

**ANGLIA RUSKIN UNIVERSITY**

**MUSIC THERAPIST COLLABORATION WITH TEACHING ASSISTANTS  
FOR FACILITATING VERBAL DEVELOPMENT IN  
YOUNG CHILDREN WITH SPECIAL NEEDS**

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**A thesis submitted in partial fulfilment of the  
requirements of Anglia Ruskin University  
for the degree of Doctor of Philosophy**

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**ANGLIA RUSKIN UNIVERSITY ABSTRACT**

**FACULTY OF ARTS, LAW AND SOCIAL SCIENCES**

**DOCTOR OF PHILOSOPHY**

**MUSIC THERAPIST COLLABORATION WITH TEACHING ASSISTANTS**

**FOR FACILITATING VERBAL DEVELOPMENT IN**

**YOUNG CHILDREN WITH SPECIAL NEEDS**

**JO TOMLINSON**

**August 2016**

A mixed methods research investigation was carried out to evaluate the development of verbal skills in young children with special needs receiving music therapy from a qualified therapist, and additional music sessions carried out by teaching assistants (TAs). Qualitative data was gathered to support the quantitative video analysis results. The music therapist set up music sessions for the TAs to carry out independently, to assess whether this collaboration enhanced the development of the children's verbal skills.

Eight children aged four to eight years attending a special school were selected to participate. Half of the children were randomly allocated weekly individual music therapy sessions for 24 weeks, and the remaining children received weekly individual music therapy sessions plus a weekly music session with a TA for 24 weeks. The music therapist met regularly with the TAs to exchange information, and to demonstrate musical and singing concepts for each individual child through sharing video material. The video data from both music therapy and music sessions with TAs in sessions 3 and 22 were analysed using a time-sampling method to assess progress in verbal and social interaction. The vocal scores were extracted from this data and a statistical analysis carried out on these figures. In addition, parents of the children and the TAs took part in interviews pre- and post-intervention to assess the children's social and verbal development in other contexts.

The analysis of the vocal scores indicated that there was a statistically significant difference pre- and post-intervention for the children who had had the additional TA music sessions. This indicated that the collaborative approach was effective in enhancing verbal skills. However, due to the small number of participants, these results cannot be generalised to other situations and a larger scale investigation would need to be carried out to demonstrate more conclusive results.

This study suggests that music therapists and TAs in schools can work collaboratively and that this can potentially enhance the progress that children make in music therapy, with reinforcement of verbal development strategies in the class context.

**Keywords:** music therapy, teaching assistants, young children, verbal development

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Introduction to the thesis**

Music therapy has been found to be an effective intervention in supporting the development of social skills and communication in children (Edgerton 1994, Buday 1995, Oldfield 2006a, Oldfield 2006b, LaGasse 2014). My experience of working as a music therapist in schools for twenty years leads me to feel that this intervention can be particularly successful if the child receives music therapy at a young age. If children with special needs can develop effective social skills at the earliest possible stage, then it reduces the consequent frustrations and lack of expressive capacity that often ensues. My motivation for working with young children and particular interest in this client group, revolves around this theory and belief that music therapy can make a significant difference to social and emotional development.

Collaborative working with teachers and health professionals has been described in the music therapy literature, for example, Twyford and Watson (2008), Pethybridge and Robertson (2010), Pethybridge (2013), Bruce (2012), Leite (2002) and Rickson and McFerran (2014). However, the theme of collaborative working specifically between music therapists and teaching assistants (TAs) has generally been neglected (Schmidt 2004, Strange 2013). The unique aspect of this research was the concept of music therapists working with individual children and then the TAs carrying out additional music sessions within the same week, over a 24-week period. The children's verbal development at the end of this intervention was then assessed through video analysis.

In the UK, TAs support class teachers in the class base, working alongside individual children who need additional assistance. Sometimes children with special needs are allocated

a particular number of TA hours to support their development in class. I chose to focus this research on my collaboration with TAs rather than teachers, as it would not have been possible for teachers to leave the class base to carry out the individual sessions with children. In addition to this, I felt that it would be logistically easier to meet with TAs to discuss the research, than teachers who have greater time constraints.

My other motivation for researching this topic was that I have worked alongside TAs throughout my music therapy career, both in running groups together and in communicating about particular children who I have worked with individually. Through shared group work with TAs, I have come to recognise how highly skilled and committed to their work they generally are, and how valuable and fruitful the relationships they have with the children can be. Observations of TAs singing and interacting musically with children in groups, and drawing out their social skills and communicative abilities, made me reflect on whether it would be possible for TAs to carry out follow-up music sessions with the children I was working with, potentially reinforcing verbal and social development. I was interested to quantify through video analysis whether this would make a difference to the children's communicative development over a set period of time. I also decided to carry out semi-structured interviews with parents of the children and TAs, which would provide qualitative evidence to enhance the research findings. Clinical reports and case notes were also collated.

In addition to observing the potential in the TA and child relationship and exploring the aspect of collaborative working, I have become increasingly aware over the years of the absolute necessity for the music therapist to fit in to the staff team within the school context, in order to create sustainable music therapy posts, particularly in the current financial climate. The capacity to work collaboratively is not an added extra, but is a prerequisite for music therapists to maintain their work and to achieve maximum benefits for their clients.



This amalgamation of interests led me to apply for funds in order to establish a research project at Castle School, Cambridge, and I was fortunate in securing funding from ‘The Music Therapy Charity’ and ‘Eastern Counties Educational Trust’ to carry out a one-year research project to scrutinise these areas of my work.

## **1.2 Context for the research**

I am employed by the local music service, Cambridgeshire Music, and the setting for my research was Castle School, a large special needs school in Cambridge. This school provides for the educational needs of 160 children with a wide range of disabilities. There are a large number of children at the school with autism spectrum disorder, as well as some with emotional and behavioural difficulties, global developmental delay, cerebral palsy, Down syndrome, and a variety of other rarer conditions. The school was established in 2006 and replaced two smaller special schools in the area that were closed at this time. In the previous schools music therapy had become very well established over a period of ten years, with full-time music therapy for 60 children. Initially there was full-time music therapy at Castle School, but unfortunately due to budget restrictions the input was reduced to two and a half days a week a few years ago, which means that we are more stretched to meet the needs of the 160 children on site. The music therapy post is shared between two therapists, Susan Greenhalgh and myself.

Music therapy at Castle School is seen very much as a specialist resource, and the general philosophy is to attempt in the first instance to meet the children’s needs as far as possible within the context of the class base. Music therapy is considered when this is not feasible, sometimes as a crisis intervention. Skill sharing between therapists and staff in the classroom is encouraged in theory although logistically this can be difficult to arrange. One of the benefits of the research project was that I was able to liaise and share skills with staff more

than would ordinarily be possible. The school welcomed the additional funding for music therapy that was generated for the research project from the two charities.

### **1.3 Aim of the investigation and research questions**

The aim of the research investigation was to look into the development of vocal and verbal skills in young children aged four to eight years and to work closely with TAs at the school to see if this facilitated increased development in the children's verbal interaction. Part of the collaborative approach involved the music therapist setting up music sessions for the TAs to carry out, as well as the child receiving weekly music therapy sessions with the therapist. The children's vocalising and engagement in sessions was measured at the start and finish of the project through detailed video analysis using a time sampling method (Oldfield and Adams 1995). Recorded interviews with TAs and parents of the children were also carried out pre- and post-intervention.

