comparison group studies revealing the arts’ contributions to school-readiness in early childhood;
- Longitudinal data analyses demonstrating positive academic and social outcomes for at-risk teenagers who receive arts education; and

- Several studies reporting improvements in cognitive function and self-reported quality of life for older adults who engage in the arts and creative activities, compared to those who do not.

This emerging body of evidence appears to support a need for greater integration of arts activities into health and educational programs for children, youth, and older adults. Yet further research is necessary so that policymakers and practitioners can understand the pathways and processes by which the arts affect human development, thereby enhancing the efficacy of arts-based practices in optimizing health and educational outcomes for Americans of all ages.

NEA-HHS COLLABORATION

On March 14, 2011, the National Endowment for the Arts (NEA) in partnership with the U.S. Department of Health and Human Services (HHS) hosted a convening in Washington, DC to showcase some of the nation’s most compelling studies and evidence-based programs that have identified cognitive, social, and behavioral outcomes from arts interventions.

HHS Secretary Kathleen Sebelius and NEA Chairman Rocco Landesman gave keynote speeches, followed by senior officials representing the HHS Administration for Children and Families (ACF) and Administration on Aging (AoA). Representatives from the National Institutes of Health (NIH) and the Health Resources and Services Administration (HRSA) also participated. The NEA Office of Research & Analysis organized the event.

Secretary Sebelius declared a mutual goal for the convening agencies: “We hope this meeting leads to deeper collaboration in research and in identifying new ways to engage the arts to improve people’s lives.” Similarly, Chairman Landesman asked: “How do the arts help build us as a people and as individuals?” The NEA and HHS, he said, “share a fundamental mission—how to improve the quality of life.”

The resulting white paper proposes a framework for long-term collaboration among the NEA, HHS, and other federal agencies to build capacity for future research and evidence-sharing about the arts’ role in human development. A worthy aim of that collaboration is to foster data-driven models for including the arts in policies and programs that seek to improve the well-being of Americans at different stages of their lives.

KEY RESEARCH FINDINGS

Studies reported at the convening and elsewhere have measured cognitive, social, and behavioral development among arts participants and arts learners. The research applies to three pivotal sections of the lifespan:

Early Childhood

- Three- to five-year-olds from low socioeconomic status (SES) families demonstrated significant gains in non-verbal IQ, numeracy, and spatial cognition after they had received music training and attention training in a small-class setting—compared to a regular Head Start control group (Neville, et al. 2008).
- Students from low-income backgrounds who attended an “arts enrichment” preschool improved in school-readiness skills, more so after two years than after one year of program attendance. Children from diverse racial and ethnic backgrounds benefited equally. In a related study by the same research team, students attending the arts enrichment preschool showed higher levels of language development (measured by “receptive vocabulary”) than did students who attended a comparison preschool (Brown, Bennett, & Armistead 2010).

- Children attending a preschool that used an arts integration model made greater developmental strides in multiple domains, including initiative, social relations, creative representation, music and movement, language, literacy, and logic and mathematics, compared to children in a regular Head Start program (Social Dynamics, LLC 2005).

Youth and Adolescence

- Arts-engaged low-income students were more likely than their non-arts-engaged peers to attend and do well in college, obtain employment, volunteer in their communities, and participate in the political process by voting. Study findings suggest that arts-engaged low-income students performed similarly to average higher-income students (Catterall 2009).
- Student behavior, measured by numbers of suspensions and discipline referrals, improved in schools involved in an arts integration initiative, as did student attendance. Student academic achievement also improved: seventh-grade students in treatment schools significantly outperformed control-group students on state standardized tests in reading and math (Pittsburgh Public Schools ca. 2008).
- Students involved in after-school activities at arts organizations demonstrated greater use of complex language than did their peers. Students who were involved in arts education for at least nine hours a week were four times more likely than their peers nationally to have won school-wide recognition for their academic achievement and three times more likely to have won an award for school attendance (Heath 1999).

Older Adults

- Older adults participating in a chorale program reported higher overall physical health, fewer doctor visits, less medication use, fewer instances of falls, and fewer health problems when compared to a control group. The chorale group also displayed evidence of higher morale and less loneliness than did the control group (Cohen, et al. 2006).

- Older adults participating in a structured theatrical intervention over four weeks significantly improved, compared to two control groups (a singing group and a no-treatment control group) in four cognitive measures: immediate word recall, problem-solving, verbal fluency, and delayed recall (Noice & Noice 2009).
- Older adults with Alzheimer’s disease and those with related dementias who participated in a creative storytelling intervention became more engaged and more alert than those in a control group. There were more frequent staff-resident interactions, peer social interactions, and social engagement in facilities using the creative storytelling intervention than in control-group facilities (Fritsch, et al. 2009).

CHALLENGES AND OPPORTUNITIES

Although these findings are promising, convening participants agreed that a collective leap forward is necessary to a) replicate, extend, and bring such studies to scale and b) share the results with researchers, practitioners, and the general public. In particular, the following challenges remain:

- *A lack of coordination* among federal agency departments and investigators and practitioners from various disciplines (e.g., arts education, child development, medicine, nursing, educational psychology, cognitive neuroscience, the behavioral and social sciences) in pursuing a vigorous research agenda to understand the role of arts and arts education in human development.
- *The small size of study populations* participating in research on the arts and human development currently limits generalizability of the results. So far, the majority of reported studies rely on correlational data, rather than results from well-controlled trials. Another limiting factor is the dearth of longitudinal studies.
- *Low visibility of research findings*, program evaluation data, and evidence-based models integrating the arts in health and educational programs provided at various segments of the lifespan.

These needs have acquired greater currency in light of recent demographic trends and domestic policy priorities. With a rising cohort of highly active baby-boomers facing retirement, opportunities for creative engagement and lifelong learning in the arts are likely to prove critical for improved health and well-being. Educators and communities, confronted with large percentages of Americans failing to finish high school, are seeking innovative and effective strategies to engage students and boost their achievement levels. In this climate, a stronger role for arts education should be investigated.

Finally, the high-order critical thinking and creativity skills that have been linked to arts training are deemed increasingly vital to today’s workforce, the U.S. economy, and our nation’s overall competitiveness. At the convening, Mary Wright, a program director with the Conference Board, asserted: “Creativity and innovation are going to increase in importance.”

Wright based her conclusion on recent industry surveys of employers’ hiring needs. The results are clear: U.S. companies stand to gain from the knowledge and skills that an arts education can provide. High demand among employers for creativity, innovation, and critical thinking will translate into positive social and economic outcomes for workers who possess those skills, thus contributing more broadly to their human development.

RECOMMENDATIONS

The moment is ripe for federal leadership in the design, conduct, and dissemination of rigorous research and evidence-based practices documenting the arts’ contributions to human development—from early childhood, adolescence, and young adulthood to middle-aged and older adults.

To support this leadership role, the following actions are recommended:

- 1. Establish a federal interagency task force** to promote the regular sharing of research and information about the arts and human development.

The task force would include high-level officials from the National Endowment for the Arts, the Department of Education, and HHS agencies such as the Administration

for Children and Families, the Administration on Aging, and the National Institutes of Health. The group would convene two to three times a year to review progress on the following tasks:

- *Host a series of webinars* highlighting examples of compelling research and evidence-based practices that have integrated the arts in human development. The webinars will be available to the public, but aimed especially at researchers and providers of the arts, health, and education for various segments of the lifespan.
- *Coordinate the distribution of information* about funding opportunities for researchers and providers of the arts, health, and education across the lifespan.
- *Conduct or commission an inventory and gap analysis* of federally sponsored research on the arts and human development so that future research opportunities can be developed by and across agencies, departments, and the private sector.
- *Develop an online clearinghouse* of research and evidence-based practices that examine or utilize the arts in health and educational programs across the lifespan.

