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Fostering Musical Cultures in Schools: Broadening the Role of Music Therapy in a Special School Setting to Build Teaching Staff Capacity

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Abstract

Teachers working in special education school settings often lack confidence to deliver classroom music programs. Music therapists working in special schools may be well suited to collaborating with teacher colleagues to improve musical confidence and skills. This action research project worked with teaching staff of three special education classes to design and deliver a collaborative music program. Data sources were focus group discussions and weekly online surveys, triangulated with the researcher's field journal. Subsequently, reflexive thematic analysis identified four overarching themes in the data: listening inside the musical culture of a school;

building capacity by accessing the music child; musicking for brain care; and removing barriers to success. This informed a refined framework supporting delivery skills to improve teaching staff musical capacity. Rehearsal of such an approach can facilitate "delivery without fear" experiences for participants. Therefore, this study informs pre-service and professional development teacher training, where a scaled-up model can be applied.

Introduction

A collaborative approach to the transfer of knowledge between allied health professionals such as music therapists and educators is a developing area. This study explores how first author JW attempted to address an observed need in her workplace by supporting and training teaching staff to effectively deliver quality classroom music programs. The transfer of JW's professional music therapy knowledge within an action research (AR) framework occurred with teaching staff in a specialist school setting (SSS) in a large metropolitan city in New South Wales (NSW), Australia. Whilst employed as a teacher at this school, JW observed a general reluctance to teach classroom music amongst colleagues due to a lack of confidence in their own musical skills. Research has shown there is no consistency in the pre-service training of generalist primary teachers in preparation to deliver music in the tertiary institutions of Australia (Hocking, 2009). This is unsurprising given the diminishing presence of music as a subject in the primary curriculum, down to just one of five domains within a Creative Arts subject. This decline is occurring despite the growing body of evidence that music is supportive of brain-care and brain development (Collins, 2014a). The dissemination of this project aligned with the projected rolling out of the NSW Department of Education's Creative and Performing Arts Syllabus[1] and aims to provide ongoing support for teaching staff to navigate the new syllabus with greater confidence. This collaborative study explores how a music therapist can build teaching staff capacity to support their students using music in the classroom.

Literature Review

Music as Therapy

Music Therapy (MT) is defined by the Australian Music Therapy Association as a research-based allied health profession in which music is used to actively support people as they aim to improve their health, functioning, and wellbeing (Australian Music Therapy Association,

[1] At the time of submission, the NSW Department of Education's Creative and Performing Arts Syllabus is still in draft format. The current syllabus was released in 2006.

2023). MT has a tradition of evidence-based practice, with research published internationally across domains including medicine, psychology, and education (Baker, 2015; Jacobsen et al., 2019). Different theoretical approaches such as neurological, humanist and post-humanist, analytical, developmental, and cognitive behavioural approaches inform MT (Cohen, 2017; Jacobsen et al., 2019; Wheeler, 2015).

Nordoff-Robbins Music Therapy (NRMT) is a music-centered approach to MT that incorporates improvisation featuring careful listening and musical responsiveness within a therapeutic relationship (Guerrero et al., 2017). NRMT builds on the humanist anthroposophical belief that every human being has an inborn capacity to find meaning in musical experiences; this is sometimes referred to as the *music child* (Nordoff & Robbins, 1971; 2007). A feature of the NRMT approach is the importance of the *co-therapist* to assist and support in the sessions (Fachner, 2016). NRMT grew out of work with children–especially children with autism–in special education schools and continues to evolve alongside the rapidly changing research and practice environments driven by the current post-humanist movement (Ansdell & Stige, 2018; Shaw, 2022). Developments in research across music therapy and music education are often changing how music specialists approach applications into practice, with new knowledge stemming from education, psychology, linguistics, and social science disciplines.

In particular, the findings from neuromusical research over the last fifteen years have revealed that participating in musical activities and learning a musical instrument are powerful factors in reinforcing language skills (Swaminathan & Schellenberg, 2020), building and improving reading ability, and strengthening memory and attention (Batley, 2018; Collins, 2014a; Crooke, 2016; Degé & Schwarzer, 2011; Edwards, 2011; Strait et al., 2015). These findings suggest that students in special education settings could benefit from more exposure to music in the classroom and underpin current research about how a music therapist teacher support program can build the capacity of teaching staff to deliver classroom music.

Diminishing Music Education in the Classroom

Engagement with music education in schools worldwide is trending downwards (Petrova, 2012; Russell-Bowie, 2009; Webb, 2016). In Australia, generalist primary teachers[2] deliver five specialist subjects of dance, visual arts, media arts, music, and drama under the one subject of Creative Arts. Queensland is the only state where music as a subject is delivered by a specialist music teacher (Letts, 2017).

[2] In Australia, primary education incorporates students aged 5–12 years. For the purpose of this paper the term *generalist primary teacher* will be used to describe elementary teachers.

Pre-service Classroom Music Teacher Training

A significant issue for music education in Australia, and globally, is how little training tertiary institutions provide generalist primary teachers to deliver classroom music (Barrett et al., 2019; Capaldo et al., 2014; Collins, 2016; Rohwer & Henry, 2004; Sinclair et al., 2009). A report commissioned by the Australian Government in 2009 noted that pre-service music training in generalist primary teaching degrees ranged between 0–52 hours for an entire course, with an average of 17 hours (Hocking, 2009).

Lack of Teacher Confidence to Deliver Classroom Music

Confidence is a significant factor impacting how prepared generalist primary teachers feel to adequately deliver music in the classroom (Collins, 2014b; Hallam et al., 2009; Russell-Bowie, 2009; Stunell, 2010). Self-perception of musicality and beliefs about musical skill levels also play a large role (Austin & Reinhardt, 1999; de Vries, 2018; Russell-Bowie, 2009; Randles & Ballantyne, 2018). Teacher confidence and competence may be linked to musical background and formal musical training (Hallam et al., 2009; Jeanneret, 1997), with some research proactively providing supplementary pre-service training (Collins, 2014b; Jeanneret & Stevens-Ballenger, 2013; Thorne & Brasche, 2020). This study builds on this bank of research to support both pre- and post-service teachers to confidently deliver music in the classroom.

