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Can parent and practitioner training which encourages regular early years music making opportunities, contribute to closing the school ready literacy attainment gap?

The latest neuroscience research is revealing the power of early years music making to strengthen children's auditory processing system which in turn strengthens foundations for literacy. Could training for practitioners and parents of children in early years, covering music programmes for regular practise as part of everyday activities, contribute to closing the school ready literacy gap? Let's consider the evidence.

A 'whole-brain' workout

Studies show us that early years music-making activities draw on various areas of the brain simultaneously, facilitating many different aspects of development and providing one of the most effective influences on brain development at this key stage. Music is a multisensory experience that involves three ways of learning: auditory, visual and kinaesthetic. Similarly, the brain is a multisensory organ, and this could partially explain the remarkable benefits: music activates all three cortices (motor, visual and auditory) of the brain.

Anita Collins, researcher in neuroscience and music education at the University of Canberra described the effect of music as "*like fireworks going off in the brain […] Music is a whole brain workout.*" Following many years of research evaluating the findings of neuroscience studies into the 'musicians advantage', she concluded that: "*Music education is the key to raising literacy and numeracy standards. The evidence suggests that children who undertake music education have higher levels of cognitive capacity (especially regarding language acquisition and numerical problem-solving), tend to remain in education for longer, and earn more across their lifetime. Even better news is that it can also reverse the cognitive issues relating to disadvantage*." (For more information visit anitacollinsmusic.com)

The school ready literacy attainment gap

Research shows many children in poverty are less school ready than their peers, creating an 'attainment gap'. The biggest gap is in literacy skills. ICAN communication charity research found that 1 in 4 children start school without the literacy skills they need at this stage. Without these crucial foundations, they never catch up.
A 2015 study By Nina Kraus, PhD, & Samira Anderson, AuD, PhD, found that a low socio-economic status can be linked to impaired auditory processing. Children raised in homes with lower-income and less-educated parents are at an auditory disadvantage compared with children who come from more privileged circumstances. This gap begins early—children

from low socioeconomic status (SES) backgrounds add 30 percent fewer words to their vocabulary between the ages of 18 and 24 months compared with children from high SES backgrounds. Even at 18 months, high SES children have faster processing speeds on receptive language processing tasks than low SES children. The reduced language input and decreased exposure to socially and intellectually stimulating experiences that are associated with low socioeconomic status underlie the relationships of SES with reading and language.

Narrowing the gap by strengthening the auditory processing system through music practise

A significant neuroscience project which continues to provide evidence of music's impact on the development of the neural pathways that support strong literacy skills, is called Brainvolts, the work of researchers at the Auditory Neuroscience Laboratory based at Canada's North Western University. Through a series of innovative studies involving thousands of research participants from birth to age 90, the researchers at Brainvolts project have found that our lives in sound shape the biological infrastructure of the auditory system, and the strength of the auditory system impacts on cognitive function generally (communication and literacy skills specifically).

A publication issued by Brainvolts in 2016 (bit.ly/2wrOodM) offers a review of studies of music training that employ a biological approach to reveal the integrity of sound processing in the brain. Together, these experiments show that music works in synergistic partnerships with language and literacy skills, and demonstrates that **regular music practise refines the auditory processing system like no other activity**, with literacy skills (language, reading, sound-to-meaning connections) contingent on the strength of the auditory processing system.

When we first learn to read, it is not our visual but our auditory abilities that determine how easily we transform the letters on the page into words. It is the skill of the ear not the eye that determines how easily a child learns to write and spell. Specifically, it is the skill of fine-tuned discrimination of individual sounds. There are two proven ways to boost this skill: training in phonics and training in music. Phonics is most commonly used in schools. The UK National Literacy Strategy – Letters and Sounds Phase 1 (3–5 years) recognised the important part music plays in developing strong foundations for phonics and recommended that music should be part of everyday activities in the preschool year. Latest research has established that regular music practice is just as effective, if not more effective, than training in phonics when it comes to reading success ('Reading skills can be predicted based on auditory abilities' (Hornikel, Chandrasekaran, Zecker, Kraus 2011)).

(*see reference to US studies below that provide evidence of the link between auditory processing skills, socio-economic status (SES) and academic achievement)

Early years music training for practitioners and parents to boost school ready literacy

With all this evidence, it is surely time to include early years music intervention programmes as part of any strategy that aims to narrow the school ready literacy gap. The great news is

that you don't need to be a musician to lead effective music-making activities to boost auditory processing skills in early years; you just need the training and resources – and the confidence will come with practice. Even better news is that music workshops provide a great way to engage parents and encourage home practise. At the recent AFA Conference early parental involvement was seen as key to closing the school ready attainment gap. So evidence would suggest that combining the music practise and parental engagement would indeed contribute to narrowing the gap.

An evaluation of Boogie Mites early years music education programmes

Boogie Mites write songs and compile music programmes with the aim of enabling practitioners and parents to access engaging, creative music resources to support learning in the EYFS. Boogie Mites Tutor team deliver aren't education courses under Local Authority Contracts in Surrey and Hampshire for working with disadvantaged families. We work with approximately 800 parents under these contracts each year. The objective is to empower parents to use music to boost delayed development. In 2013 Chichester University Early Years Researcher Nikki Fairchild, conducted a study of these courses to evaluate the impact. The findings showed impact on parental engagement, home practice and confidence, with benefits on children's development perceived as most significant for children with SEN or EAL.

