

‘Sing Every Day’: The Wider Benefits of a School-Based Singing Project with Disadvantaged Children

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Abstract

The paper reports on a research evaluation of a six-month specialist singing project ‘Sing Every Day’ that was undertaken with young disadvantaged inner-city 6yo children in the London Borough of Hackney. A team of professional singers from the London-based VOCES8 Foundation visited two classes in each of two primary schools to provide focused mentoring to generalist (non-music specialist) class teachers. Children from two identically aged classes in a neighbouring school acted as controls. The mentoring embraced a specially designed programme of singing and vocal activities across two school terms. This was undertaken in each classroom with the staff and their Year 1 children numbering $N = 121$ in total. An independent evaluation of the impact of the project included both musical and other-than-musical measures of children’s development. In particular, in addition to an assessment of participant children’s singing behaviours at the start and at end of the project, other assessments included measures of possible changes in children’s reading development and in aspects of Executive Functions. Overall, the implications from the data are that the mentored classroom-based singing activities resulted in significant improvements in children’s singing, as well as positive changes in reading and aspects of Executive Function related to inhibition and phonological working memory – the latter being closely correlated to changes in the same children’s reading scores. Although there is previous research literature reporting positive links separately between music, singing, reading and aspects of Executive Functions, this small-scale study is one of the first to explore these three aspects collectively. As such, the current data suggest that more detailed research would be useful, both in seeking possible replication of the findings with a larger group of participants and also to understand the mechanisms of such possible linkage in terms of both basic research and also its implications for music pedagogy.

Keywords: children’s singing, mentoring, VOCES8.

Introduction - background and aim

It has been reported that early music experiences can have a beneficial impact on a wide range of developmental features in children, embracing cognitive, emotional, physical and social domains (see Barrett et al., 2019; Hallam, 2015; Schlaug, 2015; Silvia et al., 2016; Welch et al., 2020 for reviews). For example, a recent Canadian population-level analysis of associations between school music participation and academic achievement of $N = 112,916$ children in Grades 7-12 in British Columbia (Guhn et al., 2019) found that music participation (vocal and instrumental) was related to higher Provincial examination scores in mathematics, science and English (controlling for participants previous academic achievement and sociodemographic backgrounds). In a smaller-scale, longitudinal study, $N = 265$ children in Grades 1 to 8 (ages 6 to 14) from a school in an economically disadvantaged neighbourhood of a US city were selected by lottery to participate in an out-of-school music programme (Holochwost et al., 2017). This offered individual- and large ensemble instrumental education over a two-year period, based on El Sistema model from Venezuela. Compared to matched controls, the impact of programme enrolment included higher levels of academic achievement, as measured by standardised tests in reading, mathematics, and language arts, and superior performance on select tasks of short-term memory (STM) and Executive Functions (EFs) – the latter seen as foundational cognitive capacities that include working memory, inhibition and cognitive flexibility (Bowmer et al., 2018).

Internationally, UNESCO (2019) defines 'early childhood' as 0-8 years and highlights (2016) four main profile areas by which early childhood development can be assessed. These are executive function, social and emotional development, motor development and early literacy and numeracy. For each of these four areas, there is a growing database of research literature that demonstrates that these can be nurtured through sustained engagement in musical activity. This is evidenced in studies on children's executive function (e.g., Bowmer et al., 2018; Bugos & DeMarie, 2017; Frischen et al., 2019; Moreno et al., 2011; Zuk et al., 2014), social and emotional development (Alemán et al., 2017; Barrett, 2011, 2017; Hallam, 2010; Welch et al., 2014), motor development (both in children, Derri et al., 2001; Zachopoulou et al., 2004, as well as in child and adult musicians, Schlaug, 2015), and also concerning early literacy and numeracy (Anvari et al., 2002; Cohrdes et al., 2016; Moritz et al., 2013; Williams et al., 2015).

Nevertheless, one of the challenges in the provision of effective music education in childhood is the level of confidence, expertise and musical self-efficacy of the teachers. A wide range of studies have reported that generalist teachers often lack confidence when it comes to organising the teaching and learning of music [e.g., Mills (1989), Hennessy (2000, 2017), Stunell (2006) and McCullough (2006) in England; Stakelum (2008) in Ireland; Ballantyne (2007), Barton (2015) and Jeanneret (1997) in Australia; Bresler (1993) in the USA, and also in non-English speaking countries, such as Austria, Italy, Netherlands and Slovenia (Biassutti et al., 2015), Portugal (Mota, 2015), and Brazil (Mateiro, 2011)]. However, there is evidence that focused instruction can improve children's singing abilities (Demorest et al., 2017; see Welch, 2016/2019 for a review), such as demonstrated by the UK Government's National Singing Programme Sing Up (2007-2012; see Welch et al., 2012).