Moving Towards Musicking for Health in Special Education

MT has traditionally been utilised in special education schools worldwide to support students' progress (Bunt, 2003; Nordoff & Robbins, 1971; McFerran, 2015; McFerran & Elefant, 2012; Swanson, 2020). Increasingly, and reflecting wider societal trends, music therapy practice in schools is moving towards an ecological approach where "therapy is integrated into naturally occurring school tasks and routines" (Rickson, 2010, p. 60). Small's (1999) term *musicking* aligns with this ecological approach. Musicking is a verb describing the process of taking part in a musical performance in whatever capacity. Musicking encapsulates how relationships too complex to be articulated with words can be effortlessly performed in musical exchanges (Small, 1999). Musicking is central to this study's strength-based philosophy (Aigen, 2014), which sits at the intersection of special education and music therapy.

A Brain-Care Approach to Special Education

The Neurosequential Model of brain development (Perry, 2009) explains how the brain will bypass any higher order functioning when exposed to stressors and focus entirely on survival. Some special education settings in Australia have adapted this model to support over-sensitised students who are experiencing sensory overload, dysregulation, or overwhelm due to being in a state of fight or flight. This approach has been found to be effective at supporting

emotional regulation because of the emphasis on safe relationships working to calm the brain's sympathetic and parasympathetic responses to stressors (van der Kolk, 2014). The current SSS has adapted what for the purposes of this paper will be called a *brain-care* approach to healthy brain development over the last 10 years to form a comprehensive communication model. All staff at the site for this study are trained in this approach.

Using Music to Support Healthy Brain Development

The effect of music on the *neuroplasticity* in the brain has become an established area of research (Merrett & Wilson 2012; Rodrigues et al., 2010). Neuroplasticity can be described as the way the brain adapts and reconfigures its neural structures and functions in response to internal and external stimuli (Olszewska et al., 2021). The relationship between music and the human brain is complex (Rahman et al., 2022), as the multi-modal nature of music simultaneously lights up multiple areas of the brain in functional magnetic resonance imaging studies (Alluri et al., 2012; Toiviainen et al., 2014). Some studies have explored the effects of the use of drumming as a rhythmic intervention to calm the nervous system when it is in fight or flight mode (Faulkner 2017; Perry, 2009; Stegemöller, 2014); however, McFerran and colleagues (2020) identified the potentially problematic nature of using music in this way with vulnerable populations without an evidence-based practice to guide practitioners. This study seeks to address these concerns through a collaborative framework of sharing professional knowledge between educators experienced in supporting over-sensitised students and a music therapist trained to use music therapeutically.

Moving Towards Collaboration

Collaborative research models such as action research (AR) feature prominently in both the education (Griffiths et al., 2020) and allied health literature (Seaton et al., 2021), with research on collaborative music therapy appearing across both domains (Leung 2008; Margetts et al., 2021; Rice & Johnson, 2013; Short & MacRitchie, 2023; Twyford & Watters, 2016). Short and Heiderscheit (2016, 2023) concluded more interprofessional collaborative research, education, and training is needed to advance the field of music therapy in the future. AR appears frequently across education and allied health literature as a methodology (Badia, 2017; Bobis & Erwing, 2017; Casey et al., 2021; Manfra, 2019) as it recognises the potential for change as more powerful when it comes from and within lay and professional practice (Stige & McFerran, 2016). This study, following the others who have used AR (see Baker, 2007; Elefant, 2010; Hunt, 2005; Rickson, 2009), contributes to this larger body of collaborative research.

Practice-Based Professional Learning in Education

The use of AR in this study is situated within a broader framework of practice-based professional learning. Situated learning (McLellan, 1996) or learning *in-situ* in the context of

the classroom, allows teachers to engage with and apply newly learned instructional strategies immediately (Loose, 2020). Rutten (2021) advocated for future studies to explore what it means to learn through practitioner inquiry, as opposed to one-off professional development conducted outside of the classroom. The current study worked with teaching staff to reflect on their learning in context, a practice that can be neglected in professional learning environments (Jamil & Hamre, 2018) that typically preference instructional time to meet the requirements of curriculum teaching standards (Loose, 2020). Collaborative contextualised learning can address the issues of time and sustainability which may be major barriers to professional learning for teaching staff (Loose, 2020).

Building Capacity of Research Participants and the Link to Sustainability

The capacity of teachers to deliver music is impacted by musical self-efficacy, pre-service education, and formal musical training (Collins, 2012, 2014b). An Australian case-study identified factors such as principal support and developing a community of practice as vital in creating an environment where generalist primary school teachers feel confident to teach music (de Vries, 2015). To create and grow a sustainable school musical culture, Rickson and McFerran (2014) developed a community music therapy approach. Community music therapy is an approach to working musically with people in their own context (Ansdell, 2002, 2016), encapsulating how music can be used "intentionally to enhance connectedness" in communities (Steele, 2016, para. 1). In a school context where MT has traditionally focused on therapeutic *interventions* to work towards students' educational or behavioural outcomes, Rickson and McFerran (2014) urged that this focus be replaced with programs to encourage positive participation. Engaging learners to be active in the "co-construction of knowledge" (p. 11) is relevant to this study's framework of practice-based professional learning and sustainability due to the interconnectedness of the players involved. Steele and colleagues (2020) recommend focusing on the wellbeing of the teachers to sustain the outcomes of the music support program instead of an unbalanced focus on student needs and outcomes. These studies underpin this current study that aims to support teaching staff to confidently deliver their own classroom music program.