2. Convene a series of technical workshops to help develop research proposals that represent robust and innovative study design methods to investigate the relationship between the arts and human development.

If the most competitive research proposals are to reach the appropriate funders, both public and private, then capacity-building through peer learning must occur. A series of workshops would help to improve the overall rigor of such studies, by recruiting outstanding scientists to tackle vexing and complex problems in pursuing this topic.

Because of formidable difficulties involved in mounting large-scale, longitudinal studies of the arts at work in human development—and because of the complexity of study design factors related to different age populations—it is important to bring together research methodologists and content experts in neuroscience, health, education, and the arts to advance discussion of key topics, including:

- *What are appropriate outcomes* (including quality-of-life indicators) for studies comparing arts interventions with control groups in the provision of health and/or educational services?
- *How might successful randomization be achieved* and comparison research designs developed for exploring the arts' potential impact, particularly on children and older adults?
- *How can diversity in the study populations be promoted* to ensure that findings about the arts and human development will apply toward and thus potentially benefit all groups (i.e., individuals from all ages and racial/ethnic backgrounds, including those with disabilities)?
- *How can artists and arts educators contribute fully* to the planning and conduct of research? What protocols and criteria should guide the administration of arts content and delivery?

3. Bring the arts to national and international conversations about integrating the concept of well-being into policy development.

Even while new evidence is being gathered, the federal partnership should leverage growing national and international interest in using measures of subjective well-being as complementary and valuable tools to guide policy decisions. This discussion is highly consistent with the HHS strategic goal—“Advance the health, safety, and well-being of the American people.” At the same time, greater analysis of the arts in direct relationship to well-being will provide the NEA with an opportunity to realize one of its own strategic goals for the American people—“Promote public knowledge and understanding about the contributions of the arts.”

This recommendation also aligns with two National Institute on Aging-sponsored efforts to advance the measurement of subjective well-being for application to research on aging and health. Those efforts include:

- Development of a National Research Council panel on “measuring subjective well-being in a policy-relevant framework.” This initiative, co-sponsored by the UK Economic and Social Research Council, was singled out by the White House in a May 25, 2011, joint

fact sheet as having “the potential to generate new insights that will directly inform social and economic policies.”

- A series of National Academies workshops that will conclude in September 2012 with recommendations on the “evaluation of measures of subjective well-being and development of OECD (Organisation for Economic Co-operation and Development) guidance for national statistical agencies on the measurement of well-being.” The workshops should be monitored for their potential applicability to future federal data collection about the arts’ role in human development.

Ultimately, it may surprise no one to discover that arts and arts education have strong positive effects on wellness and quality of life. Throughout human history, in virtually all cultures, the arts have been viewed as a hallmark of civilization—so why not of health and human development?

Yet one thing is certain: without vigorous and extensive research and evidence-sharing among government agencies, scientists, practitioners, and the general public, our nation will continue to lack effective, replicable models for using the arts to improve quality-of-life outcomes. The resulting deficiency represents a substantial loss for arts, health, and education providers serving Americans at all stages of life. The NEA-HHS partnership, through this white paper, endorses the timeliness and potential cost-effectiveness of the proposed collaborations and research endeavors.

INTRODUCTION

Increasingly in the 21st century, U.S. policy leaders in health and education have recognized a need for strategies and interventions to address the development of the “whole person.” They have urged a more integrated approach to policy development—one that can reach Americans at various stages of their lives, across generations, and in multiple learning contexts. The recent surge of interest in measurements of happiness and subjective well-being also reflects a growing desire to assess multiple dimensions of human development.¹

Participation in the arts and arts learning has long been believed to support the development of human potential. Harvard psychologist Howard Gardner, in his 1983 book, *Frames of Mind*, proposed that we as individuals have multiple intelligences. These ways of knowing are influenced by a preferred sensory modality: one person may learn and develop better through listening or auditory experiences, whereas another may need to learn kinesthetically or visually or use multimodal learning. Involvement in the arts and arts learning increases an individual’s exposure to multiple ways of experiencing the world, and, in so doing, increases the potential for human development.

Over the past two decades, landmark studies have associated arts participation and arts education with cognitive, social, and behavioral advantages in individuals across the lifespan: in early childhood, in adolescence and young adulthood, and in later years. For example, some studies have linked the arts to school-readiness, academic achievement, and lower risks of juvenile delinquency. Other studies, concerning the latter part of life, have shown that arts engagement and arts learning

have the potential to reduce the need for medication, reduce falls by improving gait and balance, and improve brain fitness. A sample of these studies are summarized in the chapters that follow.

Until quite recently, it was not clearly understood how the arts contribute to these outcomes. Research in the field of cognitive neuroscience has begun to make significant strides in this area. In his keynote address at the March 14, 2011, NEA-HHS event, Dr. Michael Gazzaniga, a nationally renowned cognitive neuroscientist, recounted the significant Dana Foundation-supported *Learning, Arts, and the Brain* research initiative. The effort united cognitive neuroscientists from seven universities across North America “to grapple with the question of why arts training has been associated with higher academic performance.”² One critical mechanism that might explain enhanced cognition, he said, is exercise of the brain’s attentional network:

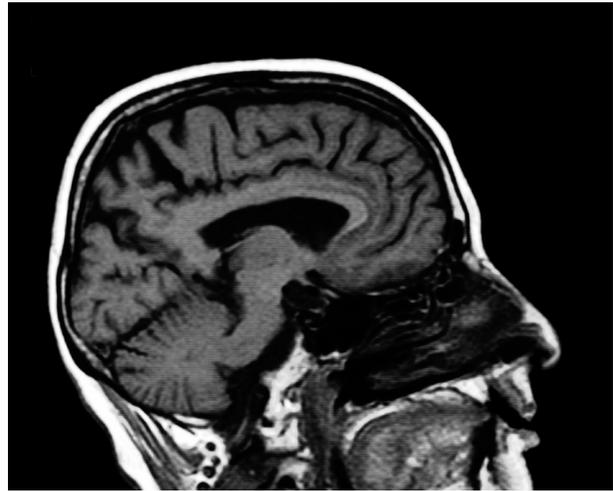
We know that the brain has a system of neuro-pathways dedicated for attention.... We know that training these attention networks improves general measures of intelligence. We can be fairly sure that focusing our attention on learning and performing an art, if we practice frequently and are truly engaged, activates these same attentional networks. We, therefore, would expect focused training in the arts to improve cognition generally.³

The findings from *Learning, Arts, and the Brain* illustrate Gazzaniga’s expression of the relationship between arts learning and improved cognitive outcomes. In assessing this relationship with respect to music and mathematical

ability, one study found that intensive music training for children and adolescents is associated with an improved ability to represent abstract geometry.⁴ These findings expand on earlier studies showing that music training enhanced preschool children's spatial-temporal reasoning.⁵ In other research generated by the Dana Foundation initiative, involvement in arts training was associated with greater ability to focus attention.⁶

In study after study presented during the NEA-HHS convening and elsewhere, arts participation and arts education have been linked with cognitive, social, and behavioral outcomes in individuals across the lifespan. This growing body of evidence, presented in the chapters that follow, applies to three pivotal segments: early childhood, youth and adolescents, and older adults. Still, as detailed in this report, there are considerable gaps in our knowledge about the particular pathways and processes by which the arts affect human development. Are such benefits unique to the arts, for example, or are they more strongly associated with other factors or interventions? Only through further research will policymakers and practitioners acquire the ability to enhance the efficacy of arts-based practices in optimizing health and educational outcomes for Americans of all ages.