My research questions were as follows:

- i) Can musical interaction and singing develop verbal and vocal skills in young children with special needs?
- ii) If the music therapist collaborates with teaching assistants in setting up music sessions for the TA to carry out independently, does this enhance the children's vocal and verbal progression?

### **1.4 Overview of the methodology**

Eight children were selected for the project; the majority (six) had a diagnosis of autism spectrum disorder. One of the other two children had profound and multiple learning disabilities, and the other had a diagnosis of cerebral palsy. The children were selected on the basis that they were limited in their capacity to communicate vocally or verbally, and were at

an early developmental stage. It was hoped that music therapy would facilitate the development of more effective communication skills, through encouraging the children to use their voices in an interactive way and within the framework of song material.

The children were randomly selected to attend either weekly individual music therapy sessions, or weekly music therapy sessions with a follow-up TA music session. Four of the children provided the control group of just having music therapy, and the remaining four had the combination of both types of sessions. The treatment phase lasted for 24 weeks as this was the number of sessions possible to fit in to the time frame of one academic year, with time allocated either side of the treatment phase for the planning, interview processes and video analysis.

The music therapy and TA sessions were videoed at the start and finish of the research period. All the video material was analysed using time-sampling video analysis at the end of the project. The parents of the children and the TAs involved were all interviewed pre- and post-intervention, using a semi-structured interview format. Music therapy reports and case notes were collated during the phase of data collection to provide additional information. Hence a combination of quantitative and qualitative data was obtained which provided evidence of the children's vocal and verbal progress at the start and finish of the research, as well as gaining the parent's and TAs perspective on the children's social development in other contexts.

Although there is existing literature about music therapists collaborating with teachers and other education and health professionals, there has been no previous research into this type of collaborative working between music therapists and TAs in schools. The unique aspect of the study was the fact that the TA carried out music sessions with the children, in addition to them receiving weekly music therapy sessions. I hoped that this small-scale study would add

to the music therapy literature, and potentially form the basis of a larger-scale research project in the future.

## **1.5 Outline of the chapters**

**Chapter Two** presents an overview of the literature relating to the study. Firstly an introduction to the different types of disability is provided; autism spectrum disorder, profound and multiple disabilities, and cerebral palsy. Next, the use of music therapy with children with these types of disability is presented, with relevant music therapy research literature outlined. Literature is then described which relates to verbal development in children and the way in which music therapy has been used to facilitate progression in verbal interaction. Lastly, collaborative working alongside a variety of professionals (including TAs) in school environments is considered.

**Chapter Three** describes the music therapy approach taken during the research and the context for the project, as well as a brief overview of the history of music therapy at Castle School.

**Chapter Four** sets out the methodological approach used, with a description of the practical aspects of the project as well as the theoretical background. The rationale for using mixed research methods is presented, with the concept of the qualitative material enhancing the quantitative video analysis results being discussed.

**Chapter Five** presents the key findings from the quantitative data, with video analysis results displayed in graph form and illustrated by qualitative material from the children's music therapy reports. The statistical analysis of the data for the children's pre- and post-intervention vocal scores is provided. Pie charts demonstrating the percentage proportions of

the behaviours of the TAs and music therapist during sessions is also displayed and discussed.

**Chapter Six** presents the results of the findings from the qualitative data, with information about the semi-structured interviews with the TAs and parents of the children, as well as an overview of the research diary. The IPA process of interview analysis is described, with material from the interviews being set out in tables and emergent themes high-lighted.

**Chapter Seven** presents reflections and conclusions from the study, drawing together the quantitative and qualitative results and contextualising the research within music therapy literature. The limitations of the research are described, as well as possible future larger scale research recommendations.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Firstly, literature is reviewed which relates to children with autism spectrum disorder (ASD), profound and multiple learning disabilities (PMLD) and cerebral palsy (CP). Secondly, music therapy literature in relation to these client groups is reviewed, with an emphasis on the development of verbal skills in young children with special needs and the ways in which music therapists use vocal development techniques. Lastly, literature relating to collaborative working with other professionals including teaching assistants (TAs) is considered.

The method used for reviewing the literature in these areas involved manually searching through books and the following journals; British Society of Music Therapy Journal, Journal of Music Therapy, Music Therapy Perspectives and Nordic Journal of Music Therapy. Online databases were used, such as Google Scholar, Proquest, EBSCOhost, and Wiley library.

Through searching these databases and looking at references lists from articles, awareness was raised of other publications, which were then searched for online and in libraries.

This literature review includes references up until 2015. Literature up until 2012 informed the research methodology, and literature between 2012 and 2015 continues to influence the music therapy approach and also directly relates to the questions that have been asked in this research investigation, which is why I have chosen to include it. As the clinical fieldwork was carried out between 2012 - 2013 it could be argued that literature which has been written since 2012 did not inform the decisions made regarding the research methodology, however, this literature has informed the way in which the data from the research was assessed, and is therefore relevant to the thesis. None of the literature from 2012 – 2015 would have changed

the methodological approach applied to the research investigation, despite clinical perspectives being affected by this on-going literature review.

## **2.2 Literature on autism spectrum disorder (ASD)**

The American diagnostic criteria for autism spectrum disorder (ASD) were revised in May 2013 and presented in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). This set of criteria provides information for psychiatrists, psychologists and other professionals when making judgements about patients' diagnoses. The following DSM-5 diagnostic points were taken from the 'Autism Speaks' website (2015):

- A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history:
  - 1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
  - 2. Deficits in non-verbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and non-verbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and non-verbal communication.
  - 3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.
- B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history:
  - 1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g. simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
  - 2. Insistence on sameness, inflexible adherence to routines, or ritualised patterns of behavior.
  - 3. Hyper- or hypo-reactivity to sensory input or unusual interests in sensory aspects of the environment (e.g. apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual

fascination with lights or movement).

- C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).

The umbrella term ‘autism spectrum disorder’ (ASD) has been highly debated over the last fifty years, since the first clinical paper written by Kanner in 1943, in which characteristics presented by children with ‘early infantile autism’ were listed. There is no known cure for ASD and the hardest aspect of the condition for parents to deal with is the associated social difficulties and the child’s lack of desire for conventional communicative interaction. Parents often experience anxiety about their child’s lack of eye contact when they are a baby, which then leads on to a lack of interactive contact or dislike of being cuddled. It can be a long and stressful process for parents to receive an official diagnosis of ASD for their children, which can delay the opportunity for relevant treatment options.

Public awareness has been raised in recent years by films and documentaries about the condition, but has sometimes created an unbalanced view of the abilities of people with ASD, with the implication that all people with ASD have exceptional or ‘savant’ skills. Although some children with ASD have perfect pitch or particular musical abilities, the majority of these children are severely disabled in terms of social and communicative interaction, and will never develop exceptional skills, and it is important to maintain realistic expectations.

The biological theory of autism is now widely accepted (Frith 1990) and this suggests that there are abnormalities in the brain of people with ASD caused by a variety of biological factors. These defects may be caused by genetic factors or alternatively by problems with pregnancy, birth or viral infections. Brain abnormalities in people with ASD have been detected through various types of brain scanning.