Research Questions

Research questions of this study address gaps at the junctions of music therapy research, critical reflective educational research, transdisciplinary research, and research about a brain-care approach to education.

Primary Question

How can a music therapist collaboratively develop and implement a classroom music program with the teaching staff in a special school setting?

Secondary Questions

1. How could a collaborative approach build the capacity confidence and skills of teaching staff to deliver an engaging classroom music program?
2. How might a collaborative approach to planning a classroom music program support over-sensitised students with self-regulation?
3. What factors may be needed for the program to be sustainably implemented and replicated across the pedagogy of the research setting?

Methodology

Action Research

Action research (AR) is an umbrella term for collaborative research approaches dealing with needs for change in lay and professional practice (Mills, 2017; Reason & Bradbury, 2008; Stige & McFerran, 2016). AR is a cyclic design, whereby researchers and co-researchers combine observations and reflections from a single research and action cycle to inform the planning and action of subsequent cycles (Reason & Bradbury, 2008). AR has been chosen as the methodological approach for this study as participants were situated as active co-researchers instead of passive information providers, creating more horizontal relationships between professionals and colleagues (Anderson, 2017). Additionally, AR is one of the main avenues for investigation in the education sector (Brydon-Miller & Maguire, 2009). When critical evaluation is combined in AR cycles, this situates teaching staff as self-reflective learners (Badia, 2017). Using AR to encourage teaching staff to become reflexive practitioners is at the heart of this practice-based professional learning framework.

Overview and Ethical Considerations

This AR study was approved by Western Sydney University Human Resources Ethics Committee (Approval H13878) and the NSW State Education Research Applications Process (SERAP 2020162). The parents of the SSS students gave their informed written consent acknowledging no data were being collected from their children.

Participants and Recruitment

An arms-length informed consent process took place with permanent and temporary contract staff currently employed at the school and responsible for a class of students. Relieving or casual teachers not responsible for programming curriculum content were excluded from the project. Expressions of interest were distributed to eligible staff. The school leadership team selected the potential participants based on availability, suitability, and least disruption to the school timetable.

Additional Key-Informant Group

Input was sought from the principal and acting principal in the form of a focus group discussion to further contextualise this research on developing the music culture in the school.

Research Design

This ten-week AR music therapy teacher support project was designed to take place within a single school term and incorporated multiple reflective practices and activities. Three 30-minute focus group discussions (FGD) were conducted in weeks 1, 5, and 10 with 6 participants comprising 3 Teachers (T) and 3 Student Learning and Support Officers (SLSO). A fourth focus group with the key informants was included at the 5-week mark (FGD4). JW facilitated a 30-minute music session with each of the 3 class groups each week. As the confidence of the teaching staff increased, they were invited to lead the sessions. Further data were collected via weekly online surveys the staff completed after the music sessions, with the first author's field journal entries and reflections informing subsequent sessions.

Classroom Music Sessions

Background

The SSS in this study is situated in the outer residential suburbs of Sydney, NSW, Australia. Students in SSS settings in NSW are grouped in small classes of 5-10 students and led by a teaching team of one teacher and one SLSO per class (NSW Department of Education, 2023). Most of the students and SLSOs had been involved in group music therapy sessions with JW in the previous two years and were already familiar with the structure of the musical activities chosen for the classroom music sessions. The teachers were unfamiliar with most of the musical material and activities, due to this being their time out of class to work on curriculum and planning. The students were not attending group music therapy classes at the time of the study.

Structure

Each classroom music session was clearly framed with a greeting and a finishing song to explicitly signal the beginning and the end of the session. All the sessions included elements of singing, playing small hand percussion instruments, and movement to live or recorded music. The sequence was consistent: a greeting song, a movement song, a small hand percussion 'shaking' song, a drum song, and the goodbye/finished song. The music was a

mixture of new and familiar music[3]. Please refer to Appendix A for an example of a typical classroom music session from the study, including how the musical activities aligned with selected Early Stage 1 (ES1) and Stage 1 (S1) outcomes from the NSW Department of Education's K-6 Creative Arts Syllabus (2006). As JW is a dual-qualified educator and music therapist, she was able to select appropriate outcomes from the syllabus. We recommend in future studies that music therapists consult with teachers to select which musical standards or outcomes are appropriate for their students.

Resources

This AR used a range of hand percussion instruments and a set of stackable djembe drums that were purchased with research scholarship funds. The project also utilised existing school Notebook software that was compatible with the interactive whiteboards in each classroom. Each class had its own music Notebook file tailored to their music session, including visuals, lyrics, and links to YouTube or pre-recorded videos. Figure 1 shows an example of a slide from one of the music sessions incorporating these elements.

Research Resources. FGD were recorded using the Voice Memo app on an iPad. The online surveys were created using Qualtrics software and a survey link was sent to participants' mobile phones after each session. WhatsApp was utilised to schedule focus group discussions. NVivo software was employed for manual transcript data analysis.

Figure 1. A Typical Notebook File and Classroom Setup

[3] While the first author brings her NRMT training to the philosophical framework of this study, her approach did not incorporate improvisation with the participants during classroom music sessions.

Classroom Music Sessions

Data were collected via FGD transcripts, online surveys, and JW's weekly post-session reflections kept in a field journal (FJ).

Focus Group Discussions

The three FGD coincided with the beginning, middle, and end of the data collection phase. Broad questions were asked to generate discussion about participants' personal musical backgrounds, knowledge, formal training, and skills (see Appendix B). Participants were prompted to reflect how prepared they felt to deliver classroom music upon graduating university and in the present day. During the FGDs, JW and participants tracked progress and shared ideas for the upcoming phase of the project. The musical preferences of the participants and their classes were also collected.

