

## The Influence of Music Education on Developing Children

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The past two decades of psychological and neuroscientific research on music have provided robust evidence that learning to play music can support brain maturation and the development of cognitive and social skills in children and adolescents. Learning an instrument requires long hours of practice, focused attention, memory, and discipline; mastering one involves the continuous capacity to improve motor, auditory, and executive skills, and is likely to influence the differential development, maintenance, and function of certain brain structures and systems.

Our research group at the Brain and Creativity Institute at the University of Southern California (USC) has been involved in music, neuroscience, and education research for the past decade. In 2012, with the intention to systematically investigate the effects of music training on child development, we undertook a longitudinal study of school-aged children, in collaboration with the Los Angeles Philharmonic and their Youth Orchestra of Los Angeles at the Heart of Los Angeles program, known as *YOLA at HOLA*. Inspired by Venezuela's El Sistema, YOLA is a signature education program of the Los Angeles Philharmonic that offers free group-based music instruction four to five days a week to children from minority groups and underserved L.A. communities. This high-intensity program focuses on rhythm, melody, harmony, and ensemble playing with the goal of promoting social cohesion. We opted for a longitudinal design because it allowed us to continuously follow students over a prolonged period (2012–2020) and to assess how learning music influences their cognitive, social, and emotional development as well as brain development. Following is a summary of the study and some of its most important findings.

We recruited 88 children participants aged 6–7, from three groups. The first group constituted children who were about to begin participation in the YOLA at HOLA program. The second group of children was about to begin participation in community-based sports programs. The third group was recruited from public elementary schools and community centers in the same L.A. neighborhoods where the two music and sports programs were being offered; these children were not in afterschool music or sports programs. Foreseeing that scholars may reasonably relate our future findings to genetic and/or environmental predispositions, and not music training per se, we tested all participants at the beginning of the study, before any music or sports training. These tests indicated that the children in the music training group were not different from those in the other two

groups in brain measures or in intellectual, motor, musical, and social capacities.

Each year thereafter, we met all participants and their families at our institute for a two- to three-day testing period. During these visits, we measured each child's language and memory abilities, music and speech processing, and social and emotional skills. We used magnetic resonance imaging (MRI) and electroencephalography (EEG) to track each child's brain development. MRI is a noninvasive imaging technique that is increasingly used as a research tool with children. Unlike conventional x-rays, MRI does not involve exposure to radiation and is therefore considered safe for children and infants. MRI technology allows us to investigate the development of brain structures, their functions, and how they are connected to one another. We also conducted yearly interviews with their families.

We found that children who received music training performed better than children in both comparison groups at [several tasks measuring musical and auditory skills, including pitch, rhythm discrimination, and beat perception](#). The children in the music group were also the only ones to display an [increased functional development of the auditory pathway](#), the brain pathway responsible for encoding and processing sound, as measured by electrophysiology (EEG). We also observed that children who were learning music were [better at decision-making and at controlling their impulses](#). For example, they were more capable of rejecting a small immediate reward in favor of larger and better rewards later on. In addition, these children [displayed stronger engagement of the brain's prefrontal network, at younger ages](#), when performing tasks inside the MRI scanner that require executive function and decision-making. Finally, interviews with families showed that the parents of children who participated in both music and sports programs felt that [those children were less aggressive and hyperactive](#), and showed more emotional stability over time than children who did not attend such programs.

The findings from our study highlight the critical role of music and arts education in a child's development. Yet many students in our current educational system have limited access to theatre, dance, or music classes. And schools serving students from ethnic and racial minorities and students from low-income communities are disproportionately impacted by the decline of funding for arts education. We hope that these findings provide the necessary evidence for policymakers to allocate the essential budgets to support the implementation and maintenance of music education for every student.

