Developing & Supporting “Executive Function”

By Adele Diamond, Tier 1 Canada Research Chair Professor of Developmental Cognitive Neuroscience at the University of British Columbia, Canada

The abilities to exercise self-control and stay focused, hold information in mind and work with that information, problem-solve, and flexibly adjust to change or unexpected problems are important for all aspects of life – school, work, health, creativity, and not doing things you’ll regret. Collectively, these skills comprise what are called “executive functions” (EFs).

To improve EFs you need to practice, and the more you practice them and challenge yourself to improve, the better you get. While directly training EFs and pushing yourself to improve is needed for strengthening EFs, that alone is probably not enough. It’s likely that indirectly supporting EFs by lessening things that impair them (like stress or loneliness) and enhancing things that support them (like joy or physical vitality) is also critical.

What activities directly train and challenge EFs and indirectly support them by also addressing our social, emotional, and physical needs? Traditional activities! From the dawn of civilization, across all cultures, storytelling, dance, art, music and play have been part of the human condition. People in all cultures have made music, sang, danced, and played sports and games. There are good reasons why those activities have arisen everywhere and lasted so long.

I believe it will be shown that El Sistema-inspired programs provide powerful support for executive functions, although no evidence for this exists as yet. Indeed, there are characteristcs of El Sistema that make it likely to be especially beneficial, compared with other arts, athletic or cultural programs. Here are some of those characteristics:

- El Sistema’s emphasis on the sheer joy of making music, especially together. EFs depend on the prefrontal cortex (PFC) and the other brain regions with which it is interconnected. PFC is the newest area of the brain and the most vulnerable. If you’re stressed, sad, lonely, or not physically fit, PFC and EFs take the first hit and the biggest. Stress impairs EFs and can cause someone to look as if he or she has an EF impairment (like ADHD) even when that’s not the case. Conversely, we show better EFs when we’re happy, healthy, and feel socially supported. In general, people show more creativity and are better able to maintain focused attention when they are happier than when they are more miserable.

This is why El Sistema’s emphasis on joy is so important. Joy is not the opposite of serious. Indeed, research shows we learn more, and get more done, when we’re happy. El Sistema concentrates on building positive feelings like pride and self-confidence; children are encouraged not to worry about making mistakes, but to enjoy the process of music-making. In Abreu’s words, “Mistakes are simply what happens on the way to getting things right.”

- El Sistema’s emphasis on community. Humans are fundamentally social. We need to belong. Being part of something larger than oneself, working with others toward an important shared goal, is one of the greatest joys in life. We need to feel that there are others who care about us and are there for us. We need to fit in and be liked. PFC works more efficiently, and we have better EFs, when we feel we’re not alone. El Sistema’s practices of learning in ensemble and encouraging children to teach one another help to build feelings of community and solidarity.

- El Sistema’s emphasis on the physical activities of playing and practicing. The brain doesn’t recognize the same sharp division between cognitive and motor function that we impose in our thinking. The same or substantially overlapping brain regions serve both cognitive and motor functions. For example, an area of the brain known as the pre-SMA is important for sequential tasks, regardless of whether they are cognitive or motor.

The different parts of a person are interrelated. Each part (cognitive, spiritual, social, emotional, and physical) is affected by, and affects, the others. We have to care about children’s emotional, social, and physical well-being, if we want them to be able to problem-solve, exercise self-control, or display any of the other EFs. When they are stressed, sad, lonely or not physically fit, their academic performance suffers.

It worrisome that activities needed for children to thrive (such as music-making and play) are disappearing from school curricula and children’s lives. Mainstream education may have it exactly backwards. Focusing exclusively on training cognitive skills is probably less efficient or effective than also addressing youths’ emotional, social, and physical needs. Addressing those needs may be key to whether children do well in school and in life. No program does a better job of addressing the whole child – mind, heart, and soul – than does El Sistema.