Online Surveys

The participants completed a brief online survey after each classroom music therapy session. The same five questions, modelled on the Critical Incident Questionnaire (CIQ) developed by Brookfield (1995), were asked each week. The original survey script was adapted to reflect musical activities and asked the participant to briefly note the moments they felt the most engaged, distant, affirmed, confused, and surprised by the musical activities in the sessions (see Appendix C). The intent of the CIQ was to pinpoint meaningful moments for participants in the sessions to cross-check with the field notes. Responses were anonymous to encourage honest feedback.

Researcher Field Journal

After each music session, JW spent 20–30 minutes reflectively writing about the session, loosely matching the framework of the CIQ for greater ease of cross-referencing with the CIQ survey responses. This FJ was also used to prompt reflections on the preceding session and to plan for the next.

Data Analysis Approach

Reflexive Thematic Analysis

The transcribed data were analysed to capture patterns and themes across the dataset following the 6-step reflexive thematic analysis approach and principles developed by Braun and Clarke (2006, 2019). Braun and Clarke recognise the researcher's subjectivity as an important analytic resource, as is their reflexive engagement with theory, data, and interpretation (Braun & Clarke, 2021). The reflexive inductive approach to data analysis was suitable for this small-scale AR study. Appendix D details the 6-step process.

Coding and Analysis Process

All FGD transcripts, online survey responses, and field journal data were coded semantically for surface meanings. At this point, and to build familiarisation, 'I-Poems[4]' were utilised as a creative way of engaging with the data on a deeper level and to foreground the participants' voices. After generating some broad general themes, the data were uploaded into NVivo for initial auto-coding. The data were manually coded and re-coded as themes and patterns began to form as part of an inductive approach to theme generation (Steps 3 and 4 in Appendix D). During this intensive data analysis phase, four overarching themes (OAT) were generated from the data, each with its own themes, sub-themes, and elements. From rereading and reconnecting with the data regularly, JW was able to remain reflexive throughout the process to ensure the themes were consistent across the entire data set.

Findings

Overarching Themes

Four OATs were drawn from the reflexive thematic analysis (see Figure 2), incorporating an umbrella theme about *listening inside the school music culture,* with three subsidiary OAT about how *engagement*, *access*, and *support* emerged from the data as essential qualities of this music therapy teacher support project.

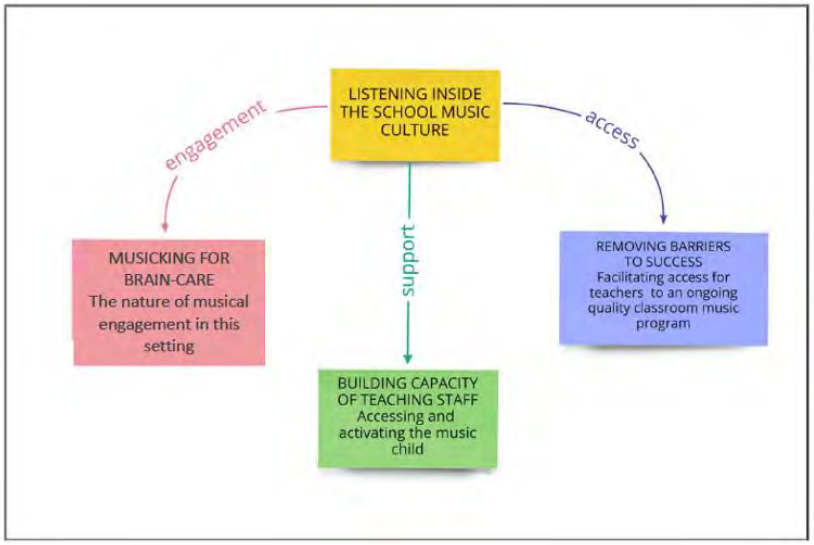

Figure 2. Four Overarching Themes

[4] I-Poems are a creative way to engage with interview data involving grouping together all the 'I' statements from each participant into a poem (see Figure 3). This foregrounds the voices participants use to talk about themselves (Kara, 2015).

OAT 1. Listening Inside the School's Musical Culture

As shown in Figure 2 this OAT acts as an umbrella theme. As a music therapist trained to listen to all sounds, what JW *heard* and what she *noticed* about music in this setting formed two separate constituent themes: *Hearing About the School's Musical Culture* and *What Was Noticed About the School's Musical Culture.* Comments from participants indicated music was widely used in the classrooms: "We had used music as a cue for meal-times in the past" (T1, FG1) and "We use music a lot in my classroom. Sometimes it is incidental. We sometimes sing a walking song. We sing a pack away song" (T3, FG1). Other comments included: "we have a morning circle, like a hello song…it's a really strong start to the day…and for anxiety about transitioning, you know, kind of singing or clapping to help them to move, or teaching them new words, or new functions of words kind of helps there as well" (T1, FG1); "music is an integral part of our class, and we use YouTube for play songs and nursery rhymes on a regular basis" (S3, FG1); "some of the skills that we are working on with our students include things like imitation, um, allowing them an opportunity to engage with music and work on those skills at the same time" (T1, FG1); and "Lunch music, for sleeping time we have some piano calming music" (T2, FG1). Music was certainly valued in the school at the time of the study; however, music was primarily used to support non-musical goals and other non-musical subjects. JW noticed teaching staff often relied on the engagement of external providers as they were reluctant to deliver the lesson themselves. She observed and heard a general lack of confidence to deliver live music, especially if it involved singing in front of others.

OAT 2. Building Teaching Staff Capacity: Accessing and Activating the Music Child

This comprehensive theme encompasses *accessing* and *activating* NRMT philosophy of the music child within each participant whilst building their capacity. This theme encapsulates musical background and training. A deeper understanding of the musical self-concept of each participant arose with the creation of individual I-Poems (Kara, 2015). The participants held a wide spectrum of musical background and abilities; however, they all felt ill-prepared to deliver live music classes (see Figure 3).