The incidence of ASD is increasing (Baron-Cohen 2008); thirty years ago it was estimated that 4 in 10,000 people had a diagnosis of ASD, and it is now 1 in 100. There seems to be an even higher incidence of ASD in Cambridge where the music therapy research work was based, and also much research being carried out locally into causes and treatment options. The reason for the increase in autism has not yet been discovered. The rise in diagnosis rates should indicate that people with ASD will be more likely to have their needs met in an appropriate way, as the condition can be identified at an early stage. However, with funding restrictions in relation to music therapy provision and other interventions, this is not always the case.

There are many hypotheses as to why the occurrence of ASD has increased, and research continues to be carried out in relation to a number of elements:

‘it is likely to be a complex answer involving genetics, biology and neurology in combination with a number of environmental factors (before or after birth).’

(Yapko 2003, p.63)

Gastrointestinal complications in people with ASD and links with the MMR vaccine (Wakefield et al. 1998) have also been investigated, although speculations about the vaccine causing autistic symptoms have now been disproved (for example, Deer 2011). Some children with ASD are on alternative diets in an attempt to reduce symptoms, and these diets have been claimed to have a positive impact. However, some research suggests that digestive problems are linked to ‘neurobehavioral rather than a primary organic gastrointestinal etiology’ (Ibrahim, Voigt, Katusic, Weaver, and Barbaresi 2009).

Boucher (2009) draws together all the latest evidence and research linked with the causes of autism and also presents her own theories and suggested treatment programmes. She presents

her recent research about the aspect of damage to the hippocampus in the brain and associated memory difficulties as a possible cause for autism, and suggests that researchers are coming close to discovering the reasons for the condition.

Much enlightening literature on the subject of autism has been written by people who are themselves on the autism spectrum. Williams (1996) wrote about her own difficulty in absorbing and processing information, and responding simultaneously. She feels that this is ‘the cognitive problem underpinning most of the social and communication problems of people with autism’ (Williams 1996, p.99). Williams suggests that by reducing unnecessary external stimuli such as lighting and visual information, auditory communication can be more effectively absorbed. Indirect communication and body language can similarly be helpful in being less intimidating to people with ASD. Williams wrote about the way in which visual arts and music provided relief for her, in establishing a more effective form of communication than speech:

‘Art, music and movement, like typing, can be dissociated from conscious awareness...though no conscious processing or thought was happening about these musical experiences, they had a definite effect on me emotionally...Some created feelings of aloneness, some made me wild and manic, some made me cheerful, some felt ‘beautiful’.

(Williams 1996, p.245)

Williams also talked about strategies, such as ‘sensory mapping’ using sensory cues and labels to help with memorising people or places. Clear and predictable structures enabled her to function more efficiently and comfortably. Williams may be more intellectually able and eloquent than many other people with ASD, but her insight into the types of sensory confusion that she experienced are very useful in attempting to imagine how children with

ASD generally experience life. The understanding of children with ASD can be more extensive than they appear to be demonstrating through their communicative and interactive exchanges. When working with children over an extended period of time this sometimes becomes apparent as they mature, and can then demonstrate more effectively their level of comprehension. For example, recognising that the child is able to learn to read and write, despite their difficulties in communicative exchanges and capacity to absorb information and then connect with others.

Jeremy Sicile-Kira and his mother Chantal Sicile-Kira (2012) in their book 'A Full Life with Autism' describe Jeremy's journey to independence, and the way in which his mother supported him with providing a range of therapeutic interventions, as well as constant emotional support and encouragement to achieve what was considered by many professionals to be impossible. One of Jeremy's major frustrations as he was growing up was that people around him did not recognise his level of understanding, because of his inability to communicate verbally. In fact his level of comprehension was very good, and he went on to successfully attend further education college. Family members and his support team gave him the strategies to cope with sensory overload and deal with social issues. Jeremy writes about his difficulties with sensory-processing issues and sensitivity to noise, light and touch. He suggests that this is the reason why it is a challenge for individuals with ASD to respond in a flexible manner and interact in a 'neurotypical' way. The book finishes with his uplifting and optimistic statement:

'I think I have a bright future ahead. I know life will not be easy, but I look forward to doing my best. I hope I will be able to overcome the obstacles I face to live the life of a young man who wishes to help the world be a better place for all people.'

(Sicile-Kira 2012, p.211)

Kochmeister, who has both cerebral palsy and autism and does not speak, also describes her experience of absorbing information but not being able to respond immediately, cited in Waterhouse (2000):

‘The real difficulties occur in the speed and style of processing, digesting, and responding to what has been presented. This is largely due to an over-abundance of internal communication rather than a lack of it. It is exceedingly difficult to communicate with others when one’s time is so taken up with attempts to make sense of a world one finds so confusing. This is the true curse of autism – great ability to absorb coupled with poor ability to process and react’.

(Stelhi 1995, pp.81-86, cited in Waterhouse 2000)

Waterhouse (2000) gives a comprehensive over-view of treatment options for people with ASD, and stresses the importance of early intervention. She describes her consultancy, which she took over from Williams, where she looks into the problems experienced by the individual and then proposes specific treatment programmes. These treatments aim to address particular issues, such as sensitivity to light, sound and so on, so that the root problem is addressed in order to prevent defence mechanisms becoming entrenched. Dietary requirements and food intolerances are also investigated, as digestive complications can cause or exacerbate autistic ‘symptoms’. Waterhouse writes about the use of the hormone secretin, which for some people with ASD has had near ‘miraculous’ results in improving social behaviour such as use of eye contact, although for others it has had no positive effect. Certain combinations of vitamin supplements have also proved effective for some.

Waterhouse describes ‘desensitization’ programmes that can transform individuals ‘abnormal sensory perceptions’. These programmes include reflex inhibition programmes, sensory integration, Downing technique and auditory integration training. In addition to these

programmes Waterhouse describes holding therapy, behaviour modification, psychotherapy and play therapy, as well as philosophies such as the Option Method, Giant Steps Centre and the Higashi School. Her main emphasis throughout is on the involvement of the families with whichever approach or therapy is selected, and creating consistency and structure for the child. Communication strategies are also discussed including speech and language therapy, facilitated communication and sign language. Music therapy and art therapy are listed as part of a set of ‘complementary ideas’, alongside massage, relaxation and Snoezelen. This sidelining of music therapy intervention again indicates the need for more extensive research producing conclusive results about the effectiveness of music therapy for this client group.

### **2.2.1 Literature on music therapy for children with ASD**

Music therapy for children with ASD has been much written about and researched by music therapists over the last fifty years, and found to be a constructive treatment intervention. There is a wealth of casework material that music therapists have contributed within music therapy books and journals relating to work with children with ASD.

Nordoff and Robbins (1977) talk about the ‘musical awakening’ of the autistic child in their ‘creative music therapy’ work, where the child had a gradual awareness of potential interaction with others. At times this could lead to negative behaviours for some time after a connection had been established, and during this phase the child had to adjust to the loss of complete control. Ultimately more constructive and reciprocal exchanges could evolve after the child became prepared to engage in a positive way with song material and musical interaction. The musical material was considered to be central to the work.