You can download the Full Report of Chichester University Evaluation of Boogie Mites Early Years Music Education Programmes.

From the findings it can be suggested that the combination of appropriate and relevant facilitation of early years music making programmes, parent confidence and engagement, and the link between music, home learning and the EYFS prime areas of learning played a key role in children's and parents' development. These three aspects need to be viewed holistically and have equal importance in supporting the growth in music practice shown both in parents and children. It is the fusion of these three elements which seems to support the impact the Boogie Mites programmes had as highlighted by the data described in the findings section

The first area is the facilitation of early years music making programmes. The facilitation of the Boogie Mites programmes (Babies, Minis and School Ready) by the music leaders were viewed very positively by all parents as they encouraged participation and allowed experimentation in a safe environment. They were the mediators between the settings/schools and home and supported the development of home practice. The positive attitudes of the facilitators encouraged and supported the parents. This provided an opportunity which promoted the group to work together supporting the transition of parents from working alone to working as a group. This transition allowed parents the chance to gain a wider support network over and above the music activities on offer. It is, perhaps, because Boogie Mites facilitators are early years trained and not classically trained musicians that they are able to relate to and make connections with all parents, children and practitioners without taking the privileged position of the 'more knowledgeable other'.

Secondly, the Boogie Mites sessions were an important factor when encouraging parents to make the links between the EYFS prime areas of learning and the use of music both at the session and in the home. The fact that parents were practicing and using their skills at home could lead to music becoming embedded into home practice. The home practice took many

forms such as 1:1 or family activities, making and using instruments and singing with the CD. In many cases parents have indicated the small size of the Boogie Mites music groups and the personalisation by the music leaders contributed to its success. Boogie Mites have the same goal as the commissioning settings which is to engage parents in fun activities, transfer knowledge about the EYFS benefits, encourage home learning and signpost them to other services. The programmes researched have a high percentage of target families who stay for the full six week programme.

And thirdly, all parents reported that they felt more confident to use music with their children at home and as part of everyday life. Whereas previously they said they used music for recreational purposes or in the background, they commented how much of a primary role it now played in their lives. The parents' increased confidence had a knock on effect on their child's confidence. Boogie Mites songs have popular music styles which have been chosen to engage the adults and children making them culturally relevant to life today. During the sessions the use of home-made props and instruments mean that every child and parent has one which are used during the sessions which makes for an inclusive environment. Boogie Mites provides a completely different format of funky songs (such as jazz, rap, reggae, calypso, boogie woogie styles), actions, props and instruments, and 12 aims to get parents to take it home into everyday life. This coupled with the increased parent confidence suggests music practice will become embedded at home which could lead to greater parental engagement in other aspects of their child's development and learning.

Boogie Mites have trained thousands of early years parents and practitioners all over the UK and work with many schools to support parental involvement and the transition process throughout the pre-school years. We receive excellent feedback regarding the impact on practitioner and parent knowledge, confidence and regular practice. More research needs to be undertaken to evaluate the impact on pre-school children's development. The factors that determine what makes the music training effective also need to be evaluated.

To find out more, email sue@boogiemites.co.uk or visit boogiemites.co.uk. You can download a taster song and ideas for effective early years musical activities from the website home page.

* US studies below that provide evidence of the link between auditory processing skills, socio-economic status (SES) and academic achievement:

Auditory processing skills, known to be important for language development (Benasich et al., 2002, 2008;Boets et al., 2011; Goswami et al., 2011), may contribute to the link between SES and academic achievement. Musical training is an avenue of enrichment that may counteract some of the auditory deprivation endemic to low SES environments. A number of studies have revealed that children undergoing music training have stronger cognitive abilities, vocabulary, rhythm perception and production (linked to reading skill), perception of vocal pitch, and perception of speech in noisy backgrounds than non-musician children (Ho et al., 2003; Schellenberg, 2004, 2006; Magne et al., 2006; Forgeard et al., 2008b; Hyde et al., 2009; Moreno et al., 2009, 2011; Strait et al., 2011; Dege and Schwarzer, 2012; Strait et al., 2012; Slater et al., 2013; Chobert et al., 2014; Seither-Preisler et al., 2014; Strait and Kraus, 2014). Additionally, musical practice can strengthen children's auditory encoding of speech (Magne et al., 2006; Besson et al., 2007; Chobert et al., 2011; Strait et al.,

2011, 2013; Tierney et al., 2013; Chobert et al., 2014; see Strait and Kraus, 2014 for a review), auditory discrimination and attention (Koelsch et al., 2003; Moreno et al., 2009; Chobert et al., 2011; Putkinen et al., 2013), and lead to structural changes in auditory cortical areas (Hyde et al., 2009; Seither-Preisler et al., 2014). The auditory benefits of music training have direct implications for language skills and academic achievement (Hetland and Winner, 2010; Corrigall and Trainor, 2011; see Tierney and Kraus, 2013 for a review); accordingly, music may serve as an effective training tool for children with learning and attention impairments (Overy, 2003; Bhide et al., 2013;Seither-Preisler et al., 2014). Brainvolts laboratory has shown that participation in music training through Harmony Project can reinforce literacy skills for children in primary/secondary education, enhance the perception of speech in background noise, and strengthen the neural encoding of speech sounds in children from low SES backgrounds (Kraus et al., 2014; Slater et al., 2014; Kraus and Strait, in press).