In the first two FGD, no participants joined in with JW's singing. By the final FGD, the participants sang unselfconsciously across the room to each other. Aspects of knowledge transfer emerged: "It was more than just tapping the table with the blocks; it was actually like with the rhythms…I'm noticing it more now, that I've been doing your music" (T3, FG2). An 'in it together' approach was apparent with exchanges such as: "You play, I'll sing!" (FG1). Over the course of the project, new songs became familiar, embedded through the process of repetition. From the first to final FGD the musical self-concept language also changed from "I

don't do music," to "I like the way Jen is teaching cues to start and stop playing" (CIQ) and "I was squeaking back to him…I thought we could have a squeaking conversation" (S2, FG2).

Providing a scaffold of structure and breaking music into basic elements of pitch, dynamics, and tempo were important features of the research design. They provided a safety net for the participants to access their own music child and also acted as a launching pad to the delivery of live classroom music.

Figure 3. YouTube Video: I-Poems
https://youtu.be/ysfsNZmHuqw

OAT 3. Musicking for Brain Care: The Nature of Musical Engagement in this Context
This OAT captures moments of participants' *engagement* whilst musicking and how this looks through a brain-care lens. The participants' observations frequently featured facial responses when speaking about musical engagement: "I saw more smiles on their face" (T2, FG2); "Rachel's engagement in music is really good, like she's much more engaged by the instruments you've bought in, like, her little face lights up" (T3, FG2). A synergistic relationship between musicking and other non-musical skills was also evident in other ways of engaging such as: turn-taking, imitation, and purposeful movement. In FG2, S1 commented "they were actually trying to practise the opposite hand" and "we're just going to have fun, but they don't know that there is learning involved in that."

The participants in this context knew that rhythmic patterning and repetition could help regulate the brain and help with feelings of being overwhelmed. Their comments reflected this

understanding, with the drumming sessions generating the bulk of the data about self-regulation: "I could see rhythmic beat calming/settling students" (CIQ); "It's becoming a routine, they know what to do, they know the routine" (S1, FG2); and "the drum is an instrument that you can't fail in" (FG4). The many observations of this nature were indicative of the school's embedded brain-care approach to learning, further supported by one of the key informant's comments that all staff "approach students with a deep understanding of the way kids' brains operate" (FG4). Students appeared to thrive when presented with familiar structures and predictable rhythmic patterning.

OAT 4. Removing Barriers to Success: Facilitating Access for Teachers and Students to an Ongoing Quality Classroom Music Program

This OAT captured all the elements of project design that ensured a sustainable program for participants that would, in turn, affect students' access to the music program. Two broad constituent themes were evident: *Sustainability* and *Participation*.

Project *logistics*, *design*, and *resources* form sub-themes of the sustainability theme. Adaptations abounded in the data such as: "Getting on floor added to chaos, maybe keep big drums and sit on chairs, depending on mood of class" (FJ, Caterpillars, 2). People-related resources including time given and existing professional relationships were acknowledged as integral to the ongoing success of the project.

The layers of difficulties some students face in *access* and *inclusion* in a classroom music program were acknowledged. Comments reflecting this include: "Unfortunately they were very unsettled this week, so the first song was the pinnacle"; "I couldn't take part in the music session as a student was crying and very unsettled" (CIQ 4). Adjustments and adaptations for students with high physical needs were frequent: "Parachute, nice ending, whole class, Sonya included - on floor out of wheelchair" (FJ, Hippos, 2). All the participants expressed a level of frustration about different physical, social, and behavioural barriers for some students to access the session. These responses reflect an integral aspect of working with students with unique learning needs.

Delivery Skills: Developing a Practice Without Fear

Certain skills were identified early in the study in the FJ as barriers to developing teaching capacity: "I'm getting a sense that I've been assuming too much - as in I can retain a tune and an order in my head, but these guys can't" and "I've overestimated the skills that I've internalised" (FJ, Caterpillars, 3). Some *delivery skills* were identified as essential to developing staff capability and to accessing the inner music child. We then collaborated to rehearse and overcome them. Table 1 summarises the skills identified as helpful for participants to confidently deliver a classroom music session.

Table 1

A List of Simple Delivery Skills

Skill	How to Address and Rehearse the Skill
Pitching a note	Audio cues on whiteboard
Singing and keeping a simple beat	Repetition of body percussion whilst singing
Predicting phrase structures	Repetition of rhythmic pattering in 4/4 time
Recalling song lyrics	Audio cues on whiteboard
Recalling program	Visual timetable on whiteboard
Reproducing rhythmic patterns	Repetition of rhythmic patterns during drumming
Waiting for a response	Modelling waiting another 4 beats

The classroom music program was broken down into basic components. The repetition of these basic elements of music designed to promote the students' learning appeared to be what ultimately grew participants' confidence with delivery, as discussed in the next section.

Discussion: Fostering a Reflexive Practice of Deep Listening

This study explored how a music therapist could collaborate with teaching staff at a special school to 1) develop and implement a classroom music program and 2) build staff confidence to deliver a live music program themselves. Four overarching themes emerged around deep listening; building capacity; musicking for brain care; and removing barriers for access. These four themes form the catalyst for this discussion. The collaborative and critically reflexive approach of the AR methodology created a *culture of collegiality* between participants and the first author (JW), successfully promoting role release after JW overcame her initial concerns about being a research practitioner. The brain-care approach the school adopts to support over-sensitised students produced an incidental *parallel process* whereby the teaching staff experience mirrored that of their students. Participants' existing beliefs and values about musical literacy, musical self-concept, and the language used around musical engagement also combined to form a *critical evaluation* of the stakeholders in this project. This had implications around sustainability, replicability, and practical applications, as detailed below.

Growing a Culture of Collegiality: Addressing Sustainability and Replication Through a Collaborative Methodology

The collaborative framework of AR created an environment for the sharing of professional

skills and knowledge transfer (Bainger, 2010; Bobis & Ewing, 2017; Rice & Johnston, 2013). Using AR as a methodology can address the imbalance of power between participants and researcher; in this case, the musical skills that could be accessed and shared. Framing the study as a transfer of knowledge and positioning the participants as critically reflective co-researchers meant the study explicitly acknowledged and respected the knowledge of the participants. In conducting research with colleagues, this is an essential balance (Arns & Thompson, 2019; Flodén, 2019).