Distinct phases in music therapy work with children have been referred to frequently in the literature. In Tomlinson (2010) casework with a young boy with ASD is described and the development of communicative interaction between therapist and child. The therapy work

was divided into phases, with initial resistance from the child, who felt that to engage would be a loss of control. Over time, ways were found to attune to the boy's behaviour, allowing periods of free exploration of the musical instruments before attempting to engage him. Eventually this secured his trust, and through building up imitative interaction, the child was able to engage in short humorous exchanges that were pleasurable and relatively relaxed:

‘Children with autism tend to have an innate desire to control, due to the anxieties associated with interactive exchanges with other people, and as a result can sometimes become entrenched in repetitive behavioural patterns. However, once they are convinced of the pleasures and empowerment of meaningful interaction, they can often be guided towards acquiring social skills that most individuals take for granted.’  
(Tomlinson 2010, p. 240)

In a similar vein Alvin and Warwick (1978, 1991) gave descriptions of their work with children with ASD, using a free improvisational model of music therapy. In relation to her work with autistic children Alvin wrote that:

‘I hoped that the musical experiences would help the (autistic) child to discover his innate creativity, express himself through a kind of sound, beautiful, violent, rough or timid; that he would be helped to come out of his loneliness through a world of music.’

(Alvin 1978, p. xi)

Berger (2002) writes about the use of music therapy in developing ‘sensory integration’ in children with ASD. She gives a comprehensive insight into the physiological disturbances of this client group, and suggests ways in which musical interaction may stimulate the child's capacity to become more stable and consistent in their perception of sounds and

communication. Berger suggests that the brain can be trained to listen in a different way through being regulated by rhythmical and melodic repetition, and reflects on the components of rhythm, melody, harmony, timbre, dynamics and form in addressing specific sensory problems. She also uses specific strategies to promote speech development in children with ASD, encouraging vocal imitation, which can then lead to speech development.

Tomlinson (2012) presents descriptions from video material of casework with children with ASD. The focus is on rhythmical reflection and the way in which this concept can be utilised to achieve more effective communication with the child. Through making this type of interactive exchange relaxed and enjoyable, the children were able to connect and build on their capacity to engage spontaneously.

McTier (2012) describes the development of musical improvisation with a teenager with ASD, who was initially terrified of making 'mistakes' in the playing. Starting with simple turn-taking on the drum, the therapist built up the amount of time that the girl was able to spend making confident musical contributions. Halfway through the therapy McTier introduced the double bass, which seemed to add extra containment and support. After a phase of individual sessions the girl was able to join a therapy group, which further developed her confidence and social skills.

A range of responses by autistic children to different musical instruments played by music therapists is explored in 'Flute, accordion or clarinet? Using the characteristics of our instruments in music therapy' (Oldfield, Tomlinson and Loombe 2015). Loombe (2015) gives insight into the way in which children with ASD are attracted to the buttons and mechanisms of the piano accordion; this desire to explore the instrument can lead to sustained and constructive interaction between therapist and child. Pears-Banton (2015) describes the way in which the sound and vibrations of the clarinet attracted a six-year-old

boy with ASD to come and engage with the therapist, transforming the levels of interaction and leading to humorous hide-and-seek exchanges. Gilroy (2015) gives a detailed account of the development of his relationship with a boy with ASD, with exploration of the flugelhorn forming a central focus for the sessions. After a lengthy period of individual sessions, where the initial resistance to shared play was gradually reduced, the boy was able to transition into a music therapy group. Corke (2015) described the calming effect of the flute in conjunction with movement of the trees outside the therapy room window, which reduced the agitation of the boy with ASD with whom she was working.

LaGasse and Hardy (2013) claim that children with ASD have difficulties with motor and sensory deficits and discuss the way in which they use rhythm in music therapy sessions to facilitate more controlled body movements. They conclude with a quote from Goddard, an autism activist, who finds this type of technique useful: ‘In music therapy I’m benefitted by pairing to your upping rhythmic beats to motor my body. Trying to be me in harmony!’ (LaGasse and Hardy 2013, p.77)

Ockelford (2013) writes about his teaching work with children with ASD and estimates that perhaps 5% of children with autism have exceptional musical skills (p.29), and it appears that there is something about the ‘autistic brain’ that is particularly responsive to the patterns and sounds found within musical structures.

This is also referred to by music therapist Lim (2012):

‘many children with ASD have superior musical sensitivity and a perceptual preference for music. Research has shown that sometimes these children respond more favourably and appropriately to music than other sensory stimuli. Furthermore, children with ASD are able to perceive and produce well-organized musical patterns, such as melodic and rhythmic patterns.’ (Lim 2012, p.25)



Lim's use of song structures to encourage verbal communication in children with ASD will be discussed later in the chapter (2.5.2), in relation to verbal development.

### **2.2.2 Literature on music therapy research for children with ASD**

There has been much research looking into music therapy with children with ASD over the last twenty years. Music therapists are generally required to 'meet the challenge' of providing Evidence Based Practice in order to secure funding for their work, and to encourage other professionals to make relevant referrals to music therapy (Wigram 2002, Gold 2011).

Research can facilitate clinicians' discovery of the most constructive ways of working with particular client groups, which can potentially lead to more effective outcomes for clients.

Edgerton (1994) carried out a study into the use of improvisational music therapy with children with ASD aged six to nine years. Her focus for the research was to ascertain whether the communicative behaviours of the children increased over a period of ten weeks, and to measure the communication she designed a checklist, which she entitled the Checklist of Communicative Responses/Acts Score Sheet (CRASS). This was based on aspects of various rating scales for musical communicativeness, ASD and communication scales. All the sessions were video recorded and ten-minute sections were randomly selected for analysis. Two observers viewed the excerpts and rated them using the CRASS system. A reversal design was used consisting of a) intervention, b) in session six, withdrawal of intervention and c) reinstating intervention. The withdrawal of intervention involved playing pre-composed songs rather than using improvised music making. The outcome of Edgerton's study was that music therapy was effective in increasing the communication of children with ASD, but that the communicative behaviours decreased in session six during the use of pre-composed songs.

Buday (1995) studied the use of music as opposed to rhythm in facilitating speech development in ten children with ASD. The results of the study were positive providing evidence that music could be effective in helping the children to acquire speech. More detail about this study will be provided later in the chapter in relation to vocal development in music therapy.

Whipple (2004) carried out meta-analysis research into the use of music in intervention for children and adolescents with ASD. The analysis incorporated nine quantitative studies comparing music to non-music conditions during treatment. Statistically significant figures were produced which indicated that ‘all music intervention, regardless of purpose or implementation, has been effective for children and adolescents with autism.’ (Whipple 2004, p. 90)

Oldfield (2006a) describes her ‘positive approach’ to work with children, including children with ASD. Oldfield carried out an investigation into her work with pre-school children with ASD, measuring through video analysis the change in the children’s behaviour in relation to therapeutic objectives for sessions. Music therapy reports were also reflected on in relation to the video data. Semi-structured interviews were carried out with the parents of the children, and ‘Parenting stress index’ forms completed. The results of the study showed that generally the music therapist’s perception of the development in the children was positive (as written up in the reports), but that this was not always directly reflected in the video analysis data. However, this could have been due to the way in which the data was collected, in that it was difficult to measure accurately the development in length of eye contact or turn-taking. Additionally the negative behaviours of some of the children could increase in particular situations, which was not necessarily detrimental to social progression, as the child might be becoming more freely expressive and relaxed in the context. Opportunities could then arise for the parent to see the therapist exploring ways of dealing with the challenging behaviours.