Cultivating Creativity



Cognitive neuroscience research has informed our understanding of the role of arts education in cultivating creativity. In a study published in 2008, Ansari and Berkowitz used functional magnetic resonance imaging (fMRI) to examine musical improvisation in university-level music majors.⁷ Participants played melodies—both rehearsed and improvised—on a fiber-optic keyboard. The study found that during improvisation, the highly trained music majors used their brains in a way the non-musicians could not: they deactivated their right-temporoparietal junction. Music majors were able to block all distractions, allowing them to concentrate to a greater degree and create music spontaneously. The study findings demonstrate a positive relationship between music training and improvisational ability, suggesting, as experimental psychologist James Kaufman has asserted, that “creativity can be taught”.⁸

NOTES

¹ See, for instance, the announcement of the involvement of the United Kingdom's Economic and Social Research Council in partnership with the National Institute on Aging at the National Institutes of Health in the development of a U.S. National Research Council Panel on measuring subjective well-being in a policy-relevant framework: <http://www.whitehouse.gov/the-press-office/2011/05/25/joint-fact-sheet-us-uk-higher-education-science-and-innovation-collabora>.

² Michael Gazzaniga, "Arts and Cognition: Finding Hints in Relationships," in *Learning, Arts, and the Brain*, eds. Carolyn Asbury and Barbara Rich, v.

³ Michael S. Gazzaniga, "Music, Science and the Art of Living." Panel discussion at "The Arts and Human Development: Learning across the Lifespan," a convening by the National Endowment for the Arts in partnership with the U.S. Department of Health & Human Services, Washington, DC, March 2011.

⁴ Elizabeth Spelke, "Effects of Music Instruction on Developing Cognitive Systems at the Foundations of Mathematics and Science," in *Learning, Arts, and the Brain*, eds. Carolyn Asbury and Barbara Rich, 17–49.

⁵ Frances H. Rauscher, G.L. Shaw, L.J. Levine, E.L. Wright, W.R. Dennis, and R.L. Newcomb, "Music Training Causes Long-Term Enhancement of Preschool Children's Spatial-Temporal Reasoning," *Neurological Research*, 19 (1997): 2–8.

⁶ Helen Neville, et al., "Effects of Music Training on Brain and Cognitive Development in Under-Privileged 3- to 5-Year-Old Children: Preliminary Results," in *Learning, Arts, and the Brain*, eds. Carolyn Asbury and Barbara Rich, 105–116.

⁷ Aaron L. Berkowitz and Daniel Ansari, "Generation of novel motor sequences: The neural correlates of musical improvisation," *NeuroImage* 41(2) (2008): 535–543.

⁸ Po Bronson and Ashley Merryman, "The Creativity Crisis," *Newsweek*, July 10, 2010, accessed August 8, 2011, <http://www.thedailybeast.com/newsweek/2010/07/10/the-creativity-crisis.html>.

chapter 2

THE ARTS IN EARLY CHILDHOOD

The growth of the human brain during early childhood is remarkable. By age three, a child's brain is 90 percent of its adult size.¹ In these early years, young children reach developmental milestones that include emotional regulation and attachment, language development, and motor skills. When a young child experiences environmental stressors and other negative risk factors, all of the milestones can be significantly delayed and may seriously compromise the child's growth and development.

Of Erik Erikson's three major stages of child development (early childhood, middle childhood, and adolescence), early childhood is increasingly recognized as providing the foundation for lifelong health, learning, and well-being.² Usually defined as birth to year eight, early childhood is not only a time of tremendous physical, cognitive, and social-emotional development—it also strongly influences school-readiness and later success in life.³

Traditionally, the arts have been an important part of early-childhood programs. Friedrich Froebel, who developed the concept of kindergarten, believed that young children should be involved both in making their own art and enjoying the art of others. To Froebel, art activities were important not because they allowed teachers to recognize children with unusual abilities, but because they encouraged each child's "full, all-round development."⁴

Today, although most scholars and practitioners agree that arts education enhances artistic skills and development of the "whole child,"⁵ others propose that it contributes to the development of specific skills and

behaviors.⁶ Mounting evidence suggests that the arts prime or stimulate specific cognitive skills.⁷ Music instruction, for example, seems to develop specific spatial-temporal skills.⁸ Other research indicates that the arts may advance children's school-readiness.⁹

Evidence also suggests that the arts can improve learning for children most at risk for poor educational outcomes. At the same time, research about the benefits of the arts in other important areas, such as helping children cope with normative stressors and those associated with illness, injury, disability, and healthcare experiences, is relatively scarce.

Despite these promising avenues for research, we still need to understand more about the basic pathways through which the arts may effect changes in cognitive development and school-readiness. Are the arts themselves—for example, music, visual arts, and drama—integral to those benefits, or do other factors such as small classroom size and intense adult attention play a greater role in achieving such outcomes?

EVIDENCE-BASED CLAIMS

The following studies exemplify the state of current evidence supporting the benefits of art and arts education for young children.

1. Rauscher, et al. (1997): The authors described the results of a study involving 78 children who were enrolled in preschool classes. The children were assigned to one of four groups: private piano keyboard lessons and casual singing, casual daily singing, private computer

SPOTLIGHT ON PRACTICE

Settlement Music School



The Settlement Music School's Kaleidoscope Preschool Arts Enrichment Program, which serves as a Philadelphia Head Start site, operates from 8:45 a.m. to 3:00 p.m. each day, five days a week, 40 weeks a year. The daily schedule includes early-learning classes found in a typical Head Start program as well as arts classes in music, dance, or creative movement, and visual arts classes taught by fully credentialed artist teachers in separate artist studios. The classes are designed to foster development of artistic skills and skills in core cognitive domains that represent traditional early-learning content areas of math, science, language, literacy, and social and cultural awareness. Instruction is centered on early-learning themes. For example, if the theme is shapes, then children might label shapes in their early-learning class, choose musical instruments of different shapes, draw shapes in a visual arts class, or make shapes with their bodies through dance or creative movement.

lessons, and no lessons. Keyboard and computer lessons were matched in frequency and duration. The children received pre- and post-tests for spatial-temporal reasoning and spatial recognition skills.

Results of the study showed that children who participated in the keyboard classes improved significantly on spatial-temporal reasoning while children in the other three groups did not. The magnitude of the spatial-temporal improvement from keyboard training was greater than one standard deviation of the standardized test. However, no significant score improvement was found in spatial recognition for any of the groups.

2. Social Dynamics, LLC (2005): This evaluation study measured the effectiveness and quality of Fairfax Pages, a teacher-residency program administered by Vienna, Virginia-based Wolf Trap Institute for Early Learning through the Arts. The impact evaluation portion of this study was designed to assess whether the program resulted in teacher adoption of Wolf Trap's approach to integration of performing arts-based learning experiences with existing preschool curricula. The impact evaluation also included a quasi-experimental comparison group study, which measured the developmental progress of children between baseline (September 2004) and follow-up (June 2005) observations.

The observational instrument—the Preschool Child Observation Record—measured young children's knowledge and abilities in six domains: Initiative, Social Relations, Creative Representation, Music and Movement, Language and Literacy, and Logic and Mathematics. Statistically significant differences between the treatment and comparison-group children's scores in all six domains favored the treatment group. There were also statistically significant differences favoring the treatment group in the other five domains of knowledge and ability.