For the researcher practitioner, AR provides deep contextual insights; however, it is important to maintain a reflexive stance to balance any tensions that arise (Olmos-Vega, 2023). In this research, tensions and discomfort arose for the first author (JW) around critical reflection on personal practice and the positive impacts of having existing relationships with colleagues. JW's field journal included multiple entries about being out of her comfort zone and how relieved she was to know the staff. These established bonds helped JW build trust with co-workers with low musical self-concepts and confidence so that they could deliver a music program with live singing. The importance of these existing relationships cannot be ignored when examining these findings about building teaching staff capacity, especially in terms of trust and engagement (Arns & Thompson, 2019). We recommend more observation and relationship building prior to commencement of a similar framework if the incoming music therapist is not known to teaching staff.

How Supporting Over-Sensitised Students Improved Participants' Own Musical Capacity

The musical capacity of the teaching staff and their delivery skills were indirectly developed through the repetition and predictability built into the program for the students. Providing participants with a safe place to rehearse and make mistakes was an essential aspect of this, in line with NRMT philosophy. The typical NRMT structure of the co-therapist was mirrored by the inclusion of SLSOs as co-researchers in this methodology, providing support and assistance to the teaching staff. In essence, the participants' journeys mirrored their students, in that at times their ability to develop their own musical capacity appeared inhibited by the same fight-flight/fear response preventing some of the students to self-regulate. In the drumming section of the music program, participants who were hesitant about their music skills began to experience success, which may have been due to the repetitive rhythmic patterning and regular beat within a predictable structure. While this study does not claim to have a trauma-informed framework, some of these findings do align with the music and trauma research literature (Faulkner, 2017; Perry, 2009; van der Kolk, 2015); however, it is important to be wary of oversimplifying such a trauma-informed approach (McFerran et al., 2020). It is hoped that the research design incorporating teaching staff who are experts in co-regulating and supporting self-regulation for over-sensitised students together with a trained music therapist has negated this concern.

Strength-Based Approach: Accessing the Music Child to Build and Sustain Confidence and Capacity

A major barrier for teaching staff in this study was the belief that music is the domain of the formally trained or musically gifted, confirming previous research from the community music therapy literature (Ansdell, 2016). One participant referred to her perceived lack of musicality in the FGDs, yet after persisting with the drumming pre-activity and song, she developed her own solution for merging these to suit the needs of her class. Another participant with no pre-service training for music in her university course reported how some of her class didn't "do" music because they couldn't sing "solos." Equating the class with an audience and positioning the classroom as a stage could perpetuate an already negative musical self-concept and discourage attempts at live singing or playing with students. In supporting the co-researchers in accessing their music child in a non-threatening way, this AR supported teachers to address their delivery skills which need to be rehearsed to maintain and adapt to the different needs of students each year. A key to sustaining the participants' skills was continued consultation in the form of brief ongoing musical professional development in after school class meetings (10 minutes a fortnight), which meant the program was utilised into the new academic year. Future studies should be mindful of supporting teachers over the hurdle of changing classes and musical partners each academic year. This is imperative for sustainability.

A Brain-Care Approach to Self-Regulation: Who are the Real Stakeholders?

In this study, strategies were included for students to experience safety and predictability: maintaining a familiar routine with cues signalling beginning and end; repetition; and keeping songs, activities, location, and room setup the same each week. These strategies were naturally adopted by the co-researchers as part of the school's brain-care approach to providing environments and learning content that does not overwhelm students. The neuroscience of learning, including how fear wires the brain, is a feature of the professional development programs in which the teaching staff participate. An Australian study confirmed the benefit of additional neuroscientific knowledge during musical training of pre-service teachers (Collins, 2014b). For practice-based musical professional development, the current study purports the usefulness of a neuroscience backed approach.

A secondary focus of this study was to support teaching staff to better support over-sensitised students. Observations captured by the CIQ around student self-regulation did not render enough data to adequately address the 2nd question about how the music program catered for the needs of over-sensitised students. Most of the comments relating to self-regulation were delivered from a behavioural lens relating to the level of engagement or dysregulation observed.

An adapted questionnaire could be developed to extract more relevant data from the staff about over-sensitised students. We recommend that adopting an inclusive co-production or co-practice research framework (Hillman et al., 2021; James, 2007) would result in more meaningful data from, and interactions with, the students themselves, who are the ultimate stakeholders.

Implications and Practical Applications of the Study

The lack of access to musical professional learning for in-service teachers was addressed by utilising a music therapist already working within a school. This study builds on literature addressing experiential researched solutions to the pre-service musical training gap (Collins 2014b; Thorne & Brasche, 2020). The design of this study could potentially be replicated in a similar context whereby a music therapist could facilitate a similar collaborative framework for knowledge transfer. If replicated across similar contexts, a scaled-up version of this study could provide further information and development on a larger scale.

The program continues to be used in the primary (elementary) classes at the school with the first author's consultative support. Without this continuity of contact, the program would likely not have continued. The knowledge and skills developed by the participants during the study have also ensured the sustainability of the program. In the new academic year, when teaching teams were split to form new classes, each of the 5 primary classes had at least 1 participant from the study, broadening the impact of the study's usability from 3 classes to 5. Plans are in place to expand the program into the secondary classes of this school with a PhD project.

Conclusion: Culturing a Regard for What is Said and What is Heard

This study explored how a classroom music program could be developed and implemented collaboratively by a music therapist in a special school setting. It was important to acknowledge the different starting points of the participants and break music down into its basic components as an accessible starting point. This study has shown that enabling teaching staff to access their inner music child to share the joy of musicking with another human can be achieved in a way that is respectful and supportive, without drawing attention to musical skill deficits. This study has also shown there is scope for the development of pre-service university training in music.