The research was successful in enabling the therapist to learn about the impact of her work, and in monitoring results of therapeutic intervention for the children involved.

Gold, Wigram and Elefant, (2006) carried out a Cochrane Review about music therapy for children with autism spectrum disorder, although the exclusion criteria resulted in only three articles being included. The outcome resulted in ‘small to medium effect sizes indicating that music therapy was significantly more effective than the non-music therapy conditions for addressing verbal and gestural communicative skills.’ Geretsegger, Elefant, Moessler and Gold (2014) updated this review, incorporating ten studies with 165 participants. In both these reviews the results indicated that music therapy was effective for developing social skills in people with ASD, but concluded that more in-depth research with larger numbers of participants was needed.

Simpson and Keen (2011) carried out a literature review into the beneficial effects of music therapy for children with ASD. The review was intended to determine the evidence base for the use of music as an intervention for children with ASD. 128 articles were identified but only 20 of these met the criteria for inclusion which were as follows: 1) articles had to be from a peer reviewed journal, 2) they could only involve music therapy with children with ASD, 3) they could not involve work with children with savant skills, and 4) they had to include intervention that targeted a particular skill through musical interaction. The authors declared that there was ‘somewhat limited evidence to support the use of music interventions under certain conditions to facilitate social, communicative and behavioural skills in young children with autism.’ (Simpson and Keen 2011, p.1507) Suggestions were made about the use of musical intervention in relation to these findings, and future research implications were discussed.

Kern et al (2013) carried out a survey of music therapists in relation to their knowledge and expertise in working with people with ASD. The outcome of the survey was that therapists had a sound knowledge of the client population and were increasingly moving into working with them in their home and community settings, although more involvement in keeping up with recent trends and developments in research into ASD was thought to be significant and advisable.

Geretsegger, Holck and Gold (2012) are currently in the process of leading an international randomised controlled trial into the effectiveness of improvisational music therapy in meeting the needs of young children with ASD in relation to social and communicative abilities. This large scale research project (300 children) will additionally consider the implications for session frequency for therapy outcome, so some of the children will receive therapy several times a week, and some only once. The objectives for sessions will address whether music therapy can facilitate improved social and communicative abilities in children with ASD as assessed by independent clinicians at the end of treatment, whether music therapy can facilitate improved social responsiveness as assessed by parents and guardians at the end of treatment, whether therapy effectiveness is variable with the number of sessions attended, and lastly how the child's social and communicative abilities proceed when assessed twelve months after the start of treatment.

LaGasse (2014) carried out research into the use of group music therapy to develop social skills in children with ASD. The objectives for sessions were to improve eye gaze, and joint attention and communication. The children's behaviour was recorded through video analysis. The study involved seventeen children with ASD, who were randomly assigned to a music group or non-music social skills group. Both types of session were structured and contained activities that worked towards supporting social therapeutic objectives, but one type contained musical frameworks and the other did not. The Autism Treatment Evaluation

Checklist was used to monitor the children's progress. Video material taken from the third and tenth music therapy sessions was analysed by music therapy research assistants. The conclusion of the study was that more research is needed into group music therapy for children with ASD, but that statistical evidence of improved joint attention for this client group in music therapy was produced.

### **2.3 Literature on cerebral palsy (CP)**

Cerebral palsy (CP) is a physical condition that affects movement, posture and co-ordination. It is usually diagnosed at birth or in early childhood. Each individual with the condition will be affected differently, and it can vary from mild to severe. For some people, cerebral palsy will only affect them physically. However, others may be affected by seizures, epilepsy or difficulties with speech and language, and some will also have a learning disability. Although there is no cure for cerebral palsy, therapy can help to improve posture and muscle control. An early diagnosis can also help to ensure someone with a learning disability or problems with speech and language receives the professional support they need early in their development (Mencap website 2013).

Stanton (1992) has a son who has CP and she wrote a practical guide for parents of children with this condition, in which she takes the reader through the process of diagnosis and treatment options. She draws attention to the fact that for the last fifty years doctors have been attempting to treat CP, but it is now recognised that the condition is not curable and that management of the symptoms and facilitating improved communication systems is the best way forward for children with CP. Stanton lists suggested options for therapeutic treatment, such as physiotherapy, conductive education, occupational therapy, speech and language therapy, music therapy, art therapy and vibroacoustic therapy, as well as alternative treatments such as acupuncture (for releasing tension in joints and regulating fluids),

homeopathy and herbalism, reflexology, aromatherapy, massage and yoga. In relation to music therapy Stanton claims that:

‘Through music a child can express her emotions, develop a sense of rhythm (which will in turn support their physical development), develop her communication skills, benefit from auditory and tactile (through vibration) stimulation and relax.’

(Stanton 1992, p.97)

### **2.3.1 Literature on music therapy for children with CP**

Music therapists in the UK have been writing about the use of music therapy for children with cerebral palsy and learning disabilities since the 1960's (Alvin 1966) and in recent years more research has been carried out into the effectiveness of music therapy treatment for this client group.

The American Cerebral Palsy Family Network (ACPFN) website (2013) has a section on music as therapy and states that particular skills can be developed through musical interaction and engagement. These skills include the development of gait control and physical co-ordination, communication, finding more enjoyment in repetitive movements and focusing attention. The ACPFN concludes that it is the specific characteristics of their disability that makes people with CP so responsive to musical intervention:

‘Researchers are beginning to notice that the benefits of music therapy are particularly profound for patients with cerebral palsy. This is because both music and cerebral palsy tend to affect multiple areas of the brain. Although cerebral palsy by definition affects motor skills, it is often accompanied by disturbances of sensation, cognition, communication, perception, and behavior

and seizure disorders – all of which may arise from different areas of the brain.

Music bridges and enhances cross-brain connections.’

(American Cerebral Palsy Family Network website 2013)

Musical intervention has been widely used to support social, physical and emotional development in children with CP. Herman (1985) used a combination of mime and music to support the communication of children with CP, and stresses the importance of listening to the child before responding, and also speaking slowly and clearly to the child if they take time to process information. Bean (1995) writes that ‘The child with cerebral palsy, despite many difficulties, has great potential. S/he can be well motivated, creative in his/her ideas and thus an exciting child to work with.’ (Bean 1995, p.194) Bean also discusses the way in which he combines a ‘directive’ and ‘non-directive approach’ to music therapy with children with CP, according to the specific needs of the child.

Music therapist Wigram and physiotherapist Weekes (1985) discussed the amalgamation of their therapeutic input in order to make repetitive exercises enjoyable, and to encourage the individual with CP to rise to new challenges. Wigram, Weekes and Skille (1989) additionally found that the use of a vibroacoustic bed or chair could help clients with CP with muscle spasm reduce this type of tension, and in addition to this, general relaxation and use of the voice were increased. Skille and Wigram (1995) give a detailed account of the physiological reasons for the positive effect of the vibroacoustic bed for treating a number of different conditions.

