

Taking Note: Two New Research Articles Explore Long-Term Benefits of Musical Training

April 5, 2018

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During a January 2017 research workshop held at the National Institutes of Health (NIH), participants

rapidly became aware that at least two different expert groups had converged on a shared agenda. Working together, music therapists and neuroscientists sought to identify research needs and priorities in understanding how the brain processes music, how music can assist brain development, and how music therapies and programs can be used to mitigate the effects of brain diseases.

Other disciplines and sub-disciplines were also on hand: basic scientists and clinicians; musicians (notably Renée Fleming, who, with the Kennedy Center, co-hosted the event); and researchers focusing on different segments of the human lifespan. However, as an attendee—along with the National Endowment for the Arts' Music Director Ann Meier Baker and other colleagues—I was entranced by the spectacle of the world's leading

funder of biomedical and behavioral research inquiring into topics with implications not only for health and wellness, but also for arts education and creativity.

[Results of those deliberations](#) have been published in the scientific journal *Neuron*, where the National Endowment for the Arts is referenced for its role in supporting Sound Health, a partnership between NIH and the Kennedy Center. (Workshop panelists included several of our past and present colleagues, such as: Julene Johnson, University of California, San Francisco, and co-author of the [NEA Guide to Community-Engaged Research in the Arts and Health](#); Joke Bradt, a co-investigator with the [NEA Research Lab at Drexel University](#); Gay Hanna, co-author of the NEA report [The Arts and Human Development](#); and Charles Limb, principal investigator with a

new [NEA Research Lab at the University of California, San Francisco.](#))

Alongside research findings about the therapeutic benefits of music, and about music and brain plasticity, the *Neuron* article reports the claim of workshop participants that “musical training has the capacity to foster the development of non-musical skills across a host of domains, including language development, attention, visuo-spatial perception, and executive function.” The article also notes that “a better understanding of musical creativity could be helpful in recognizing and promoting creativity in other domains.”

The article closes with the recognition that “the NIH, Department of Veterans Affairs, and the NEA currently have funding opportunities and active programs supporting the study and application of music in health settings.” But “educators” are listed among a group of potential partners who can assist funding agencies, scientists, musicians, and music therapists in blazing “an exciting path forward,” where future research is concerned. For the moment, NIH has convened an internal working group to pursue research funding and collaborative opportunities at this intersection.

(Disclosure: I’m named as a co-author of this summary article.)

Another [recent article](#), this one in the journal *Frontiers in Neuroscience*, presents original research findings from a longitudinal study of music education for primary-school students in the Netherlands. The researchers tracked 147 children (average age = six years old) over a 2.5-year period. The students were randomly assigned to four groups. Two received the music “intervention”—consisting of one-to two-hour lessons per week during school hours, a curriculum to be adopted by all Dutch schools by the year 2020—and one got visual arts instruction (i.e., general lessons in painting, sculpting, and art history). A fourth group received no music or visual art lessons beyond the usual primary-schools curricula.

The study tested all four groups for changes in cognitive abilities—specifically in executive functioning—that are closely allied with academic achievement. Those functions include planning, inhibition, short-term memory, and working memory. At the end of the study, the music-group participants, who all were encouraged to choose and play musical instruments as part of their curriculum, tested higher for

planning and inhibition—and for verbal IQ—when compared with participants in the two other groups. (In another finding, the visual arts instruction group showed significant improvement in visuo-spatial memory.)

Taken together, both research articles suggest that musical training may have enduring benefits for lifelong learning, extending beyond the cultivation of talent, taste, and even therapeutic applications.

In 2017, the Sound Health partnership produced a series of events and workshops at the Kennedy Center, featuring musicians such as Ben Folds; read more about him [here](#). Interested in learning more about the genesis Sound Health project? Check out [this Taking Note post from June 2017](#).