A program that builds capacity in teaching staff to further support the needs of their students generates a potential flow on effect to make a difference in the life of children who deal with challenges and barriers as part of their everyday life. Broadening the role of existing music

therapists in schools is potentially a cost-effective and sustainable approach to building the confidence and skills of teachers to deliver live music in the classroom, which in turn provides benefits to students within their educational journey.

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About the Authors

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Appendix A

A Typical Classroom Music Session for a Special Education Setting

Musical Activity	Description	Notes / Purpose / Examples	Music Outcomes from K-6 Creative Arts Syllabus
Greeting Song	A familiar hello song where each student has opportunity to say/sing/play hello to staff and peers.	Signalling the beginning of each session to provide structure and opportunity to practise verbal greetings, eye contact and group interaction.	MUES1.4: *Listens to and responds to music.* MUS1.1: *sings songs developing a sense of beat, pitch, tone colour and structure*
Movement or Body Percussion song	Live songs or recorded music, structured to encourage movement	A warm-up song to get 'In the Zone' for music eg. Shake your sillies out, Let's go fly a kite, Kye-Kye Khule.	MUES1.4: *listens to music and responds by moving to the beat,* MUS1.1: *moves to music maintaining a constant beat*
'Shaking' song / Hand percussion	Using small hand percussion eg. egg shakers or hand / wrist bells	Working on stopping together, watching and listening for musical and visual cues	MUES1.1: *performs music using body percussion, percussion instruments* MUS1.1: *explores simple aspects of musical concepts in their singing, playing and moving activities*
Drum Song	Drum song for small hand drums and soft beaters. Either a single drum is passed around or all students hold their own.	Working on turn taking, waiting, listening and repeating drum patterns	MUES1.1: *performs music using percussion instruments* MUS1.1: *plays music to explore the concepts of duration, dynamics, tone colour and structure*
Parachute songs / activities	Students either lie down underneath parachute or hold the outside	A physical / visual cue (parachute) signalling the end of the session. Using slow regular breathing paced songs or recorded music to bring the session to a close in a calming way. Eg – I	MUES1.4: *Listens to and responds to music.* MUS1.4: *shows preference for particular pieces of music*

	can sing a rainbow, Twinkle, Carnival of the Animals (Aquarium).

Appendix B

Focus Group Discussions 1-4 Question Guide

Focus Group 1

The First Focus Group will take place before the study begins with the two teachers and two Student Learning Support Officers.

1. ***First of all, can you tell me about some of your musical backgrounds and experiences***
   (Did you learn an instrument growing up / wish you had? Were you part of any musical groups at school? Is/was there music playing in your house – what was/is it? What kind of music do you like to listen to? Do you play 'your' music in the classroom?)

2. ***(Teachers) – How would you describe the music component in your teacher training course?***
   (Was music taught as a one-off unit of work or throughout the course? Was there a practical component or was it all theoretical? Was music combined with the other Creative Arts subjects or taught as a stand-alone?)

3. ***(Teachers) - When you graduated from Uni how prepared did you feel to deliver music in the classroom?***
   (Did you have a toolbox of resources or ideas to bring into the classroom? Do you remember any opportunities during your prac/s to observe a music teacher or a general class teacher delivering music? Do you recall how you approached preparing for and delivering music lessons in your early teaching days?)

4. ***Now we're going to talk about music in your current classrooms – could you describe any musical happenings during your day with your class?***

   (Do you use music as a cue for mealtimes or playtimes? Do you use recorded music? Do you employ live singing in any way – eg. walking song, goodbye songs. Do you use the IWB (Interactive White Board) or a CD player for recorded music? Do you access YouTube for music videos / playsongs / nursery rhymes?)

5. ***What have you noticed about the students' responses to musical activities***

   (Are there any changes in arousal or alertness levels? Do you notice any dysregulation or self-regulation by the students when music is playing? Are there non-verbal students who appear more communicative? Do you notice anything about your own responses or mood when music is being used in the classroom?)

6. ***This project is an opportunity for us to design together a unique music program for your class. We will first test musical material related to choices and interests within music therapy groups with me before you implement the music program in the classroom. I am wondering what you would like to try out in our sessions together?***

   (Do you have some ideas about what musical activities might look like for your class? Singing? Movement? Dancing? Drama? Playing instruments? Do you want to explore using digital technology on electronic devices?)

7. ***You will be supported throughout this project to learn how to deliver live music sessions for your class. Can you imagine yourself running musical activities in your classroom?***
   (What might that look like? Little and often or one session a week? Do you have a time of day in mind? Totally teacher led or student driven? Structured? What strengths do you feel you might bring to a music session? Weaknesses? Anything you are anxious about?)

8. ***In thinking about this project is there anything you'd like to ask or add?***

Thank you so much for your time today, I am looking forward to working with you all!

Focus Group 2

1. ***First of all, can you tell me if you have noticed any extra musical happenings in your classroom since we started the project?***

2. ***What did you notice about the students' responses to musical activities?***
   (Any changes in arousal or alertness levels? Any dysregulation or self-regulation by the students? Where there non-verbal students who appeared more / less communicative? Did you notice anything about a student that you had never seen before or didn't know they could do? Anything about your own responses or mood during the sessions?)

3. ***We are going to continue our music therapy sessions together while you trial the program we have designed in the classroom. What would you like to use this time for?***
   (Do you want to 'rehearse' or practice the live components of the classroom program or try new material? Singing? Movement? Dancing? Drama? Playing instruments? Do you want to explore using digital technology on electronic devices?)

4. ***What are you feeling most comfortable about when you think about delivering a live music session to your class?***

5. ***What are you most concerned or anxious about when you think about delivering a live music session to your class?***

6. ***In thinking about this project is there anything you'd like to ask or add?***

Thank you so much for your time today.