3. Neville, et al. (2008): For an article that appeared in *Learning, Arts, and the Brain: The Dana Consortium Report of Arts and Cognition*, Helen Neville and her colleagues examined the effects of music training on brain and cognitive development in 88 children enrolled in Head Start preschools. The children were three to five years old and from low socioeconomic status (SES) backgrounds. They were assigned to either a small group

that focused on music activities, such as listening to, moving to, and making music, as well as singing; or to one of three control groups. The first two control groups were either a large or small class where students received regular Head Start instruction. The third control group was a small class in which children received training in focusing attention and becoming more aware of details.

Children in each of the four groups were tested prior to and after participation in the eight-week classes on a wide variety of measures, including language fundamentals, vocabulary, letter identification, IQ, spatial cognition, and developmental numeracy. Results showed that children who received music training and those with attention training showed strong and significant improvements in non-verbal IQ, numeracy, and spatial cognition. Children enrolled in the small Head Start class also displayed large improvements on the same measures. These improvements were not seen in children who received regular Head Start instruction in the large-class control group. The authors concluded that increased time in a small group with intense adult attention, including attention focused through music training, may produce improvements in young children's cognitive abilities.

4. Brown, Benedett, and Armistead (2010): In *Early Childhood Research Quarterly*, Eleanor Brown and her colleagues reported results from two studies. Study 1 used a quasi-experimental design to compare end-of-attendance achievement for children with one year versus two years of program attendance in an arts enrichment program. Students practiced school-readiness skills through early learning, music, creative movement, and visual arts classes. Study 2 compared the arts enrichment program to another high-quality preschool program on an outcome measure of "receptive vocabulary," which is predictive of school success and general intelligence.

Results from Study 1 found that students who attended the preschool for two years demonstrated higher achievement than those who attended for one year, suggesting that the program dosage matters. Among all race/ethnicity and developmental-level groups, students improved in school-readiness skills. Study 2 found that students attending the arts program had higher

receptive vocabulary scores than did children at the comparison school.

LOOKING TO THE FUTURE

Research suggests that the arts can boost learning in young children, improve their cognitive skills, and help young children facing the greatest risks of poor educational outcomes. Still, rigorous research about the benefits of the arts in other important areas is critically needed.

- *Gap:* Research should investigate the role of the arts in helping young children to cope with normative stressors and those that result from illness, injury, disability, and healthcare experiences.

The current evidence suggests that young children who have the opportunity to learn and participate in the arts develop critical thinking and metacognitive skills and can learn to think creatively. Furthermore, there is a fundamental assumption that this type of arts engagement promotes changes in the brain, which, in turn, support creative thinking and creative expression.

- *Gap:* Research and evaluation is needed to determine how engagement in arts and arts training shapes the neurological structure and function of young minds.
- *Gap:* Further research into creative processes and activities is needed to better understand the emerging neurological substrates of creative thinking. What supports highly creative brain functioning? How can environmental influences such as arts engagement shape the creative functioning of the brain, and serve as the basis for integrating the arts more effectively in early education programs and lifelong learning?

Most studies about the effects of arts education are short-term, with small sample sizes, and they use a variety of assessment methods. In the future, such research will benefit from implementing stronger study designs, including larger and more diverse study samples, and using standardized measures across a broad array of domains of children's competence.

- *Gap:* There is a need to fund longitudinal studies that track children into school and even adulthood to determine how early arts interventions may contribute to later life outcomes; there is also a need to develop standardized tools that better measure the effects of arts education and arts experiences.
- *Gap:* Procedures should be developed to help educators integrate the new research findings into their program design and instructional activities, and to help educators monitor the development of young children’s creativity.

NOTES

¹ Child Welfare Information Gateway, *Understanding the Effects of Maltreatment on Brain Development*, issue brief, accessed August 16, 2011, http://www.childwelfare.gov/pubs/issue_briefs/brain_development/how.cfm.

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⁴ Jessie White, *The Educational Ideas of Froebel* (London: University Tutorial Press, 1907), 61, accessed August 8, 2011. <http://core.roehampton.ac.uk/digital/froarc/whited/>

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⁸ Lois Hetland, “Learning to Make Music Enhances Spatial Reasoning,” *Journal of Aesthetic Education*, 34, no. 3/4 (2000): 179–238.

⁹ Cybele C. Raver and Jane Knitzer, *Ready to Enter: What Research Tells Policymakers About Strategies to Promote Social and Emotional School Readiness Among Three and Four-Year-Old Children* (New York: National Center for Children in Poverty, Mailman School of Public Health, Columbia University, 2002).

chapter 3

THE ARTS IN YOUTH AND ADOLESCENCE

Adolescence represents a critical transition period that includes profound biological changes associated with puberty as well as important developmental changes such as the need to explore normative behavior and to establish increased levels of independence. Teenagers are preparing to assume greater levels of responsibility, including entering the workforce and considering building families. Their preparedness for these adult responsibilities (or lack thereof) will have a profound effect on their own happiness and well-being, and on their ability to contribute in significant ways to the vitality and stability of the larger society.

Teenagers are acutely sensitive to environmental influences. Factors such as family, peer group, school, neighborhood, policies, and societal cues can either support or challenge a teen's health and well-being. Promoting the adolescent's positive development will facilitate the adoption of healthy behaviors and help to ensure a healthy and productive future population.¹

Research reveals that arts learning experiences can alter the attitudes of young people toward themselves and each other. Students involved in sustained theater arts (e.g., scene study, acting techniques, dramatic or musical theater production) show gains not only in reading proficiency, but also in self-control, motivation, and empathy and tolerance for others. An arts experience can promote shared purpose and the team spirit required, for example, to perform in an ensemble music group or to design and paint a community mural.

EVIDENCE-BASED CLAIMS

The following studies exemplify the state of current evidence supporting the benefits of art and arts education for adolescents and young adults.

Arts education, academic success, and life skills

1. Catterall, Chapleau, and Iwanaga (1999): In an article that appeared in *Champions of Change: The Impact of Arts on Arts Learning*, a publication cosponsored by the Arts Education Partnership and the President's Committee on the Arts and the Humanities, Catterall presented an analysis of data from the U.S. Department of Education's National Educational Longitudinal Survey (NELS). The study aimed at identifying relationships between arts involvement and academic performance. The researchers found that although the probability of having more arts experiences in school was greater for economically advantaged students, students with high involvement in the arts, including racial/ethnic minority and low-income groups, performed better in school and stayed in school longer than students with low arts involvement.

Some of the key differences the researchers found for math proficiency were between students highly involved in the arts and non-arts-involved students. The overall probability of scoring high in mathematics among all 12th grade students was about 21 percent. The researchers found that all students in the high socioeconomic status (SES) quartile did better than the average student, with over 38 percent scoring high in mathematics. However, high-SES students concentrating in

instrumental music did substantially better than those with no involvement in music, with 48 percent scoring high. Of note, over 33 percent of low-SES students with high involvement in music scored high in mathematics—far better than the average student. Over the school years, the relative advantage of arts-involved, low-SES students also increased.

2. Winner and Hetland (2002): Harvard’s Project Reap (Reviewing Education and the Arts Project) conducted a comprehensive meta-analytic review of studies (1950–1999) to test the claim that arts learning causes some form of academic improvement. The research team noted that the quest for instrumental value in arts programs (i.e., that engagement in arts programs improves performance in other academic areas) is a double-edged sword. “It is implausible,” wrote the authors, “to suppose that the arts can be as effective a means of teaching an academic subject as is direct teaching of that subject.”

