

Canadian – National Research

David Gerry, Andrea Unrau and Laurel J. Trainor (2012) Active music classes in infancy enhance musical, communicative and social development. *Developmental Science* 15:3, pp 39

http://trainorlab.mcmaster.ca/publications/pdfs/GerryUnrauTrainor_2012.pdf

“Just as infants learn the particular language spoken in their environment, they also acquire sensitivity to the tonal (musical scales and harmonies) and rhythmic structure of the musical system of their culture and exposure to music and movement appears to accelerate acquisition of culture-specific rhythms”

“The results indicate that when appropriate pedagogical techniques are used, active music classes for infants and parents can accelerate infants’ acquisition of culture-specific musical knowledge and can positively influence communication and social interaction between parents and infants. Despite the focus in the literature on older children, the present findings suggest that the infant brain might be particularly plastic with respect to musical experience. “

“The present findings indicate that it is possible to see the beginnings of sensitivity to Western musical tonality as young as 12 months of age.”

Laura K. Cirelli, Kathleen M. Einarson and Laurel J. Trainor (2014) Interpersonal synchrony increases prosocial behavior in infants. *Developmental Science*

http://trainorlab.mcmaster.ca/publications/pdfs/cirelli_einarson_trainor2014_DevSci.pdf

“Some aspects of sophisticated musical processing develop early. Young infants prefer musically consonant over dissonant sounds, they can remember and detect changes in melodies, rhythms, and timbres, and by 1 year of age, they show evidence of enculturation to the timing structures and pitch classes used in the music of their culture”

“Interpersonal synchrony is a common experience in an infant’s social world. Caregivers often engage in musical behaviors such as singing, clapping, dancing, and bouncing with their young children. Our results suggest that such activities promote socially cohesive behaviors between infants and caregivers. Moreover, since the helping behaviors manipulated in this experiment represent an early form of altruism, the results presented here suggest that 14-month-old infants are already using social cues to direct their interpersonal helping, and that interpersonal synchrony is one such cue.”

Upitis, R. (2011). Engaging students through the arts. *The Literacy and Numeracy Secretariat, [Monograph 33]. Toronto, ON: The Royal Conservatory of Music.*

“Student engagement is central to learning. Those students who are fully engaged are ready to learn in every way – physically, socially, emotionally and intellectually. The arts play a vital role in ensuring that students remain engaged by encouraging them to learn in physical and embodied

ways, by inviting them to collaborate with peers, by requiring them to respond emotionally and by calling upon their cognitive capacities as they learn in, through and about the arts”

“The arts add enjoyment to the day and make students more alert to other kinds of learning. Classroom teachers become the best advocates for an engaging education, rich in the arts, when they bring the arts to their students.”

“Canadian research affirms that spending time in the arts does not come at the expense of achievement in other subjects, but improves estimation and computation skills and enhances student engagement in school learning overall.”

Kraus, N. et al. (2014). Music enrichment programs improve the neural encoding of speech in at-risk children. *The Journal of Neuroscience*, 34, 11913-11918.

“Community music programs enhance the neural processing of speech in at-risk children, suggesting that active and repeated engagement with sound changes neural function.”

“Musicians are often reported to have enhanced neurophysiological functions, especially in the auditory system.”

“Musical training is thought to improve nervous system function by focusing attention on meaningful acoustic cues, and these improvements in auditory processing cascade to language and cognitive skills. In light of these reports, educators are considering the potential for co-curricular music programs to provide auditory-cognitive enrichment to children during critical developmental years.”

Kuzmich, N. (2010). Brain-music connection: Activations that continue to amaze. *The Canadian Music Educator*, 52(2), 8-9.

“Researchers from diverse disciplines have sought to explore the influence of musical experiences. A considerable number have noted that intensive musical practice has led to marked structural changes in the brain, thus enhancing learning and listening skills (Kraus & Chandrasekaran, 2010).”

“Regular engagement with music can exert lasting effects on brain function, on brain malleability throughout life.”

Moreno, S., Bialystok, E., Barac, R., Schellenberg, E. G., Cepeda, N.J., & Chau, T. (2011). Short-term music training enhances verbal intelligence and executive function. *Psychological Science*, 22(11), 1425-1433.

“Our findings demonstrate a causal relationship between music training and improvements in language and executive functions, supporting the possibility of broad transfer between high-level cognitive abilities.”

The Royal Conservatory of Music. (2014). The benefits of music education: An overview of current neuroscience research. Toronto, ON: The Royal Conservatory of Music.

“Music education is powerful tool for attaining children’s full intellectual, creative and social potential.”

“Never too late to get a start in music, Guelph orchestra proves, “ **Guelph Mercury, December 4, 2014.** <http://www.guelphmercury.com/news-story/5182417-never-too-late-to-get-a-start-in-music-guelph-orchestra-proves/>

Hay, Susan, "Program gives those with disabilities the chance to produce music," **Global News Toronto; November 19, 2014**. <http://globalnews.ca/news/1681229/program-gives-those-with-disabilities-the-chance-to-produce-music/>

O'Neill, Susan A. (ed.) 2012. *Personhood and Music Learning: Connecting Perspectives and Narratives*. Waterloo: Canadian Music Educators' Association

Pike, Helen. Calgary Philharmonic Orchestra gives school children chance to play. <http://metronews.ca/news/calgary/1377924/calgary-philharmonic-orchestra-gives-school-children-chance-to-play/>**Metro, May 25, 2015**

Corbett, Michael, "Toward a geography of rural education in Canada," **Canadian Journal of Education 37/3 (2014)**.