Therapeutic use of consistent rhythmic patterns can encourage children to regulate their movements. Bunt (1994) discussed the use of rhythmic music in facilitating more evenly paced walking in children with CP, and in one case study noted that the client was ‘using the

internalised tempo of the song by inwardly singing the song to herself, helping her own self-organisation' (Bunt 1994, p.59). Darnley-Smith and Patey (2003) presented a description of music therapy with a group of three young children with cerebral palsy, explaining how each child's needs were met within the group context. The music making was used to address various developmental issues, providing opportunities for expressive play and social interaction, as well as focusing on the use of the mouth and breath control to create sound on the reed horns and recorders. In a similar way, Bruce (2012) described her work with a young girl with CP and the multi-disciplinary approach that was effective in meeting the child's needs. Bruce discusses the common link between herself and the other health professionals in attempting to improve the posture, communication and social skills of the child, but how this seemed to happen effortlessly in music therapy as she was so naturally engaged in both active music making and in observing other people's playing. The child's parent commented that "Music therapy is giving Mia a voice...She's got control – that's why she likes it" (Bruce and High 2012, p.74). This type of collaborative working was also described by Fearn and O'Connor (2008) in their case work with children with CP, where a collaborative approach with teachers and physiotherapists resulted in developing a way of working which they entitled 'music and attuned movement therapy.' One severely physically disabled child worked intensively together with the teacher and music therapist, with the therapist matching breathing patterns and attempting to communicate with the child that she was 'not alone'. The therapy was successful in reducing the child's distress and engaging her on a communicative level.

Achenbach (2012) wrote about his experience of working with a three-year-old girl with CP, who initially found the sound levels in the group music therapy session too anxiety-provoking to tolerate. After a seven-month break from therapy sessions, she returned to the group and was able to develop her ability to respond to and tolerate the sounds, becoming



engaged in active music making and vocalising. Humorous turn-taking exchanges kept her interest and prompted her to become involved in social activities, as well as motivating her to co-ordinate her movements to grasp the musical instruments. This aspect of physical control was also explored by Bruecker (2014), who described the concept of ‘emotion in motion’, relating to the inability of the child with CP to control movement and thereby access expressive opportunities. Bruecker discusses casework with a young girl with CP and her mother; issues around control, emotion and partnership with the parent were explored. The outcome of the therapy was that the girl had the opportunity to explore relationships, have the experience of taking control over other people in a positive way, and also to learn to enjoy humour in a freer way without feeling self-conscious or inadequate.

In an attempt to give the child with CP more physical autonomy, Ahonen-Eerikainen et al. (2008) explored the use of a Virtual Musical Instrument with children with CP; this is a computer generated programme which reflects back the image of the child and their electronic sounds. This was thought to be more accessible to the physically restricted child than traditional musical instruments and can provide a spontaneous and effective means of self-expression. The reflection of the child’s image was thought to reinforce the child’s sense of identity and self-esteem. Similar uses of technology have been implemented with children with CP through Soundbeam (Swingler 1998).

### **2.3.2 Literature on music therapy research for children with CP**

Perry (2003) carried out an analysis of the communication of children with CP in music therapy sessions. Ten children with CP or PMLD were involved in the project and video recordings were taken, demonstrating the children’s communicative behaviour in sessions. It was found that playing, turn-taking and singing in sessions facilitated increased communication opportunities for the children. Kwak (2007) researched the effectiveness of

rhythmic auditory stimulation (RAS) on the development of movement in twenty-five children and young adults with CP. All the participants were ambulant but needed to obtain more control over their movement. Gait performance, velocity and stride length all improved significantly in the group having RAS in-put.

Gilboa and Roginsky (2010) carried out research into the positive effects of music therapy on the communication and relationship between mother and child with CP when working together with the music therapist. Concepts which were explored as part of the study included the diagnostic value of music therapy, the power to contain the relationship between child and parent, the capacity to enhance communication and the ability to facilitate an autonomous relationship between parent and child.

#### **2.4 Literature on profound and multiple learning disabilities (PMLD)**

The definition of learning disability as stated on the Mencap website is ‘a reduced intellectual ability and difficulty with everyday activities – for example household tasks, socialising or managing money – which affects someone for their whole life...A learning disability occurs when the brain is still developing - before, during or soon after birth.’ (Mencap website 2015) The website goes on to explain that the brain and spinal chord can be damaged antenatally through genetic make-up, or the foetus may be negatively affected if the mother has an accident or illness during pregnancy. Oxygen restriction during birth or early childhood illness can also cause a learning disability. Emerson and Hatton (2004) produced figures for the prevalence of learning disability in the UK population, estimating that there were 985,000 people with learning disabilities at this point (2% of the whole population). They predicted a rise in these figures over the next twenty years, with adults with learning disabilities living for longer, and survival rates increasing in babies with developmental problems.

People with profound and multiple disabilities (PMLD) have more than one disability, and one of these is profound intellectual impairment (Lacey and Ouvry 1998, 2012). Most individuals with PMLD will have an IQ of less than twenty, and will be in the early developmental stages in terms of intelligence and understanding. In addition to this learning disability, people with PMLD may have autism, epilepsy, challenging behaviour and mental health problems. Hostyn, Neerinckx and Maes (2009) carried out a literature review of interaction with people with PMLD and found that joint attention between carer and client is essential in providing high quality interaction. In 2011 the same authors examined joint attention in interaction between carers and people with PMLD, with part of the focus being on how the carers responded to the attention-directing efforts of the person with PMLD, and also how the carer attempted to direct the attention of the person with PMLD. Video analysis was utilised to assess these types of interaction. In general the clients infrequently directed the attention of the carer, but the carer frequently tried to direct the attention of the client. Within each dyad there was not much joint attention, but there was frequent shared attention (which strongly relates to joint attention). Too much tactile prompting of attention on the part of the carer was found to have a negative impact on joint attention.

#### **2.4.1 Literature on music therapy for children with PMLD**

There is less music therapy literature specifically about music therapy intervention for children with PMLD than with children with ASD or CP, but possibly this relates to terminology rather than lack of literature; a child with severe CP could also be perceived as having PMLD, but the diagnostic label might create an overlap.

Wheeler (2000) writes of her experience of pleasure in working with severely disabled children, which was connected with her perception of the child doing something intentionally, sustaining interest and attention, or making communicative gestures. She also

found satisfaction in the experience of the client allowing her to physically assist them.

Watson (2007) raises the issue of people with PMLD finding it difficult to access musical instruments through physical disability and processing problems. She suggests a joint session with a physiotherapist at the start of treatment can be helpful in assessing the capability of the person with PMLD to play particular musical instruments. Certain instruments might be able to be modified or put at a different height so the child can access them. Other practical suggestions include initially working with the client in a familiar environment before making the move to the music therapy room, and modifying the music therapy approach to allow more time for responses from the clients.

Strange (2012) gives an overview of his psychodynamic approach to working with students with severe learning disabilities, giving descriptive accounts of the clients' music making and interaction in sessions. He suggests that providing an open framework, with plenty of opportunity for free expressive play, can meet the needs of the individuals in being heard and responded to musically and vocally.

#### **2.4.2 Literature on music therapy research for children with PMLD**

Detzner (1997) worked alongside teachers in a school with the research objective of increasing the articulation skills for children with PMLD. The students ranged in age from three to twenty-one years, and were variable in their intellectual and communicative abilities. Detzner collaborated with teachers and instructed them on how to encourage students to repeat words which were sung and accompanied rhythmically on a drum, so that the rhythmic component of speech was reinforced. The students were assessed using evaluation systems to quantify the baseline communication at the start of the project, and the progression at the end of the twelve-week period. All the students made remarkable progress and reduced the occurrence of errors in articulation, and the majority of the students increased their use of

spoken communication. Additionally the teachers considered that the students had increased self-esteem and confidence by the end of the project.