## Editorial: Stay the Course, or Innovate?

Lecolion Washington, Executive Director, *Community Music Center of Boston*, MA

*What next?*

We are all seeking a path forward. We are all managing COVID-19 closures. And we are doing all of this alongside an upsurge of social and political unrest. We are struggling mightily and wondering what to do next. This moment of uncertainty is like no other, and as we try to understand the future role of our work, we wonder: should we continue business as usual? Or should we innovate now, and hope that we find the right recipe for future success?

I think we should do both.

*Continue business as usual?* Currently, there is no business as usual, but if you can continue your programming in the same format (with necessary safety precautions), your participants need you more than ever. Sometimes just being with you reminds them that there is a world to return to, once restrictions are lifted. This doesn't mean continuing to do things in exactly the same ways. We must shift our thinking from focusing on programming to doubling down on the concept of community. Our constituencies are facing many challenges; reminding them that they are part of a community should be our most important goal. This will look somewhat different for every organization. But we must have the courage to look away from simply maintaining programs and to develop a more human-centered approach to community engagement.

*Innovate?* This is a historical moment, in which people everywhere are seeking new ways to engage with each other. Many are beginning to shed the parts of their lives (à la Marie Kondo) that do not bring them joy. The boldest organizations, those that are looking to be first adopters of innovative opportunities, are the ones most likely to grow. This means doing things we may have never done before—for example, creating culturally responsive and learner-centered programs through the lens of equity.

Most of us are used to thinking primarily about *programs and services*. Now the priority must shift to thinking about *relationships and partners*. This may mean that some kinds of site-based programming no longer work, because of a lack of authentic relationships, and must be compassionately wound down. The silver lining is that we can reallocate our energies toward developing authentic partnerships and authentic relationships with community. This is the key to keeping our work relevant and sustainable through a challenging present and future.

### News Notes

El Sistema USA has released the theme for their **2021 National Symposium and Seminario**, charging the field to “Connect.Adapt.Thrive!” The event, now in its third year, will be held virtually and will be hosted by the Sistema-inspired program **Miami Music Project**. It will take place from February 15-19, 2021, and focus on three main areas: Racial Diversity and Cultural Understanding, Musical Excellence during the pandemic, and Team and Family Support pre- and post-pandemic. Requests for session proposals are due December 15. Proposal submissions can be made [here](#).

The **Baltimore Symphony Orchestra OrchKids** program is launching a **compositional celebration of the 100th anniversary of the women's suffrage movement**, called *Queens Unseen: Royals Without Crowns*. The composition will focus on three main areas: representation, voting, and the future of democracy. The project will also explore the “intricate and contentious element of racism throughout the suffrage movement.” For its **mid-December release**, the composition will be accompanied by visual images captured by Johns Hopkins University Film students.

Today, **December 1, is the LAST DAY TO APPLY for Carnegie Hall's 2021 National Youth Orchestra programs**. Their NYO2 ensemble might be in reach for some of your best players. This free program, which focuses on recruiting from communities that are underrepresented in classical music, brings together young musicians ages 14-17 for “intensive training and performance opportunities.” The selected students will work with professional orchestral musicians as well as teachers from top conservatories. For now, the program is set to take place in person in New York City in July 2021. Nominations from teachers, directors, administrators, or community leaders are due today, December 1; complete student applications are due December 10. Application details can be found [here](#).

The Atlanta Music Project has announced a refreshing new initiative: the **AMP Academy Rare Instrument Program**. **Virtual one-on-one lessons for instruments, including oboe, bassoon, viola, percussion, French horn, and voice, are available tuition-free to any young person in the Atlanta Metropolitan Area**, regardless of their prior experience. Students admitted to the AMP Academy Rare Instrument Program will receive weekly virtual lessons with an AMP teaching artist, perform solo recitals, and even participate in masterclasses with renowned artists. Learn more [here](#).