The REAP review did, however, find a number of areas suggesting causal links between arts training and improvement in other academic areas, including:

- *Classroom Drama and Verbal Skills*—Based on 80 research reports, a causal link was found between enacting drama texts and a variety of verbal areas, including oral understanding, recall of stories, reading readiness, reading achievement, oral language, and writing. Written understanding/recall of stories showed especially robust results.
- *Learning to Play Music and Spatial Reasoning*—Based on 19 reports, a “large” causal relationship was found between learning to make music and acquiring spatial-temporal reasoning skills. The effect was greater when standard music notation was learned as well.
- *Listening to Music and Spatial-Temporal Reasoning*—Based on 26 reports, a “medium”-sized causal relationship was found between listening to music and temporary improvement in spatial-temporal reasoning.
- *Dance and Visual-Spatial Skills*—Based on three research reports, a “small” to medium-sized causal relationship was found between dance and improved visual-spatial skills.

3. Catterall (2009): As a follow-up to his 1999 analysis of the U.S. Department of Education’s National Educational Longitudinal Survey (NELS: 88) results, James Catterall again mined the database for arts-specific information and reported the findings in his book *Doing Well and Doing Good by Doing Art: A 12-year Longitudinal Study of Arts Education—Effects on the Achievements and Values of Young Adults*.

The NELS: 88 study tracked 25,000 secondary school students over four years and found significant connections between high involvement in the arts and general academic success. In 2009, Catterall analyzed ten additional years of data for the same cohort of students (then age 26). The study provided important empirical evidence of the role arts education can play in preparing young people for success in school and in their life beyond school years.

The study found the persistence of strong connections between arts learning from the earlier years and overall academic success and pro-social outcomes. Not only did the advantages in performance of the arts-involved students relative to other students increase over time, the arts-engaged low-income students were more likely than their non-arts-engaged peers to have attended and done well in college, obtained employment, volunteered in their communities, and participated in the political process by voting. Findings suggest that the arts’ role in developing competency may be especially important for students who otherwise feel isolated or excluded.

4. Pittsburgh Public Schools (2009): The subject of this evaluation study was the Greater Arts Integration Initiative (GAIN), a collaboration between the School District of Pittsburgh and the Manchester Craftsmen’s Guild (MCG) to integrate visual arts into the curriculum for grades six through eight at Faison Academy Intermediate School. GAIN received support from the U.S. Department of Education’s Arts Education Model Development & Dissemination grants program.

MCG artists worked with teachers to develop and implement arts-integrated lessons for Communications, Math, World Cultures, and Science classes. Professional development workshops helped teachers become more familiar with arts-integration techniques in the classroom. In addition, a designated behavior specialist

coached teachers on classroom management strategies. In the second year of the grant, MCG placed permanent artists in the school to work with teachers on arts-integrated project designs and implementation.

GAIN used a quasi-experimental design with a matched-control school for comparison. The study found that student behavior, measured by lower numbers of suspensions and discipline referrals, improved in schools involved in GAIN, as did student attendance. Students' academic achievement also improved: seventh-grade students in treatment schools significantly outperformed control-group students on the Pennsylvania State Standard Assessment (PSSA) in Reading and Math, with 23.6 percent and 20.8 percent achieving proficiency or above on each section respectively, compared to 11.8 percent of the control group for each section.

5. Israel (2009): This study examined the relationship between school-based arts education and high school graduation rates in New York City public schools. The study used data from the New York City Department of Education's "Annual Arts in Schools" reports in addition to graduation rate data. The analysis included a total of 189 New York City high schools from the 2006-07 school year and 239 from the 2007-08 school year.

The study found that schools in the top third of graduation rates offered their students the most access to arts education and the most resources that support arts education. Schools in the bottom third of graduation rates consistently offered the least access and fewest resources. This pattern held true for nine key indicators that convey a school's commitment to arts education: the presence in these schools of certified arts teachers, dedicated arts classrooms, appropriately equipped arts classrooms, arts and cultural partnerships, coursework in the arts, access to a multi-year arts sequence, school sponsorship of student arts participation, school sponsorship of arts field trips, and availability of external funds to support the arts.

Additional evidence is found in the Arts Education Partnership's second compilation of research, *Critical Links: Learning in the Arts and Student Academic and Social Development*. This publication summarized findings from 62 studies. Across five arts disciplines—dance,

SPOTLIGHT ON PRACTICE

Chicago Arts Partnerships in Education



In 1992, Chicago's arts and education leaders decided that if they worked together, more progress could be made on providing the city's children with access to arts education. They formed the Chicago Arts Partnerships in Education (CAPE), a partnership involving about 50 artists and arts organizations and 120 Chicago public schools. Teachers, parents, principals, artists, and arts organizations develop long-term partnerships to co-develop new solutions to enduring problems in schools and communities. These alliances serve as a living laboratory for a community of artists and teachers dedicated to infusing arts throughout the curriculum, and for a community of researchers dedicated to understanding how teaching through the arts improves student achievement. CAPE has been replicated in other cities across the United States, Canada, and England.

drama, multi-arts, music, and visual arts—the studies made claims for a variety of learning that occurred in other domains.

Arts education in out-of-school settings

6. Heath (1999): This decade-long, mixed-methods study examined the daily operations of 124 youth-based organizations across the United States. Shirley Brice Heath and her team observed events ranging from program planning to evaluation. They made audio recordings of adults and young members engaging in practice, critique sessions, and celebrations. Teams of young people were also trained as ethnographers, interviewing local residents and youth not involved with youth-based organizations and supervising other young people's participation in daily logs and journals. In 1994, a sample of youth organization members responded to the U.S. Department of Education's National Education Longitudinal Survey, which allowed comparison to a national sample of high school students.

Among the findings associated with this study, Heath observed that the learning environments of arts organizations were somewhat different than those of community service or sports organizations. Students involved in after-school activities at arts organizations demonstrated greater use of complex language than might have been obtained in English or Social Studies classrooms. Heath arrived at this conclusion by comparing language that theater groups used to classroom language available in published materials. Students who were involved in arts education for at least nine hours a week were also four times more likely than their peers nationally to have won school-wide recognition for their academic achievement and three times more likely to have won an award for school attendance.

7. Larson, Hansen, and Moneta (2006): Published in *Developmental Psychology*, this article inventoried the types of developmental and self-reported negative experiences that youth encountered in different categories of extracurricular and community-based organized activities. The study's goal was to identify the average profile associated with each category. The researchers also sought to compare experiences in these activities with three other major activities in the lives of youth (school classes, leisure with friends, early job

experiences) to gauge the opportunities presented by organized activities in relation to meaningful benchmarks. A representative sample of 2,280 11th-graders from 19 diverse high schools responded to a computer-administered protocol.

Students in arts activities reported significantly higher rates of experiences related to personal initiative compared to other students, but also reported lower rates for certain other experiences. Of note, the arts students reported significantly higher rates of experiences involving identity exploration, compared to other students.

8. Shernoff and Vandell (2007): This study compared the experiences of 165 middle school students at eight after-school programs that offered a variety of activities. David Jordan Shernoff and colleagues sought to discover the average levels of subjective experience measures (i.e., intrinsic motivation, concentrated effort, positive and negative mood states, and engagement) during selected activities in the after-school programs. A total of 1,596 experiences were randomly sampled using the Experience Sampling Method (ESM), which linked activities and social partners with momentary fluctuations in participants' cognitive and emotional states.