Furthermore, a recent Australian initiative was designed to address this professional need in generalist teachers through the creation of a National Music Teacher Mentoring Program (NMTMP). This was piloted in 11 Australian primary schools, drawn from New South Wales (20-week implementation in eight schools) and Victoria (10-week implementation in three schools). The focus for the programme, undertaken with classes of children from Kindergarten through to Year 2 (ages 4-8y), was for seven specialist music educators to mentor 19 generalist classroom teachers 1:1 over one or two school terms, including mentored support in the classroom. The number of children in the mentored classes was 237, with 55 children outside the programme acting as matched controls, making a total *N* of 292. An independent evaluation focused on children's singing and attitudes to singing (Barrett et al., 2018/2020, 2019) and reported that the intervention was successful. Children in the mentored classes improved significantly over time on both measures (singing and attitudes) compared to the controls, particularly Year 1 children, irrespective of gender or socio-economic status. In addition, 36 evaluative interviews were undertaken with teachers and school principals. Analyses of responses indicated improved teacher confidence, a willingness to share their professional development with colleagues, and the positive impact on the mentee of the mentors' expertise and passion for music.

Overall, these previous studies provide positive precedents for the VOCES8 Foundation and its work in schools. 'Sing Every Day' was a project led by the VOCES8 Foundation (<https://voces8.foundation/education>) in partnership with Hackney Music Service Network (HMS) in London. The aim for the project was the development of young children's singing in two Hackney primary schools. Two

classes of 6yo children participated in each school across two school terms in 2019 (January through to July). The project was designed around regular in-school, whole-class singing sessions, underpinned by mentored Continuing Professional Development (CPD) for the participant generalist Class Teachers. Each CPD session, eight in total – four in the Spring Term and four in the Summer Term – lasted approximately one hour and was led by a professional singer from the VOCES8 team. The musical content with the participant classes drew on a portfolio of specially designed activities, including theme-based exemplar song and vocal development materials. Children from two equivalent-aged classes in another Hackney primary school who did not receive the specialist music input acted as ‘controls’ to the four ‘project’ classes. The total number of children participating were $n = 86$ in the two project schools and $n = 35$ in the control school. An evaluation of key features of the project was undertaken by a team of independent researchers from the International Music Education Research Centre (iMerc) at the University College London (UCL) Institute of Education, working in close collaboration with the VOCES8 Foundation, HMS and the three participant schools.

Methodology

The aims of the partnership were to evaluate musical and selected wider benefits of a structured singing programme in two primary schools in Hackney. The research evaluation drew on a range of established research tools in a combined, mixed methods approach (collecting quantitative and qualitative data) in order measure particular impacts in and through singing.

In terms of the features of the evaluation that are the foci for this paper, the impact assessment protocol included:

- **Demographic measures** of children’s general profiles, including data in relation to the official UK Indices of Multiple Deprivation (IMD) as applied to their localities; IMD is the official measure of relative deprivation for small areas (or neighbourhoods) in England and draws on seven domains of deprivation (Ministry of Housing, Communities and Local Government, 2019); Hackney has the second highest levels of relative deprivation of all the London Boroughs, with

just under half of its LSOAs⁴ (small neighbourhood areas) in the highest quintile (20%) nationally. Hackney also has a high proportion of its LSOAs in the most deprived 10% nationally on the Income Deprivation Affecting Children Index (IDACI) (Leeser, 2016) and has a high proportion of children from Black and Minority Ethnic (BAME) backgrounds;

- Measures of individual **children's singing behaviour** and development, drawing on elements of an established protocol (Welch, 1998) used for the five-year evaluation of the UK Government's National Singing Programme *Sing Up* (2007-2012) and which were also adapted for the NMTMP evaluation in Australia (Barrett et al., 2018/2020);
- **Reading attainment**, using in-school data; and
- Measures of aspects of participant children' **executive functions**, a multi-dimensional cognitive construct that refers to gaining strategic control over personal mental/metacognitive process, such as related to working memory, inhibition and cognitive flexibility (Bowmer et al., 2018).

All data were collected in line with the latest British Educational Research Association's (BERA) Ethical Guidelines (2018) and with formal approval from the UCL Institute of Education Research Ethics Committee (18th January 2019, No. Z6364106/2019/01/85). UCL's new ethical approval process required all the participants to provide formal agreement to take part in the evaluation. This embraced the school (headteacher), teachers, parents and children. Consequently, although all children in the focus classes took part in the VOCES8 Foundation singing activities, only a subset of these had all the elements of the ethical permissions and were available for the impact evaluation data collection. In addition, some of the children were absent or unwell on the research visit days and so had incomplete datasets. Therefore, the full analyses have been based on $n = 63$ children for whom we have complete datasets across the three schools, $n = 46$ in the intervention schools and $n = 17$ in the control school.

