

The impact of arts education: Comments on Winner et al. (2011)

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in Education for innovation: The role of arts and STEM education.

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Good points

- Skeptical, critical tone throughout
- Particularly cautious about *not* inferring causation from correlational or quasi-experimental designs
- Adamant about the intrinsic importance of an arts education whether it has beneficial side-effects or not

Weaker Points

- In some instances, too critical
- e.g., *Music instruction and IQ in childhood*
- Well established, effect size can be 10 points
e.g., Schellenberg, 2004, 2006, 2011, in press; Schellenberg & Mankarious, in preparation; Trimmer & Cuddy, 2008; Thompson, Schellenberg, & Husain, 2004
- “Null findings”: only 6 months of training-
IQ increase 5 points greater for music vs
painting, small sample sizes ($N=20$), hidden
effects (significant with a 1-tailed test)

Moreno et al., 2009; Nering, 2002; Ho, Cheung, & Chan, 2003

Weaker Points

- In other instances, not critical enough
- e.g., *Music education and reading*
- 5 studies: 3 were about music aptitude (not education)
Anvari, Trainor, Woodside, & Levy, 2002; Barwick et al., 1989; Lamb & Gregory, 1993
- Other 2 were not really peer-reviewed
- Music aptitude ≠ Music training in schools
≠ Private music lessons

Weaker Points

- *Music training and speech-perception skills*
- Abundance of evidence showing that musically trained individuals are good listeners, particularly on pitch-perception tasks, not surprising that the effect extends to speech (2 of 6 studies) Besson et al. 2007; Moreno et al. 2009
- ERP evidence with null or no behavioural results--a positive association? (2 of 6)

Jentschke & Koelsch, 2009; Jentschke, Koelsch, & Frederici, 2005

Weaker Points

- *Issue of self-selection*
- Mentioned repeatedly but shy about the role of genetics and the “active child”

Call for Experiments

- *Be careful what you wish for...*
- Random assignment to private lessons means that music lessons and control lessons have to be provided for free
- Children don't practice
Schellenberg, 2004
- Correlational studies with confounding variables held constant: A better approach?

New Evidence-1

- Random assignment of kindergarteners to training in music, phonological skills, or sports at 3 different schools (9 groups)

Degé & Schwarzer, in press

- 10 minutes / day, 20 weeks, 100 sessions
- Pre- and post-training measures of phonological awareness: Equivalent increases for music and phonological group but not for sports

New Evidence-2

- Random assignment of 4- to 6-year-olds to computerized training in music or visual art
Moreno, Bialystok, Barac, Schellenberg, Cepeda, & Chau, in press
- 1 hour / day, 4 weeks, 20 sessions total
- Pre- and post-training measures of Vocabulary and Block Design (WPPSI)
- Increases only for music group, only on Vocabulary test

New Evidence-2

- Both new experiments:
Training was intensive, non-instrumental
- Listening training \neq instrumental music lessons
- Listening training with musical stimuli appears to have language-related benefits

Experimental Idea

- Treat the school as the experimental unit
- All schools must have 2 classes at same level (e.g., 1st grade, equal ability)
- At each school, classes assigned randomly to treatment (arts / music) or control (other arts / non-arts / nothing)
- Pre-post average, class: repeated measures

Experimental Idea

	Music	Music	Control	Control
School	Pre	Post	Pre	Post
1				
2				
3				
4				
...				
50				

Thank you/Merci