Study findings revealed high levels of engagement while participating in arts enrichment activities (e.g., dance, drama, visual arts, music). Students reported significantly higher intrinsic motivation, concentrated effort, and engagement, and lower apathy when participating in the arts, compared to being engaged in other activities. The researchers concluded that the positive experience of youth during arts enrichment activities—both in terms of intrinsic motivation and concentrated effort (a combination characteristic of positive youth engagement and development)—provides additional justification to expand research on the arts.

LOOKING TO THE FUTURE

Youth are moving from a role as receivers of culture to creators of culture. In a 21st-century learning environment, children increasingly must know how to deal with massive amounts of information, communicate globally, and organize more of their own learning. In today's global economy, moreover, creativity and innovation are essential.

- *Gap*: Research on how new technologies affect the minds and creativity of young learners, both positively and negatively, is critical. What happens to adolescent brains when exposed to massive amounts of information?
- *Gap*: Can engagement in arts programs help adolescents gain critical thinking and metacognitive skills that will help them organize their own learning and function within the new environment of global communications?

Evidence suggests that arts education programs can have a beneficial effect on school climates, helping motivate adolescents to stay in school and often triggering their interest in other subjects.

- *Gap*: Further research is needed to pinpoint what types of arts programs are most effective in promoting academic success and pro-social behavior in adolescents.

NOTES

¹ Clea McNeely and Jayne Blanchard, *The Teen Years Explained: A Guide to Healthy Adolescent Development* (Baltimore: Johns Hopkins Bloomberg School of Public Health, Center for Adolescent Health, 2009).

THE ARTS AND OLDER ADULTS

The geriatric landscape is shifting—due, in part, to two of the most significant global phenomena of the 21st century: widespread population aging and the rapid diffusion of technology. With regard to aging, the oldest baby-boomers turn 65 in 2011. And, between 2005 and 2030, the number of adults aged 65 and older will virtually double—from 37 million to 72 million.¹

Additionally, the number of older adults with chronic disease is on the rise. Eight out of ten older adults have one or more chronic diseases that will require coordinated and compassionate care.² Confronted with growing numbers of Americans who have chronic disease or dementia, U.S. policymakers, health practitioners, and the public must direct greater emphasis on finding solutions to long-term care and care-giving issues.³ In tough fiscal times, moreover, those solutions will require highly cost-effective strategies.

As the geriatric landscape shifts to accommodate older adults, customized technology will continue to be developed in response to the challenges of aging. These opportunities likely will include new approaches to foster community-based care, health-related assessment, safety-monitoring, connectivity, lifelong learning, legacy-leaving, and adaptive environments. As the research below suggests, the arts can complement these approaches in helping to improve the quality of life for older adults.

EVIDENCE-BASED CLAIMS

The following studies exemplify the state of current evidence supporting the benefits of art and arts education for older adults.

Arts participation: optimizing health outcomes

1. Cohen, et al. (2006): In a study co-funded by the NEA and the National Institute of Mental Health and other sponsors, Gene Cohen measured the impact of professionally conducted cultural programs on the physical health, mental health, and social functioning of older adults. Participants were 166 healthy, ambulatory, older adults from the Washington, DC area (average age: 80), who were assigned randomly either to an intervention (chorale) or comparison group (control; usual activity) and assessed at baseline and after 12 months.

Results showed positive findings of the intervention's effectiveness. The intervention group reported higher overall physical health, fewer doctor visits, less medication use, fewer instances of falls, and fewer health problems when compared to the comparison group. The intervention group also evidenced better morale and less loneliness than the comparison group. Similarly, the comparison group had a significant decline in total number of activities, whereas the intervention group reported a trend toward increased activity.

2. Houston, et al. (2011): Storytelling is emerging as a powerful tool for health promotion in vulnerable populations. For this article, which appeared in the *Annals of Internal Medicine*, Thomas Houston and colleagues

performed a study to test an interactive storytelling intervention to improve blood-pressure control among African Americans. The researchers conducted a randomized, controlled trial in which 230 patients received a series of three storytelling DVDs that were delivered at baseline, three months, and six months. All of the participants had physician-diagnosed hypertension. Adults in the intervention group received the DVDs that contained the patient stories, while adults in the comparison group received an attention-control DVD covering health topics not related to hypertension.

The storytelling intervention produced substantial and significant improvements in blood pressure control for patients with baseline uncontrolled hypertension. The research suggests that storytelling is an intervention that can be used to deliver health-promotion information, particularly to vulnerable populations, and that it may be adaptable to other chronic conditions besides hypertension.

Arts participation: creativity, cognition, and aging

3. Noice, Noice, and Staines (2004): The research duo of Helga and Tony Noice investigated the effects of theatrical training on cognitive function and quality of life by using theater. Cognitive function and mental health were assessed via tests of word recall, listening tasks, problem-solving, and measures of self-esteem and psychological well-being. As reported in the *Journal of Aging and Health*, results revealed that the theater group scored significantly higher than both control groups on recall and problem-solving as well as on psychological well-being. Follow-up testing at four months after the intervention—to determine if the efforts were sustained in the theater-intervention group—revealed significant increases in word recall scores, and no significant decline in mental health measures.

4. Hackney, Kantorovich, and Earhart (2007): People with Parkinson's disease (PD) have difficulty turning while walking; turning can trigger freezing of gait. Madeline Hackney and colleagues evaluated whether the functional mobility benefits noted in older adults who had participated in a tango-dancing program might extend to adults with Parkinson's disease. Thirty-eight subjects were assigned either to a control (exercise) group or tango group in which ten one-hour-long exercise or tango classes were completed in 13 weeks.

These adults were assessed prior to training and after the ten sessions. All completed the Modified Falls Efficacy Scale, the Activities-Specific Balanced Confidence scale, and the 17-item Philadelphia Geriatric Center Morale Scale. Balance was evaluated using the functional reach and one-leg stance test. Walking velocity measurement sessions were videotaped and analyzed.

Only the PD tango group improved on all measures of balance, falls, and gait. The findings revealed that tango is an effective and feasible modality for improving mental function and balance. The study also lays the groundwork for further exploration into special features of dance and expressive movement done to a rhythmical pulse to gain functional mobility.

5. Noice and Noice (2009): In a follow-up to their 2004 study, Helga and Tony Noice sought to replicate their 2004 results with an at-risk population. Pre- and post-tests of cognitive ability were given to the experimental/intervention theater group and to two control groups (a singing group and a no-treatment control group); 122 adults participated. The theater intervention group engaged in eight sessions held twice a week for four weeks.

Findings showed that the theater group had significant improvements compared to the two control groups in four of the five cognitive measures: immediate word recall, problem-solving, verbal fluency, and delayed recall. Noice and Noice suggest that the multimodal nature of theatrical engagement, which engages physical, cognitive, and psychosocial faculties, contributes to the positive effects of the intervention.

Imagination and art processes: Alzheimer's disease and dementia

6. Fritsch, et al. (2009): As Alzheimer's disease (AD) progresses, memory and language fade, but other parts of the mind sometimes spring to life, such as those touched by art. Thomas Fritsch and colleagues investigated the impact of a ten-week TimeSlips (TS) storytelling intervention on quality of care for persons with dementia residing in long-term-care facilities. The TimeSlips program encourages people with AD and related dementias to express themselves creatively through group-generated stories without relying on

SPOTLIGHT ON PRACTICE

Alzheimer's Poetry Project



Founded in 2004 in Santa Fe, New Mexico, the Alzheimer's Poetry Project (APP) has a mission to enhance the quality of life for people with Alzheimer's disease, along with their families and professional healthcare workers. APP has held 300 programming sessions at 75 facilities in Arizona, Arkansas, California, Colorado, Connecticut, Georgia, New Jersey, New Mexico, New York, Pennsylvania, Oklahoma, Texas, Virginia, and Washington, DC, serving more than 9,500 people living with Alzheimer's disease. APP also has led staff training for over 800 healthcare workers and family members in using poetry in adults with dementia. The National Endowment for the Arts supported a recent project in which poet Jimmy Santiago Baca trained local artists to facilitate poetry workshops, conducted in both Spanish and English, for individuals who have Alzheimer's disease. A culminating event, held at the National Hispanic Cultural Center, will include readings of poems created by the patients.

failing memories. Participants are asked open-ended questions about a dramatic picture, and responses are recorded, woven into a story, and read back to the group.