In this current phase of the *Arts & Cultural Education is a Fundamental, Civil, and Human Right* campaign, **Creative Generation invites you to share your story**

about **how your work has delivered on the promise of arts and cultural education as a right for youth**. Share stories, photos, videos, artworks, songs, and performances by email to [info@creative-generation.org](mailto:info@creative-generation.org), or on social media using **#RightToArtsEd!**

Last month, **Brooklyn, NY native Grace Moore became the youngest composer to have their composition performed by the New York Philharmonic**. Grace is a 7th grader who recently participated in the Philharmonic's **Very Young Composers** program. Grace talks about her upbringing, her passion for music, and the significance of being a young woman composer of color in [this feature article from PIX11](#).

### Resources

Building a comprehensive repertoire of diverse composers remains an unfortunate and lingering difficulty in our field. The **Institute for Composer Diversity (ICD)** is working to actively address this issue, creating a **database of thousands of composers from historically underrepresented groups and marginalized communities**. The database includes both living and non-living composers and includes orchestral, wind ensemble, choral, and vocal art song works, with grade level designations. It also identifies repertoire trends of major orchestras to help arts institutions shift their programming.

An article on Edutopia shares **some practical measures for moving toward more “student-centric” framing during online learning**. The article, titled “**How to Choose Words That Motivate Students during Online Learning**,” walks through practical scenarios and language shifts that help create an environment where students experience self-motivation, ownership, and engagement. All educators who miss their classrooms might find this useful.

**We may be close to real-time virtual ensemble playing**. Listen to [this NPR segment on new tech](#) from Audio Movers and Jack Trip that may make it possible for musicians to play together online. There are still glitches, especially with distances beyond a local area, but this is a hopeful update on a technological breakthrough that would benefit our work profoundly.

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### Black Voices in Classical Spaces

*Garrett McQueen, Executive Director, TRILLOQUY*

When I'm asked about my experiences in classical music, I simply share my story. In sharing it, I both reaffirm for myself why I continue this type of advocacy work and relay a lived example of why that work must be done.

My family couldn't buy an instrument for me when I was 12 years old, so my 7th grade band director handed me what was already lying around—a bassoon. Over the course of two degrees, an extracurricular activity turned into my principal field of study, and eventually into my career. Sadly, I was often the only Black person on a concert stage, and living this reality helped me to understand how impactful my presence could be in classical spaces.

When an opportunity to host classical radio presented itself, I jumped at it. My studies and experiences in the field, coupled with my desire to shift the conversations surrounding classical music, proved impactful. After less than two years hosting local classical radio, I was propelled to the national airwaves. There, I further integrated music by Black composers, hoping to demonstrate how classical music can engage today's world. But in doing so, I defied the traditional order of operations at the station, and was dismissed from my position. Then and now, I stand by it; classical music spaces must center initiatives that ensure their survival in an ever-changing world. This includes honoring the history and achievements of non-white composers, as a means of equitably highlighting contributions that are so often overlooked in classical conversations.

It's important to understand that equity in the arts looks and feels different than anything we've seen. If an institution has the opportunity to hire or engage someone with a different racial perspective, for example, they must do so. Instead of simply including anti-racism in a structure or system, they must center it. The changes needed by the arts will only be possible when promoting diverse voices is central to every decision and practice made within arts organizations. I want the 7th graders of the future to live a musical life grounded in cultural competency instead of code-switching. I want them to experience the diversity of the world through their careers, and I want them to know how hard others fought for that reality.

### From the Editors: Exciting Changes in the New Year

*This issue marks the end of our PDF era. In the new year, The Ensemble will come to you as an electronic newsletter, as The World Ensemble does now. Both newsletters will be based in a rich new website, complete with all our past articles, news items, and shared resources, easily searchable and accessible anytime. You'll still be receiving our monthly newsletters in your inbox, as well as an improved Resource Basket that serves both North American and international readers. But the new site will offer you a way to connect with the worldwide field whenever you want. Stay tuned for more details. We can't wait to see you in 2021!*