Music and Singing
Research Digest
Is there any research around the impact of teaching signs through song or the benefits that we see in pupils singing and taking part in a choir?
The research around music and singing for our pupils is really interesting and there is a great deal of support for how great it can be - keep on singing! (De Vries, Beck, Stacey, Winslow & Meines, 2015; Gold, Wigram & Elefant, 2006; James et al., 2015; Lee, 2009; Paul et al., 2015; Ross, 2016; Vaiouli, Grimmet & Ruich, 2015). This digest will look at the benefits of music and singing more generally.

Anecdotally there has always been a lot of support for the positive impact that music can have for our pupils. Music has also long been promoted as an effective therapeutic support (for everybody) both when used formally in terms of “the professional use of music and its elements as an intervention in medical, educational, and everyday environments with individuals, groups, families, or communities who seek to optimize their quality of life and improve their physical, social, communicative, emotional, intellectual, and spiritual health and wellbeing” (World Federation of Music Therapy, 2011) as well as more informally during the school day - music sessions in class or singing during greetings, transitions and just for fun! Music is felt to be particularly beneficial for our pupils because it can address some of the main areas of need that they may have.

**Where can music help?**

One of the big benefits of music is that it impacts on so many areas of development in one go (see the figure below (pg. 2) taken from Srinivasan & Bhat, 2013).

Music and singing have been shown to help support, to varying degrees, the development of joint attention (Kim, Wigram & Gold, 2008; 2009), verbal (Lim, 2010; Sandiford, Mainess & Daher, 2013), and non-verbal communication (Kim et al., 2008), social skills and reciprocity (Finnigan & Star, 2010; Kern & Aldridge, 2006), multisensory perception (Wan & Schlaug, 2010a), motor skills (when singing and dancing are used together to promote the use of body movements to musical rhythms), behaviour regulation skills (Carnahan, Musti-Rao & Bailey, 2009; Gunter & Fox, 1993), independence and managing transitions (Kern, Wolery & Aldridge, 2007)! The use of music to support joint attention and engagement is also something that families can easily do (and enjoy doing) (Thompson, 2014). It has also been identified as being a particularly promising way to support communication development in pre/non-verbal children and young people (Wan, Demaine, Zipse, Norton & Schlaug, 2010; Wan & Schlaug, 2010b).
Why music?

Music is a human universal. As a general area of research it is widely acknowledged as being a fascinating and mysterious thing - how it is that patterns of sound can be so enjoyable and can have such powerful and varied effects in our lives (Overy & Molnar-Szakacs, 2009). Music seems to have been deeply embedded in our evolution (Zatorre & Salimpoor, 2013). Music and song is considered to have preceded language as a means of emotional communication and promoting social cohesion with deep roots in the areas of our brain responsible for emotion, reward and memory (Clark, Downey & Warren, 2015; Dunbar, 2016).

Overy & Molnar-Szakacs (2009) describe very clearly why music and singing is so great:

“Music is an engaging, multisensory, social activity. All musical sounds are created by movements of the human body (singing, clapping, hitting, blowing, plucking) and seem to encourage other bodies to move (clapping, tapping, marching, dancing). Music-making usually occurs in groups (dyads, circles, ensembles), and involves the use of physical actions in time with the music. Such physical, social, synchronized interactions involve imitation, learning, shared understanding, and prediction, and can encourage eye contact, smiling, laughter, and relationship building, while also allowing for individual expression—all powerful social learning experiences.”
This is one of the reasons why it can help develop social reciprocity skills through joint attention and shared experiences “being together in time”. This ‘being together’ also underpins the rationale for Intensive Interaction. We know that, in neurotypical individuals, when two or more people perform a task together, each individual forms an idea of not only what they are doing but also of what the other person is doing (Novembre, Ticini, Schütz-Bosbach & Keller, 2012), and although it is not as clearly understood, this may also be what is being facilitated in pupils with complex needs when we are ‘being together in time’. Music can also provide an element of certainty, it can be one piece of consistency during inconsistent situations (such as during transitions).

Music and singing are also great because they circumvent one of the key areas of difficulty our pupils have - verbal communication – the spoken (as opposed to sung) word. It also plays to our pupils’ strengths.

**Music as an area of strength**

Autistic individuals have been shown to have enhanced musical understanding (Heaton, 2003), enhanced pitch perception abilities compared to typically developing children, including enhanced pitch memory, labelling (Heaton, 2003), and discrimination (Bonnel, Mottron, Peretz, Trudel & Gallun, 2003; Srinivasan & Bhat, 2013). There is also a growing amount of neuroscientific evidence that is providing further evidence as to why music/singing might be an area of strength for autistic individuals in particular.

Structural differences in how our brains are connected that are thought to impact upon autistic children and young people’s speech (production and reception of) do not appear to have the same impact upon song (Lai, Pantazatos, Schneider & Hirsch, 2012; Sharda, Midha, Malik, Mukerji & Singh, 2015).

The potential that our pupils may engage with and enjoy singing with others to a greater extent than simply speaking points to the benefits to group singing that have been shown in population as a whole will also be experienced by our pupils. This may be particularly using in supporting the development of socio-cognitive skills, helping to understand others (Tarr, Launay & Dunbar, 2014). Singing together can increase social bonding (Pearce, Launay & Dunbar, 2015; Weinstein, Launay, Pearce, Dunbar & Stewart, 2016), resulting in more explicit closeness between individuals (i.e. speaking more, knowing more about each other) (Pearce, Launay, MacCaron & Dunbar, 2016) but also more implicit closeness, on a physiological level through the synchronisation of breathing and heart rates (Müller & Lindenberger, 2011; Vickhoff et al., 2013). This connection on a physiological level that co-occurs, often spontaneously (Codrons, Bernardi, Vandoni & Bernardi, 2014) with a connection on an explicit social level highlights the possibility that psychosocial processes are operating at the physiological level (Palumbo et al., 2016).

If collaborative music making can support pupils to have a better understanding of those physiological processes that appear to be highly related to psychosocial processes it may well help to address common areas of difficulties in this area for our pupils. This is particularly important given the differences that autistic individuals often have in their ability to understand internal sensory information (see Interoception in Part one of our Sensory Differences digest!).
Research at The Bridge

Whilst there is a growing body of evidence around the benefits of music and singing there is also an acknowledgment that there needs to be more (James et al., 2015) particularly with PMLD pupils. This is a particularly exciting area of research because it seems that neuroscientific, psychological and educational based studies along with anecdotal evidence from practitioners are all pointing to the same thing.

More methods and tools are being developed to help evaluate the benefits of music and singing for our pupils (Srinivasan & Bhat, 2013) therefore the potential for exploring the impact singing and music to support communication development, anxiety around transitions and social reciprocity at The Bridge is huge. I know music is used a lot so it is just a question of starting to examine the impact it is having. If you are able to track her down April at Secondary is doing some really interesting research in this area too!

If anyone would like to start looking at the impact that singing and music (or anything else that you are up to) is having or could have just let us know! research@thebridge.islington.ac.uk
References