Results indicated that those in the TS facilities were more engaged and more alert. There were more frequent staff-resident interactions, social interactions, and social engagement in TS facilities than in non-TS facilities. Staff in TS communities developed more positive views of people with dementia and devalued residents less than the control group did. There were no differences in job satisfaction.

7. Philips, Reid-Arndt, and Pak (2010): In a second TimeSlips study, Lorraine Philips and her research team tested the effectiveness of TimeSlips on communication, neuropsychiatric symptoms, and quality of life in long-term care residents with dementia. A quasi-experimental study design was used to compare persons with dementia in the TS intervention group with those in the usual-care group. Both groups met twice weekly for six weeks, and were tested at baseline and post-intervention at weeks seven and ten. Participants received the Cornell Scale for Depression in Dementia, the Neuropsychiatry Inventory-Nursing Home Version, the Functional Assessment of Communication Skills, the Quality of Life-Alzheimer's Disease Assessment, and the Observed Emotion Rating Scale.

TimeSlips participants showed a heightened degree of pleasure and improved communication skills—effects that persisted at week seven. Celebration and play are part of the interactions in TS programs; adults who took part in TimeSlips were active participants, rather than passive recipients.

8. Rosenberg, et al. (2009): An evidence-based, nine-month study to gauge the effect of the "Meet Me at the MOMA" program was designed for people in early stages of dementia and their family caregivers. The intervention consisted of eight adults with dementia and their respective family member (usually the main caregiver). Led by a trained art educator, the tour presented art in a predetermined sequence, lasting 1.5 hours, and devoting 15–20 minutes to each artwork. Researchers selected a battery of scales that were used to capture the experience. Self-rating scales administered before and

one week after the program, observer-rated scales, and a take-home evaluation were used to collect data and capture participant feedback.

Findings revealed statistically significant and substantively visible mood changes in both the caregiver group and the people who had dementia. Caregivers reported an enhanced sense of self-esteem. They appreciated seeing their family members treated with respect and being able to engage with them in a gracious and beautiful environment.

Building community and strong social networks

9. Gonzales, Morrow-Howell, and Gilbert (2010):

The Vital Visionaries program is designed to improve medical students' attitudes toward older adults. The intergenerational group of older adults and medical students met for four two-hour sessions at art museums to create and discuss art. Three hundred and twenty-eight individuals participated: 112 medical students in the treatment group, 96 in the comparison group, and 120 older adults. The medical students completed pre- and post-surveys that captured their attitude toward older adults, perceptions of commonality with older adults, and career plans.

This evaluation study revealed that the "Vital Visionary" students became more positive in their attitudes toward older adults, and felt they had more in common with them. According to the findings of Ernest Gonzales and his research team, socializing these groups (with healthy older adults) through art can foster positive attitudes and enhance commonality with older adults. The arts provide a sense of community through sharing an activity, looking past stereotypes, using the mind, and engaging the senses.

10. Jeffri (2011): In *Still Kicking: Aging Performing Artists in NYC and LA Metro Areas*, Joan Jeffri continued the pioneering work of her research on aging artists. The study aimed to understand how artists, who often reach artistic maturity and increased artistic satisfaction as they age, are supported and integrated within their communities and how their social network structures change over time. Jeffri's hypothesis was that artists, who have learned how to adapt during their entire life course, can be a model for U.S. society as the

workforce changes to accommodate multiple careers, and as baby-boomers enter retirement.

Results showed that older adults with strong networks are more likely to stay out of nursing homes and to display quality-of-life benefits, compared to adults with less diverse social networks. (Artists generally have robust social networks—a strong indicator of social capital.) The artists in the study ranked high on life-satisfaction scales and had high self-esteem as individuals and as artists. The majority reported that they will never retire from their art-making. Although self-esteem typically declines with age, over 83 percent of aging performing artists rated their self-esteem as individuals and self-esteem as artists as good to excellent.

LOOKING TO THE FUTURE

The dramatic rise of older Americans in the general population presents both a challenge and a unique opportunity for strategic partnerships and new research agendas.

In 2009, Castora-Binkley, et al. conducted a systematic literature review to examine research publications on participatory arts programs for older adults and their reported impact on health outcomes.⁴ A total of 2,205 articles were found, but only 11 were eligible for inclusion. The review revealed a paucity of research in this area. Of the studies reviewed, the researchers concluded that the most rigorous had been conducted by Cohen, et al. and the research team of Noice and Noice.

- *Gap:* There is a strong need to replicate and extend the types of studies undertaken by Cohen and the Noices in demonstrating how participation in arts programs improves health, mood, and cognition in older adults.

In older adults, arts engagement appears to encourage health-promoting behaviors (physical and mental stimulation, social engagement, self-mastery, and stress reduction) that can help prevent cognitive decline and address frailty and palliative care through strengths-based arts interventions. Prevention can have profound effects on individual quality of life and on the cost of healthcare.

- *Gap*: Further research is needed to confirm that arts engagement has these beneficial effects and to identify which kinds of arts interventions are most effective.
- *Gap*: Sophisticated cost-benefit analyses should be conducted to quantify the long-term savings that may accrue from integrating the arts into preventive and therapeutic health programs for older adults.
- *Gap*: Intergenerational arts learning offers great promise for leveraging the strengths, skills, and experiences of older adults. Studies should be conducted to identify the unique potential benefits that result from programs engaging older and younger people together in arts learning as individuals, families, and community members.

NOTES

¹ Administration on Aging, U.S. Department of Health and Human Services, *A Profile of Older Americans: 2010*, accessed August 8, 2011, http://www.aoa.gov/aoaroot/aging_statistics/Profile/2010/docs/2010profile.pdf.

² Institute of Medicine, *Retooling for an Aging America: Building the Health Care Workforce*, accessed August 8, 2011, http://www.nap.edu/catalog.php?record_id=12089.

³ ILC-SCSHE Taskforce, *The Caregiving Project for Older Americans, Caregiving in America* (New York: ILC-USA, 2006).

⁴ Melissa Castora-Binkley, et al., "Impact of Arts Participation on Health Outcomes for Older Adults," *Journal of Aging, Humanities and the Arts* 4 (2010): 352–367.

RECOMMENDATIONS AND CONCLUSIONS

The research presented at the March 2011 NEA-HHS convening, and augmented in this white paper, is replete with promising findings. Studies supported by the Dana Foundation around learning, arts, and the brain underscore improvements in both cognitive and behavioral development. A growing body of research affirms the impact the arts may have on the school-readiness of young children at risk, including children from low-income and racial/ethnic minority backgrounds, and on improved academic and behavioral outcomes in youth. Research into the impact of arts learning and engagement has also revealed a host of beneficial health, cognitive, and social outcomes for older adults.

Although the research results are promising, the majority of the studies cited here have design limitations such as relatively small, non-diverse samples and non-comparable outcome measures. Larger, more robust studies across the sectors of health and human services are warranted to enlarge an evidence-based body of knowledge sufficient to justify broad-based policy changes and best-practices replication. Forum participants agreed that a collective leap forward must be taken to address the challenges of building an evidence base.