Braithwaite and Sigafoos (1998) investigated the use of musical frameworks to develop communicative responsiveness in children with developmental disabilities. Five children were presented with tasks such as communicating a greeting, naming objects and requesting materials. A reversal design was utilised whereby the children carried out these tasks with and without a musical framework. Three of the five children responded more communicatively with the music than non-music structure. Similarly the effects of live music making were assessed by DeBedout and Worden (2006), who carried out a study into the impact of the presence of a music therapist in eliciting vocal and physical responses from seventeen children with severe intellectual disabilities, as opposed to having access to switch-activated toys and recorded music. The sessions were video recorded and positive responses were assessed in relation to limb and head movements, vocal sounds and facial expression changes. The conclusive results from the study were that the children responded more effectively to the music therapist rather than to other mechanical and electronic stimuli.

McFerran and Stephenson (2010) carried out music therapy research in a special school context, analysing the benefits of music in therapy for children with severe disabilities, using detailed video analysis. The effectiveness of using music, as opposed to the therapist not using song or musical material during a one-to-one interactive session, was studied. Four children and four therapists took part in the study, and the children and therapists had established relationships in the context of music therapy prior to the study. The children's communicative behaviour, such as levels of engagement and vocalising, during musical and non-musical interaction was quantified through the video analysis. Although the results were

not conclusive the researchers made interesting methodological observations in relation to video microanalysis and coding systems.

McFerran and Shoemark (2013) carried out research into the relationship between a music therapist and a young man with profound intellectual disabilities disorders (IDD). External perspectives were given by other professionals of the video footage of the music therapy sessions. Four principles of engagement which were critical to the success of the therapeutic relationship were identified as being: the music therapist listens; the music therapist takes responsibility for structure; spontaneous initiation is sought from the young person; and the relationship is built over time. The authors discuss the concept of communication and relationship within the confines of limited ability, and the necessity for the therapist to modify expectation in terms of vocal development:

‘In addition to significant cognitive and movement limitations, young people with profound IDD often have visual and hearing impairments, as well as epilepsy. This creates what is effectively an ‘averbal’ state since the possibilities for achieving developmental milestones are severely impacted. Those who love and work with people with profound IDD know that this does not preclude the development of the individual's capacity for relationship, development of personality, lifestyle preferences and emotional development, all fundamental markers of well-being.’

(McFerran and Shoemark 2013, p.20570)

## **2.5 Literature on language acquisition in children**

Language acquisition in babies and young children is an astonishing feat and there is much that remains unknown about exactly how this process works. Early babbling and gurgling of babies, alongside encouragement, gestures, turn-taking and imitation from carers can

ultimately lead to the acquisition of complex communication systems and language development (Oates and Grayson 2004, O'Grady 2005, Saxton 2010). The pre-verbal stages of development are also described in psychoanalytic terminology (Trevarthen 1979, Stern 1985). Stern (1985) writes about the 'emergent sense of self' and 'sense of a core self', leading on to the 'sense of a verbal self'. Most music therapists (eg. Papousek and Papousek 1981, Trehub and Thorpe 1989, Robarts 1996) can relate to Stern's concepts of attunement, with the different elements of absolute intensity, intensity contour, temporal beat, rhythm, duration and shape dominating the interactions between mothers and babies, with the capacity for this to be replicated in the music therapy context.

Language development experts describe the way in which babies are physiologically designed to listen from their earliest moments in the womb (Moon, Lagercrantz and Kuhl 2013), and research has been carried out to monitor babies' capacity to respond to specific sounds that they have heard during the mother's pregnancy, as well as the fetus being affected by emotional aspects of the mother's experiences during pregnancy (Paul 2010). Babies will turn their heads and look for longer periods of time when sounds are played to them, that replicate those they have heard during gestation. After the baby is born 'general rhythmic and intonational features of language' can be perceived (O'Grady 2005, p. 144), and at the age of one to four months, particular consonant sounds start to be distinguished, such as 'b' and 'p'. By the age of one year, children are generally starting to have the capacity to identify sounds as pieces of words, rather than individual sounds. They gradually build up a repertoire of babbling sounds, which directly relate to the language that they will eventually speak. By the age of two, most children have established which sounds are used in their language, and are able to replicate many of these sounds. Difficulties with pronunciation are coped with in a variety of ways, such as leaving out these sounds or replacing them with alternatives (O'Grady 2005).

Despite the child accumulating this range of sounds through copying parental patterns of speech, the acquisition of language is far more complex than direct imitation (Oates and Grayson 2004, O’Grady 2005). Children cannot initially copy complex linguistic structures, so they break down the adult’s sentences into chunks that they can easily reproduce, for example, “The dog is chasing the sheep” could be reduced to “Dog chase sheep”. The concept of parents ‘teaching’ their children to speak has also been researched, but in reality parents do not correct their children’s speech very often. The idea of parents making language more accessible through using ‘motherese’ and slowing down their speech to help their child acquire language has also been studied. Although this can make it easier for the child, families have been studied where the parent continues to speak very quickly to the child throughout their early linguistic development, and the child still successfully develops speech (O’Grady 2005). The most important aspect of children’s language development seems to be dependent on the child hearing sentences that they can understand and make sense of. Parents generally do talk to children about people and things that they can comprehend, and concepts that the child has experience of and can relate to. This seems to be crucial in relation to the child developing an understanding of how to use language effectively. Despite having knowledge of these systematic language acquisition processes, language development is still a mysterious concept with much still to research and discover (O’Grady 2005).

### **2.5.1 Literature on voicework and vocal development in music therapy**

Vocal development can sometimes be the objective for music therapy intervention. Streeter (1993) presents information for parents about how best to support children’s development through musical interaction. She advises parents:



‘Whether or not your child can speak, making music can stimulate pre-speech vocal sounds which explore a range of consonants, vowels, pitches and timing. Language isn’t all about words, it is also about enjoying communicating. By helping your child explore her voice freely, and playing with the sounds she can create, you will be doing something vitally important: helping her enjoy exploring her voice. Because she is interested in the sound of music your child will automatically be listening more carefully and this is one of the first steps towards ‘conversation’. (Streeter 1993, p.17)

The idea of engaging a child in fun, reciprocal exchanges and this leading to effective communicative interaction may be central to music therapy work, as can be the idea of encouraging the child to engage in free exploration of the voice. Through using musical frameworks and engaging children in singing activities, an expressive outlet can be provided, as well as developing more coherent speech.

Music therapist Sutton (1995) described her research work in the area of speech development with children with speech and language impairment (SLI). She noticed that there was a parallel between the ‘spontaneous musical responses’ (SMR) of children and their speech and language development. Sutton then carried out research into rhythmic memory and repetition in groups of children, some with SLI and some children from mainstream schools. The results were complex, but mostly indicated a link between the ability to acquire language successfully and the capacity to memorise rhythmic patterns.

