

Cynulliad Cenedlaethol Cymru / National Assembly for Wales  
Pwyllgor Diwylliant, y Gymraeg a Chyfathrebu / The Culture, Welsh Language  
and Communications Committee  
Ariannu addysg gerddoriaeth a mynediad ati / Funding for and access to  
music education  
CWLC(5) FAME05  
Ymateb gan Ysgol Gerdd Caerdydd / Evidence from Cardiff Music School

## Learning Music is not easy

Learning to play an instrument takes patience, persistence, and focus – the same qualities students need to excel in school and in their future career.

We know from experience that long-term engagement with music is good for children. We are also interested in the science explaining the cognitive benefits of music. Researchers at Northwestern University are uncovering how learning music changes a child's brain.

In Partnership with the Harmony Project of America, The team at Northwestern found that children who studied music became better listeners, which in turn improves their reading skills as well as their ability to focus in a noisy classroom. According to lead researcher Dr Nina Kraus, music can play a crucial role in closing the academic achievement gap between affluent and low-income children.

Taken from the The Neuroscientist –

<http://brainvolts.northwestern.edu/documents/KrausWhiteSchwochNeuroscientist2016.pdf>

Dr Nina Kraus stated “Sound is an invisible but powerful force that is central to everyday life”. Studies in the neurobiology of everyday communication seek to elucidate the neural mechanisms underlying sound processing, their stability, their plasticity, and their links to language abilities and disabilities. This sound processing lies at the nexus of cognitive, sensorimotor, and reward networks. Music provides a powerful experimental model to understand these biological foundations of communication, especially with regard to auditory learning.

We review studies of music training that employ a biological approach to reveal the integrity of sound processing in the brain, the bearing these mechanisms have on everyday communication, and how these processes are shaped by experience. Together, these experiments illustrate that music

works in synergistic partnerships with language skills and the ability to make sense of speech in complex, everyday listening environments.

The active, repeated engagement with sound demanded by music making augments the neural processing of speech, eventually cascading to listening and language.

This generalisation from music to everyday communications illustrates both that these auditory brain mechanisms have a profound potential for plasticity and that sound processing is biologically intertwined with listening and language skills.

A new wave of studies has pushed neuroscience beyond the traditional laboratory by revealing the effects of community music training in underserved populations. These community-based studies reinforce laboratory work highlight how the auditory system achieves a remarkable balance between stability and flexibility in processing speech.

Turning our attention more specifically to the report of the task and finish group on Music Services in Wales, we believe that Wales should be looking at the Harmony Project as a model. The reasons for this are primarily twofold:

1) Wales's 'pyramid' structure for instrumental and vocal training highlights the need to address inequalities and in tackling deprivation; therefore opening doors for disadvantaged learners and supporting skills development. Many Music Services in Wales have little or no provision for providing instrumental tuition for eFSM learners. We feel that a collaboration and sharing of best practices so that the value of this pyramidal pathway is preserved would be best served by utilising the vast experience that the Harmony Project has gathered in order to fully achieve this objective.

2) Music Services in part fulfill the progression from grassroots through to higher education and/or professional practice. This process however could be encouraged and developed by the collaboration with external organisations that specialise in the training of students to make successful applications to Music Conservatoires and Universities. Our suggestion would be that Music Services work collaboratively with external specialists so that all organisations have a role at each stage of a students development;

facilitating the pupils access to industry professionals and ensuring that no pupils' talent is left underdeveloped.

The Harmony Project is a life changing music and neuroscience project from LA.

How our nervous system processes sound is vital for how we learn to read and understand, improving special cognition such as processing speed, memory, attention, communication, listening skills and brain capacity for literacy and numeracy. Partnered with neuroscience research collaboration at Northwestern, they are showing that the Harmony Project is using music to enhance the neural development of the brain for life long benefits.

The process -- Mentoring with music, teaching children in the most hardship areas to play increasingly challenging works in ensembles with other children over multiple years, while at the same time developing a child's social and emotional skills. This provides a life enhancing positive network of social support for their entire childhood, transforming socially, emotionally and cognitively.

The results in America have been outstanding, with awards and recognition from The White House and the U.S Dept of Education, They view the project as an essential intervention that enables children facing the challenges of poverty to boost their own cognitive capacity and go on to access a full education and lead a positive productive life. By keeping at-risk youth safe, in school, and out of trouble in the poorest, high crime and deprived communities.