In particular, the following challenges remain:

- *A lack of coordination* among federal agency departments and investigators and practitioners from various disciplines (e.g., arts education, child development, geriatrics, nursing, educational psychology, cognitive neuroscience, the behavioral and social sciences) in pursuing a vigorous research agenda to

understand the role of arts and arts education in human development.

- *The small size of study populations* participating in research on the arts and human development currently limits generalizability of the results. So far, the majority of reported studies rely on correlational data, rather than results from well-controlled trials. Another limiting factor is the dearth of longitudinal studies.
- *Low visibility of research findings*, program evaluation data, and evidence-based models integrating the arts in health and educational programs that occur for various segments of the lifespan.

These needs have acquired greater currency in light of recent demographic trends and domestic policy priorities. With an increasingly diverse population, a rising cohort of highly active baby-boomers facing retirement, and larger numbers of older adults with chronic diseases, opportunities for creative engagement and lifelong learning in the arts are likely to prove critical for greater health and well-being. Education leaders and communities, confronted with large percentages of Americans failing to finish high school, are seeking innovative and effective strategies to engage students and boost their achievement levels. In this climate, a stronger role for arts education should be investigated.

Finally, the high-order critical thinking and creativity skills that have been linked to arts training are deemed increasingly vital to today's workforce, to the U.S. economy, and to overall competitiveness. At the NEA-

HHS event, Mary Wright, a program director with the Conference Board, summarized findings from several industry surveys of employers: “Creativity and innovation are going to increase in importance.” Likewise, educators increasingly recognize that creativity is a key competency to be developed in school and is applicable to all subject areas. According to U.S. Secretary of Education Arne Duncan, the most effective way to foster creativity is through arts education.¹

RECOMMENDATIONS

The moment is ripe for federal leadership in the design, conduct, and dissemination of rigorous research and evidence-based practices documenting the arts’ contributions to human development—from early childhood, adolescence, and young adulthood to middle-aged and older adults. Participants at the NEA-HHS event on March 14, 2011, included representatives from federal agencies as well as from the private and not-for-profit sectors of national, state, and local service organizations representing the arts, health, education, and social services. Each area of government represented, in partnership with supporting organizations, has the potential to establish joint initiatives to better serve in the promotion of health and wellness across the lifespan through arts learning and participation. With additional communication and coordination between key agencies, resources could be shared broadly across the federal government. Common policy goals and coordinated, inter-agency strategies would promote effective outcomes and more efficient use of resources.

To support this leadership role, the following actions are recommended:

1. Establish a federal interagency task force to promote the regular sharing of research and information about the arts and human development.

The task force would include high-level officials from the National Endowment for the Arts, the Department of Education, and HHS agencies such as the Administration for Children and Families, the Administration on Aging, and the National Institutes of Health. The group would convene two to three times a year to review progress on the following tasks:

- *Host a series of webinars* spotlighting examples of compelling research and evidence-based practices that have integrated the arts in human development. The webinars will be aimed at the public, but especially at researchers and providers of the arts, health, and education for various segments of the lifespan.
- *Coordinate the distribution of information* about funding opportunities for researchers and providers of the arts, health, and education across the lifespan.
- *Conduct or commission an inventory and gap analysis* of federally sponsored research on the arts and human development so that future research opportunities can be developed by and across agencies, departments, and the private sector.
- *Develop an online clearinghouse* of research and evidence-based practices that examine or utilize the arts in health and educational programs across the lifespan.

2. Convene a series of technical workshops to help develop strong research proposals that represent robust and innovative study design and methods to investigate the relationship between the arts and human development.

If the most competitive research proposals are to reach the appropriate funders, then capacity-building through peer learning must occur. A series of workshops would help to improve the overall rigor of such studies, by recruiting outstanding scientists to tackle vexing and complex problems in pursuing this topic.

Because of formidable difficulties involved in mounting large-scale, longitudinal studies of the arts at work in human development—and because of the complexity of study design factors related to different age populations—it is important to bring together research methodologists and content experts in neuroscience, health, education, and the arts to advance discussion of key topics, including:

- *What are appropriate outcomes* (including quality-of-life indicators) for studies comparing arts interventions with control groups in the provision of health and/or educational services?
- *How might successful randomization be achieved* and comparison study design models developed for exploring the arts' potential impact, particularly on children and older adults?
- *How can diversity in the study populations be promoted* to ensure that findings about the arts and human development will apply toward and thus benefit all groups (e.g., individuals from all ages and different racial/ethnic backgrounds, including those with disabilities)?
- *How can artists and arts educators contribute fully* to the planning and conduct of research? What protocols and criteria should guide the administration of arts content and delivery?

3. Bring the arts to national and international conversations about integrating the concept of well-being into policy development.

Even while new evidence is being gathered, the federal partnership should leverage growing national and international interest in using measures of subjective well-being as complementary and valuable tools to guide policy decisions. This discussion is highly consistent with the HHS strategic goal—“Advance the health, safety, and well-being of the American people.” At the same time, greater analysis of the arts in direct relationship to well-being will provide the NEA with an opportunity to realize one of its own goals for the American people—“Promote public knowledge and understanding about the contribution of the arts.”

This recommendation also aligns with two National Institute on Aging-sponsored efforts to advance the measurement of subjective well-being for application to research on aging and health. Those efforts include:

- Development of a National Research Council panel on “measuring subjective well-being in a policy-relevant framework.” This initiative, cosponsored by the UK Economic and Social Research Council, was singled out by the White House in a May 25, 2011, joint fact sheet as having “the potential to generate new

insights that will directly inform social and economic policies.”

- A series of National Academies of Sciences workshops that will conclude in September 2012 with recommendations on the “evaluation of measures of subjective well-being and development of OECD guidance for national statistical agencies on the measurement of well-being.” The workshops should be monitored for their potential applicability to future federal data collection about the arts' role in human development.

CONCLUSION

At the outset of the NEA-HHS convening on March 14, 2011, NEA Chairman Landesman declared: “The arts are central to human development. Movement, song, rhythm, and storytelling are the earliest ways that babies and their families interact, and these are the same impulses that stay with us over our entire lives.”

The NEA chairman reinforced the primal connection between the arts and human development.

“We know all this experientially,” Landesman said. “Anyone who has sung a lullaby or danced a child to sleep or listened to a young person’s imaginative adventures has witnessed this.” He urged the forum’s participants to “take the anecdotal and turn it into a framework for the NEA and HHS to work together.”

HHS Secretary Sebelius equally supported the call for action. “We strongly believe that the arts can inspire and move people to do great things,” she said, noting that “our department has stressed the role of arts in health from day one.”

“Therefore,” the HHS secretary added, “we hope this meeting leads to deeper collaboration in research and in identifying new ways to engage the arts to improve people’s lives.”

True to its purpose, “The Arts and Human Development: Learning across the Lifespan” convening has resulted in the framework for long-term collaboration among the NEA, HHS, and other federal agencies to build capacity for future research and evidence-sharing

about the role of the arts in human development. The additional research made possible through collaboration will lead to effective, replicable models for improving quality of life and related outcomes through the arts, for Americans at different stages of their lives. Based on the findings of the NEA-HHS convening and white paper, there could be no better time to take existing research on the arts and human development to the next crucial phase.

NOTES

¹ President's Committee on the Arts and the Humanities, *Reinvesting in Arts Education: Winning America's Future through Creative Schools* (Washington, DC: PCAH, 2011).



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