[For a version of this article that includes detailed footnotes, download the article here: http://tinyurl.com/goldlg4. To see Adele Diamond’s TEDx talk on this subject: http://tedxtalks.ted.com/video/Turning-some-Ideas-on-their-Head]
“If You Sing, You Play Better”

By Daniel Soren, Vocal Teacher, Co-Founder of Opera Program, Orquestrando a Vida, Campos, Brazil

At the Orquestrando a Vida program in Campos, Brazil, we are very proud of our incredible youth and children’s orchestras. But we are equally proud of our vocal programs. We are somewhat unusual among Sistema-inspired programs in that we emphasize vocal learning as much as instrumental learning. Every one of our students who plays an instrument also sings in a choral ensemble. This is not because we want every student to become a virtuosic singer, but because we believe that choral experience enhances the development of the ear. So much about tuning, intonation, and phrasing can be learned from singing. Our choral maestro Juan Gorrín, from Venezuela, says, “I believe that if you sing, you play better.”

For students who want to specialize in vocal training, we have created an opera studio within the program. We’ve developed a curriculum to teach all facets of music appreciation) in the context of theater. Last year we did Puccini’s La Bohème; this year we are doing Donizetti’s L’Elisir d’Amore. We perform our operatic production before, in its entire history!

Last year, the students played almost all the major roles; this year, lead parts will be sung by staff and guest professionals, with the students in the chorus. Both experiences are important; the kids learn a lot from singing the roles, but they also learn a lot from being onstage with professionals. They get infused with the sound and the energy level of the pros. And teenagers love the excitement of dramatic performance! Our advanced orchestra, the Mariuccia Iacovino Orchestra, plays in the pit, so these productions really unify our instrumental and choral students in a big common project.

The harder the music is, the more the kids love it. When we started this program, we thought we would need to begin with familiar tunes. But we quickly discovered that’s not what they want. They want things they don’t know, things that are a challenge! This November, to celebrate our twentieth anniversary, we will play Beethoven’s Ninth in a big concert hall. It’s amazing what our kids can accomplish, when we put the opportunities in their hands.

In April, over 100 teachers and program managers from 30 countries of Sistema Europe gathered in Vienna for a series of teacher workshops and management sessions, the latter to develop Sistema Europe’s strategic goals for the coming years. Highlights of the weekend, hosted by Superar Vienna and supported by the Hilti Foundation, included an encounter with Gustavo Dudamel, a practical workshop with Gerald Wirth (Artistic Director of Wiener Sängerknaben), and a performance by the Superar Vienna Orchestra. For more information: www.sistemaeurope.org

HANGARMUSIK is a children’s orchestra for refugee children in the former airport of Berlin Tempelhof, run by Leila Weber and Andreas Knapp. A team from Germany, Venezuela, and Syria are working regularly with children ages 6-12 from countries such as Afghanistan, Syria, Iraq, ...

FROM THE PUBLISHER AND EDITOR

In our travels to study El Sistema-inspired programs in 25 countries and perhaps 100 program sites, we always are struck by both the similarities and the differences. The principles and core values are remarkably consistent across these many different cultures. Maestro Abreu’s vision – of a social program that changes the trajectory of the lives of children growing up in poverty and stress through the tools, challenges, pleasures, beauty and social relationships of ensemble music – is truly shared across the globe; it is the glue of our widely scattered movement. Across continents, the words may differ, the music repertoire may vary, and many kinds of ensembles proliferate; but the bedrock values are strong and consistent.

Also consistent are observations about outcomes, although few are affirmed as yet by reliable evaluation data. Almost everywhere, students improve academically, even though intensive rehearsing reduces time available for homework. Almost everywhere, parents become strong advocates who readily cite significant changes they have seen in their kids. In some countries, cultural norms keep parents less involved in the programs, but even in those instances, parents report significant positive change. We can make this statement confidently: in programs that have found their full stride, there is always a disparate array of observed positive changes in students, often with a significant ripple effect for families and communities. There are remarkably few or no downside consequences reported or observed.

At the same time, program practices vary in response to local needs and resources – just as Maestro Abreu has always hoped they would. Organizationally, programs are experimenting with new ways to make the case for government support; for example, creating new language about the Sistema model as involving relatively high initial costs but significant long-term savings in reduced health and welfare expenses for students who stay in school longer, stay healthier, and do not get criminally involved.

There are many other areas of experimentation: different kinds of professional development to build more effective faculties; different kinds of repertoire and curriculum; new ways to make space for improvisation and composition; new ways to partner with other existing music groups. And much more.

These experiments are all distinctive and all valuable, each one in its own way. This is why communication between programs is so urgent: it enables us to learn faster and better as a field. The lessons learned in one program can be adopted and built upon by others – but only if we are in touch with one another.