Canadian – Provincial Research

Ontario-based research

People for Education. (2012). The arts: A report from people for education. Retrieved from
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"To succeed in the workplace and in our changing society, people must develop higher level skills, including creativity, problem-solving, the ability to communicate in different ways, self-discipline, tolerance and critical thinking. A growing body of research and decades of practice demonstrate that arts education can help children develop these critical higher level skills."

"The Ontario Arts Council says, 'full intellectual development requires more than traditional literacy and numeracy skills'"

"One notable exception to this upward trend in Northern Ontario, where there has been a 10% drop in the percentage of schools with full-or-part-time music teachers."

"For many students, schools provide their first (and, for some, their only), experience of the arts. But arts programming is often viewed as a luxury or an extra. In this way, student access to the arts may be dictated by families' financial ability to subsidize the cost."

"A lack of teacher support and training may also hinder students' arts exposure in the Ontario curriculum, yet many student teachers receive only a few hours of instruction in the arts during the one-year general teacher-training program."

"The arts are a core component of the twenty-first-century competencies needed to succeed in school and in life. People for Education recommends that: the province provide specific and targeted funding for arts programs and specialists in elementary and secondary school, the province require generalist teachers to have at least some professional development in the arts, and the province reinstate the Program Enhancement Grant – designed to enhance new and existing programs in music and the arts and outdoor physical education – and that it require boards to report on the programs it funds."

People for Education. (2014). Public Education: Our Best Investment. Retrieved from <http://www.peopleforeducation.ca/wp-content/uploads/2014/06/annual-report-2014-WEB.pdf>

“43% of schools have a specialist music teacher, either full- or part-time; a decline from 49% in 2012.”

“In the past decade, the number of elementary schools that have an itinerant music teacher has risen from 21% to 40%.”

“29% of elementary schools have neither a specialist music teacher nor an itinerant music teacher.”

“There are no teachers being hired that have a music background. I have a music room full of instruments that none of us know how to play.”

“We are able to run a healthy music program, BUT only because I happen to have music teachers on staff. This is simply pure luck.”

“Funding for specialist music teachers is generated by teacher preparation time. When a regular classroom teacher has preparation time, another teacher – usually a specialist – takes the class.”

“It is challenging to find a qualified instrumental music teacher who is willing to come to mid-western Ontario for a 0.25 position.”

“Our school has band instruments, but no teacher on staff has the qualifications to teach band. Our school has been on a wait list for an itinerant instructor for two years.”

People for Education. (2013). Annual Report on Ontario’s Publicly Funded Schools Mind the gap: Inequality in Ontario’s schools. Toronto, ON: People for Education.

Retrieved from

<http://www.peopleforeducation.ca/wp-content/uploads/2011/12/People-for-Education-report-on-the-arts-in-schools-April-2013.pdf>

“40% of music teachers are part-time.”

“62% of schools in the GTA have music teachers, compared to 26% of elementary schools in northern Ontario, and 32% in eastern Ontario.”

“Schools with a specialist music teacher are significantly more likely to offer the chance to learn an instrument in school hours, be part of a choir, band or orchestra, perform in public, and see live performances.”

“Schools with higher average family incomes are more likely to offer students the chance to be part of a choir, band or orchestra.”

“15% of secondary schools charge fees for music courses.”

“Our school almost lost the music program because a reduced number of students and teachers. Our music teacher was bumped from the school. We managed to keep the program because we had a teacher who is a musician and was willing to teach the one section of music we had left. We had to combine all grades in one class.”

“Therefore, People for Education recommends that the province, working with school boards and school communities, develop a broader, measurable set of goals for education that includes goals for fostering students’ creativity, and it supported by:

Policy and funding to ensure that every elementary student has the opportunity to learn an instrument, and/or perform in a choir, band or orchestra.”

“Creativity is considered to be one of the key skills necessary to thrive in the 21st century and one of the best ways to foster creativity is through arts education”

The Arts Go to School, David Booth and Masayuki Hachiya, eds. (from Ontario Arts curriculum)

Ontario Ministry of Education. (2009). The Ontario curriculum, grades 1-8: The arts. Toronto, ON: Ontario Ministry of Education.

“Since arts experiences offer other modes and ways of experiencing and learning, children will have opportunities to think and feel as they explore, problem solve, express, interpret, and evaluate the process and the results. To watch a child completely engaged in an arts experience is to recognize that the brain is on, driven by the aesthetic and emotional imperative to make meaning, to say something, to represent what matters.”

Deviney, E. (2014). Bringing the city alive: A survey of arts in the GTA. Toronto, ON: Toronto Arts Foundation.

“70% of the GTA residents regularly engage in the arts whether through attendance, volunteerism or donation and 74% of GTA residents agree the arts provide benefits to Toronto”

“A majority of Toronto residents agree that funding for the arts should be increased”

“60% of Ontarians surveyed live, work, or visit Toronto because of its arts and culture.”

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Music Classes Boost Language Skills, Study Says: <http://consumer.healthday.com/cognitive-health-information-26/brain-health-news-80/music-classes-boost-brain-development-study-says-694664.html>

Music Lessons spur emotional and physical

growth: http://www.washingtonpost.com/news/speaking-of-science/wp/2015/01/07/music-lessons-spur-emotional-and-behavioral-growth-in-children-new-study-says/?tid=sm_fb

What Parents Need to Know About Children's Brains On Music | 89.3 KPCC (California)

Nina Kraus is a NAMM Foundation-funded researcher.

<http://www.scpr.org/blogs/education/2015/01/26/17849/what-parents-need-to-know-about-children-s-brains/>

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training: <http://national.deseretnews.com/article/3401/brain-study-shows-the-benefits-of-music-training.html>

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