Focus Group 3

This might feel a bit repetitive and you have answered these questions already in the weekly surveys, this is hopefully going to generate some more discussion as you hear others' responses.

1. ***Can you tell me if you have noticed any extra / different musical happenings in your classroom since our last focus group?***

2. ***Was there anything you noticed about the students' responses to musical activities in the last few sessions that stand out for you?***
   Any changes in arousal or alertness levels? Any dysregulation or self-regulation by the students? Were there non-verbal students who appeared more / less communicative? Did you notice anything about a student that you had never seen before or didn't know they could do? Anything about your own responses or mood during the sessions?

3. ***Was there anything you remember about your own responses to the music or your mood during the last few sessions?***

4. **Thinking about the learning experience you've had, how do you think you might approach music in your classroom next year?**

   (Are you going to program for a music session specifically or combine it with Creative Arts? Do you want some help with it?)

5. ***How do you feel now about delivering a live music session to your class?***
   (Are you feeling more / less comfortable singing in front of others?

6. ***In thinking about this project is there anything you'd like to ask or add?***

Thank you so much for your time today.

Focus Group 4

I just want to set the tone, this is considered 'situational research' as in we are colleagues and I am conducting investigative research into my own workplace - which means I have to be careful to be really impartial. There are no right or wrong answers here and no judgement, I will be exploring your responses to better understand the phenomenon of the musical culture in this school.

1. ***First of all, can you tell me about some of your musical backgrounds and experiences***
   (Did you learn an instrument growing up / wish you had? Were you part of any musical groups at school? Is/was there music playing in your house – what was/is it? What kind of music do you like to listen to? Do you play 'your' music at school at all?)

2. ***How would you describe the music component in your teacher training course?***
   (Was music taught as a one-off unit of work or throughout the course? Was there a practical component or was it all theoretical? Was music combined with the other Creative Arts subjects or taught as a stand-alone?)

3. ***When you graduated from Uni how prepared did you feel to deliver music in the classroom?***
   (Did you have a toolbox of resources or ideas to bring into the classroom? Do you remember any opportunities during your prac/s to observe a music teacher or a general class teacher delivering music? Do you recall how you approached preparing for and delivering music lessons in your early teaching days?)

4. ***What have been some highlights for you personally in your time here at CRS that involved music?***

(Were these usually performance-based events? What was it do you think that made it memorable? Did you see something you didn't realise a student could do?

Were there any changes in arousal or alertness levels? Do you notice any dysregulation or self-regulation by the students when music is playing? Were there non-verbal students who appeared more communicative? Do you notice anything about your own responses or mood when music is being used in the classroom or at a school event?)

5. ***How would you describe the musical culture here at CRS at the moment?***

(Compared to the past / when you arrived – is it different now? Can you describe it? Why do you think that might be?)

(Do you use music as a cue for mealtimes or playtimes? Do you use recorded music? Do you employ live singing in any way – eg. walking song, goodbye songs. Do you use the IWB (Interactive White Board) or a CD player for recorded music? Do you access YouTube for music videos / playsongs / nursery rhymes?)

6. ***What is your understanding of the requirements of delivering classroom music as part of the students' weekly curriculum of Creative Arts?***

(What's your understanding of the requirements of the percentage of time to be spent on Creative Arts? Does the current reporting system in your view reflect the learning that is occurring? If not, what would you like to see? Have you received any feedback from teaching staff about this, is it too much / too little / not relevant when there are so many other subjects and areas vying for their time?)

7. ***I know the school engages in some outsourced music sessions such as Drumbala or Rhythm Village. In what way does this approach impact on the classroom music program***

(For teachers, for the students? ***In your opinion how effective do you believe this approach is as a model of Music Education Delivery?***

8. ***I'm interested in your understanding about the difference between music therapy and music education?***

(Do you see a lot of overlaps for example?)

9. ***Considering what we have discussed today is there anything you'd like to ask or add?***

Appendix C

Critical Incident Questionnaire Qualtrics Survey Script (based on Brookfield,1995)

Please indicate your consent to participate in this weekly survey and understand your responses are anonymous

- o Yes I consent to participate in this weekly survey
- o Yes I understand my responses are anonymous
- o No I do not consent to participation in this survey

Please take a few minutes to respond to each of the questions below as soon after the

weekly music sessions as possible.

When you have finished filling out each field, simply press submit.

1. At what moment in the session this week were you most engaged in the musical activities?

2. At what moment in the session this week were you most distanced from the musical activities?

3. What action that anyone in the room took this week did you find most affirming or helpful?

4. What action that anyone in the room took this week did you find most puzzling or confusing?

5. What surprised you most about the session this week?

Thank you for taking the time to do this weekly survey.

Appendix D

Reflexive Thematic Analysis Process

Process Step	Description
Step 1. Familiarisation with the data	The transcripts from the FGDs and the online CIQs were read several times to become familiar with the responses. This was an active process which allowed for meanings and patterns to emerge from the data. These initial ideas were noted in the field journal.
Step 2. Generating initial codes	All data extracts were manually organised into meaningful groups, to develop some initial codes. Care was taken to include all extracts and some extracts were coded multiple times as well, to avoid simple summarising of the data, known as domain summaries.
Step 3. Searching for themes	The data analysis was re-focused at a broader level and codes organised into possible themes using a mind-map. Relationships between codes were identified and combined, to form central themes.
Step 4. Reviewing themes	Emerging themes were reviewed and refined using a mind-map. The entire transcripts were re-read at this stage to ensure the refined themes aligned with the data set.
Step 5. Defining and naming the themes	The final themes were refined and defined using a detailed written analysis which identified the essence of each theme.
Step 6. Writing up	The results were placed in context with the current literature and a detailed written report completed including examples from the data set as evidence for important and interesting ideas that emerged during the course of the thematic analysis.

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