Eric Booth and Tricia Tunstall
By Fabienne Van Eck, Artistic Director, Sounds of Palestine, Bethlehem

Arriving at the Sounds of Palestine music program in Bethlehem one day, I found Iman, one of my 7-year-old cello students, crying. Iman lives in the Al-Azzeh refugee camp; I had been her music teacher in kindergarten, and for two years she has been attending our after-school program and having cello lessons, choir, orchestra, music theory and dəbke (Palestinian folklore dance), as well as healthy home-cooked meals. I tried to find out what made Iman so upset, but she wasn’t able to talk and kept crying.

Sounds of Palestine, an El Sistema-inspired program that began in 2012, serves close to 200 children in refugee camps in Bethlehem and in two remote villages. We provide weekly music appreciation lessons that include singing, dancing, body percussion and playing music games. We begin with children in kindergarten and continue to work with them as they grow. Sounds of Palestine endeavors to provide a safe space for children to express themselves in a non-threatening way, and extra support for children with special needs conditions.

Like all the children of the refugee camps, Iman commonly encounters violent clashes involving tear gas, rubber bullets and live ammunition. Just three days before the day I found her crying, a 13-year-old boy from Aida refugee camp was shot dead by a soldier when he was on his way home from school, still carrying his backpack.

After I gave her some water, Iman managed say one word: “demonstrations.” I called her mother in the hope she could calm her down, but Iman continued to cry uncontrollably. We couldn’t bring her home because there was tear gas being used in the area. In addition, another fifty children were in the school, waiting for their music lessons to start. I decided to start with my cello group lesson while Iman stayed in another room with one of our social workers.

After half an hour, the social worker told me that Iman still hadn’t stopped crying. I told him to bring her in the room and let her sit next to me. Instinctively, I handed her one of the cellos, and I continued the group lesson. Iman started playing automatically, tears still covering her face. After thirty seconds, a smile appeared. A minute passed, and she was laughing. She played with us for the rest of the lesson, and afterwards in the orchestra. Then she participated in the theory lesson and dəbke class. She went home happy, kidding with her friends.

Music accomplished what we couldn’t. Music helped Iman change her mood, and cope with her trauma and grief. (For more: www.soundsofpalestine.org)
In March, Kate Maloney from Youth Orchestra of the Americas Global Leaders program spent several weeks working with El Sistema Kenya (ESK) in Juja and Waitaha, and Let It Shine in Arusha and Moshi in Tanzania. With YOA’s help, ESK has grown to over 200 young students in three impoverished areas of Nairobi, and Let It Shine has recently expanded to teach violin, in addition to recorder and voice lessons.

The Meru Music Project (MMP) in Kenya, in partnership with Meru University, is working to develop Kenya’s first music education program for Bachelor’s degree students. The Kenyan government has recently expressed interest in developing this program. MMP is seeking a Music Director to work at Meru University, as well as to assist with the growth of MMP’s band and string students. Contact Larry Dittmar (lpdittmar66@gmail.com) for more information.

In April, Sistema Hutt Valley in New Zealand received a visit from Leonard Elschenbroich, who together with his partner Nicola Benedetti (a friend of Sistema Scotland) performed with the New Zealand Symphony Orchestra. Mr. Elschenbroich conducted the orchestra of young musicians at St. Michael’s School and mentored individual cello players. Alison Eldredge of Sistema Hutt Valley said, “This was a wonderful experience for the students, helping them understand that they are part of a huge Sistema family all over the world.

In France, the French string quartet Quatuor Modigliani visited Les Musiciens du 20ème in Paris, a residence of El Sistema in rural France.

The flute is frequently mentioned in Hindu mythology and is used to teach the foundations of Indian classical music. More at http://www.music4all.org.

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You may join the El Sistema-inspired movement, written by Tricia Tunstall and Eric Booth (who produce this newsletter), will be published on September 13th. The book is titled Playing for Their Lives: The Global El Sistema Movement for Social Change Through Music. A website is now available with resources and a blog (that you can subscribe to) which carries stories and observations not included in the book. Go to: playingfortheirlives.com

“...since In Harmony Liverpool started, it’s dead cool to play a violin in West Everton.”
- Ed Vulliamy, The Observer