⁴ 'The small areas used are called Lower-layer Super Output Areas [LSOA], of which there are 32,844 in England. They are designed to be of a similar population size with an average of 1,500 residents each and are a standard way of dividing up the country. The Index of Multiple Deprivation ranks every small area in England from 1 (most deprived area) to 32,844 (least deprived area).' London: Department for Communities and Local Government (DCLG), Indices of Deprivation (2015). Typically, each LSOA in England has a population of c.1500 residents (ONS, 2010).

Main findings

Singing

Children's singing was assessed individually at two points in the programme, at the beginning and at the end. The measure of singing competency was based on a child's performance of two well-known songs, one with a limited pitch range (Twinkle, Twinkle) and the other with a more extended pitch range (Happy Birthday). Sung performance was assessed against an established four-point rating scale (Welch, 1998), subsequently converted into a normalised singing score (NSS) out of 100 for comparative analysis against other measures. The scale is a gauge of the development of in-tune (and, by implication, in-time) singing. The scale had been used previously as part of the evaluation of the National Singing Programme in England (Welch et al., 2009, 2010), as well as in earlier research with Chinese children in Hong Kong (Mang, 2003). It was also used in the recent NMTMP research evaluation in Australia (Barrett et al., 2018/2020).

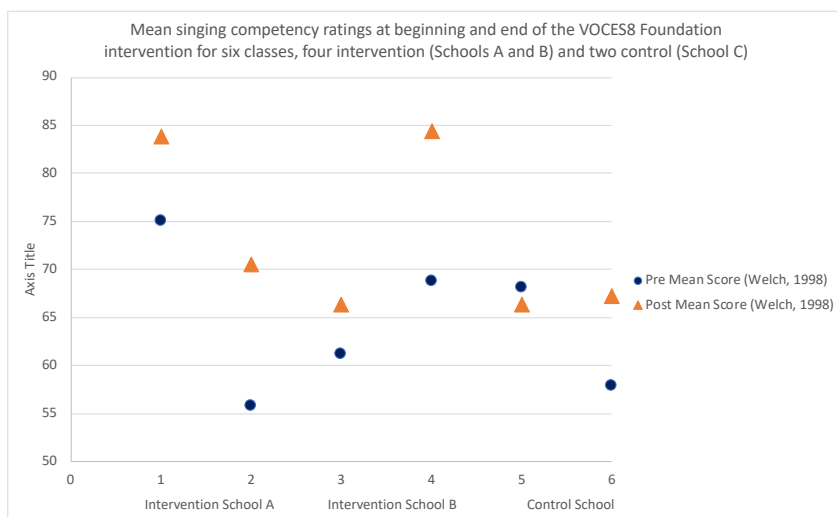


Figure 1. Mean singing competency ratings (Welch, 1998) for each of the six classes over time (the 4-point scale has been converted to out of 100; a score of 25 = speaking; a score of 100 = perfectly in-time and in-tune).

The participant children's singing was plotted against the two time points (beginning and the end of the 'Sing Every Day' project). As can be seen from the mean data in Figure 1, participants in five of the six classes (4 intervention and 1 control) had improved singing ratings by the end of the six-month project. Overall, there was a statistically significant improvement across all three schools [$F(1, 57) = 11.481, p < .001$]. In each school, there were some children who had developed their singing competency much more than others, whilst other children appeared to have made little progress. Nevertheless, collectively, the change bias over time in the overall mean distributions is positive, especially for three of the four classes in the two intervention schools.

In order to understand why children in one of the 'control' school classes also improved on average (albeit noting that this was a relatively small number of children) despite not being in a mentored class, there are two possible reasons. Firstly, it is to be expected that there may be positive changes in children's singing competency over two school terms (six months), especially in girls – as evidenced in a large national dataset of over 11,000 children (Welch et al., 2012) – and, secondly, this particular class teacher was the control school's music specialist, and so might be expected to have a strong focus on singing in her class.

The relationship between participant children's singing development and other measures

With regards any possible wider benefits that might have accrued from the singing project, analyses were undertaken of possible significant correlations between children's singing behaviours and the same children's responses on other focus measures, namely (a) in-school reading assessments and (b) aspects of Executive Function – working memory, inhibition and phonological working memory.

As can be seen from Figure 2, children's singing ratings were more positively correlated at the end of the project (blue data/right side data) with (a) their reading attainment (using in-school assessment data) ($r = .298, n = 51, p < .05$) and (b) two aspects of Executive Function that required them to draw on phonological working memory ($r = .283, n = 51, p < .05$) and inhibition ($r = .501, n = 51, p < .01$). Such statistically significant relationships were not evident at the start of the project six months earlier (green data/left side data). Separately, there were strong significant correlations between participant children's reading assessments and their Executive Function measures for working memory and phonological working memory.

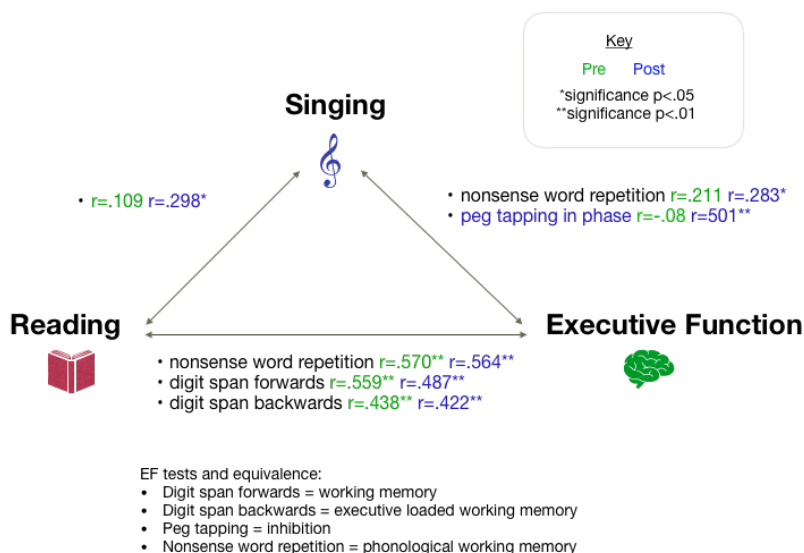


Figure 2. Correlations between participants' singing, reading and executive function data at the beginning and end of the VOCES8 Foundation 'Sing Every Day' project.

Discussion and conclusions

Although this could be considered to be a relatively small-scale research evaluation in terms of the numbers of participants for whom complete data sets are available, nevertheless, the results are encouraging, both for the VOCES8 Foundation in their community-based work in schools, and also for the wider academic community who are engaged in similar evaluative research on the potential wider benefits of music participation. Overall, the implications from the data are that the mentored classroom-based singing activities across two school terms (approximately six months) resulted in improvements in children's singing (on average)⁵, as well as possible benefits in reading and aspects of Executive Function – the latter being closely correlated to changes in the same children's reading scores. Although the underlying bases for such

⁵ Just for comparison, in the Barrett et al. (2020) Australian mentoring study mentioned in the introduction, the mean participant singing score (based on the Welch, 1998, rating scale) after the class-based intervention was 2.94, which equates to 73.5 in a normalised scale out of 100. The mean singing score for the children in the four intervention classes at the end of the 'Sing Every Day' programme was virtually identical at 76.2.

a potential combination of relationships needs more detailed exploration, the findings are in line with that reported elsewhere in the literature for pairs of elements (singing and reading, singing and Executive Functions).

In addition, separate qualitative research data⁶ analyses suggest that the participant generalist teachers and their teaching assistants collectively benefited from being mentored by professional singers who drew on an experienced background in working with children and in offering school-based support as part of their portfolio careers (cf Barrett et al., 2019; Saunders et al., 2011). This was evidenced in our observations of the teachers' own singing in their classes in the absence of their mentors and also from the staff comments about their positive experiences on the project⁷. Even though they might still feel nervous and apprehensive about singing with their classes at times, each reported a greater willingness to undertake such activity having had this professionally structured experience, not least because the 'Sing Every Day' project culminated in a morning workshop and lunchtime public performance in a City of London church next to St Paul's Cathedral in front of an invited audience of parents, staff and friends. Furthermore, the Foundation reports that, five months after the final mentored workshops, subsequent school visits to the two intervention schools have revealed that the teachers are continuing to sing every day with their pupils, and that colleagues in other classes have begun to include singing more regularly in their own curricula.

The findings from this research evaluation contribute to the emerging picture of potential wider benefits of music in general, and singing in particular, to children's overall development (as well as across the lifespan). The possible links between singing, reading competency and Executive Functions have been reported separately elsewhere (see above), but this is one of the first studies to explore these aspects collectively. The results are encouraging and provide a basis for further exploration as we seek to understand what it is about the sung (musical) experience that can be more (or less) effective in nurturing both musical competence and also wider development.

⁶ Because of space limitations in this ISME Research Commission Seminar submission, examples of the observational and interview data can be found in our main evaluation report to the VOCES8 Foundation which they will publish.

⁷ A video of the 'Sing Every Day' programme was commissioned to capture essential elements of the experience for participants. This includes oral feedback from the participant non-specialist teachers on the impact for them. The video is available for public access at:

<https://voces8.foundation/sing-everyday> and on YouTube
<https://www.youtube.com/watch?v=9je678yMaFo>

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