The power of the voice is increasingly being recognised within the music therapy profession, and this is reflected in recent literature. In the foreword to ‘Voicework in Music Therapy’ (Baker and Uhlig 2011) Austin writes that:

‘The voice is the instrument we are born with, the most intimate instrument of all...Our voices connect us to others. The exchange of sound and energy enable us to

resonate with each other, helping to break through the walls of loneliness and isolation to form bonds and community.’ (Austin 2011, p.13)

Austin points out that all music therapists are dependent on the use of their voices in their work and yet training courses do not always prepare them thoroughly for using this valuable tool. In Austin’s work with music therapy students she develops their capacity to connect on an emotional level with their voices, so that they can in turn connect openly and effectively with their clients, promoting positive change and development. In the same book Thane (2011) describes her vocal-led relaxation method for children with ASD, sustaining a steady and resonant vocal tone to induce relaxation in the children, who lie down on the floor with pillows and blankets during the session. Using this method on a regular basis has enabled some children to develop calming techniques to help them cope with everyday life.

The therapist’s voice can be used in a calming and maternal way with young children with special needs, but the voice also has the capacity to stimulate and encourage vocal development. The different beneficial effects of the voice on individuals in therapy work can be wide-ranging. Austin (2008) investigates why the voice is such a powerful tool in clinical work, and why the client singing can provide such a therapeutic release, with numerous healing outcomes. She describes the physical implications of singing:

‘When we sing our voices and our bodies are the instruments. We are intimately connected to the source of the sound and the vibrations. We make music, we are immersed in the music and we are the music.’ (Austin 2008, p.20)

Uhlig (2011) uses rap singing in her work with children with special needs in a school in a deprived area of New York. Rapping provided an accessible and therapeutic outlet for children with complex emotional needs as well as developmental difficulties. Certain types of music would have been inappropriate to use with this client group, but Uhlig has found that

rap music can give a sense of identity and cohesion in children with challenging day-to-day lives. Similarly Derrington (2012) discusses the use of a variety of song material in her research work with teenagers, encouraging the students to bring a range of their own music to sessions, with which they can identify on an emotional level.

### **2.5.2 Literature on research into music therapy and the development of verbal abilities in children with special needs**

Hoskins (1988) carried out a research investigation into the relationship between sung and spoken responses and standardized speech tests, and also to look into the use of music making to increase speech abilities. Sixteen children between the ages of two to five years were included in the project, and were tested for linguistic ability pre- and post-intervention. Picture vocabulary tests were used in a standardized format, and in a melodic format. The children received ten weeks of group music activities with the objective of extending expressive language skills. A significant improvement in picture vocabulary tests in the melodic format was found post-intervention, indicating that antiphonal singing with picture cards in the group sessions had been beneficial.

Buday (1995) carried out research into the effects of rhythm and melody on the systematic learning of signs and spoken words in children with ASD. Ten children were taught a range of fourteen words and signs, some under the condition of signs plus music and speech, and others under the condition of signs plus rhythm and speech. Correctly imitated words or signs out of a number of seven were measured under each condition. The conclusion was that the music condition produced the most favourable results, with the implication that musical frameworks can help support language development in children with ASD.

The combination of rhythmic and melodic structures can be highly compelling and motivational in encouraging children to extend their use of verbal interaction. Farmer (2003)

carried out research into the effect of music versus non-music sessions with children with ASD, to assess whether the musical content had an impact on the development of verbal and non-verbal communication. The study included ten children with ASD aged two to five years, who attended five music or non-music sessions (control group). Sessions were videoed and then assessed using a scoring system, whereby each individual was given marks according to communicative responses; a score of two was given for an accurate verbal or gestural response and one was given for an attempted verbal or gestural response. The individuals in the music group made significant increases in their use of verbal communication, but the subjects in the non-music group made little progress with verbal contributions. The use of gestures was fairly limited with both groups, though the music group did better than the control group in relation to gestural interaction. The limited development of gestural abilities demonstrated the concept of motor control being problematic for children with ASD. Farmer concluded that once musical interaction had been experienced by the child as a pleasurable activity, musical exchanges could be used as an incentive to encourage communicative behaviours.

Groß, Linden and Osterman (2010) carried out research into the effects of music therapy in treating children with delayed speech development. Eighteen children aged three-and-a-half to six years received blocks of music therapy in an ABAB format, with eight-week breaks in between. A psychologist and speech therapist tested the children using speech and non-verbal developmental tests before and after treatment. The researchers concluded that music therapy could have a positive effect on speech development through facilitating improved social and relationship skills, and extending prosodic ability.

Lim (2011) carried out research with 22 children with ASD aged three to five years, who were either verbal or pre-verbal, and had echolalic tendencies. The study looked into the

different approaches of Applied Behaviour Analysis Verbal Behaviour (ABA VB) and music incorporated into ABA VB. The research participants were offered three treatment options: i) music incorporated ABA VB, ii) ABA VB, iii) no treatment. Results showed both music and speech trainings were effective for production of the four ABA verbal operants; however, the difference between music and speech training was not statistically different. Results also indicated that music incorporated ABA VB training was most effective in echoic production, and speech training was most effective in tact production. Lim concluded that music can be incorporated into the ABA VB training method, and musical stimuli can be used as successfully as ABA VB speech training to enhance verbal production in children with ASD.

Lim (2012) claims that the theory behind this potential verbal development lies in the capacity of children with ASD to:

‘produce more advanced speech patterns by imitating musical patterns in a song which contains such elements of the speech patterns as vocabulary words, rhythm pattern, prosody, and form. The perception and production of musical patterns might positively influence the perception and production of speech in children with ASD.’

(Lim 2012, p.71)

## **2.6 Literature on communication with parents during music therapy with children**

Even when parents are not present during music therapy sessions, the relationship the therapist has with parents of children with ASD can be highly significant and potentially influential in the success of the therapy. Robarts (1996) gives an overview of research, music therapy clinical work and related child development theory, followed by a detailed account of music therapy work with an autistic child over the period of one year. During this casework she worked closely with the child’s mother in confronting issues around separation anxiety,

and used particular musical techniques to secure a trusting, humorous and therapeutically constructive relationship with the child. She concludes by writing:

‘The power of music to reach into the emotional experience and inner being of a child is the essence of music as therapy, which engages and influences the whole personality and potential of the individual, changing awareness, initiative and the capacity for learning and development.’ (Robarts 1996, p.160)

Bull (2008) considers the impact of a diagnosis of ASD on family life and consequent attachment difficulties. She gives insight into the merits of running music therapy groups for parents with their autistic children, providing new ways for the parent/child dyads to relate to and communicate with each other, as well as establishing a much-needed support network amongst the parents; ‘a place to celebrate their achievements and to explore their potentially difficult and painful emotions.’ (Bull 2008, p.86)

The impact of having a child with ASD can have dramatic and challenging consequences. Parents often have to cope with sleep deprivation, behavioural issues, lack of close physical contact and affection, safety concerns, and so on, that can have a negative affect on daily life. Music therapy groups for younger children with ASD and their parents can provide excellent support, and potentially lead to the development of life-changing relationships. Woodward (2004) describes her work with children with autism and their parents, and the way in which music therapy can support social and communication development, and in addition to this it can:

‘play an important role for parents of children with autism, who may be under great stress, by fostering relationships, developing positive interactions and helping them to feel contained and supported.’ (Woodward 2004, p.8)

Oldfield (2008) writes of her partnership with parents with whom she works alongside in music therapy sessions. The relationship she has with the parents is an integral part of the intervention for the children. The parents are often able to witness the children behaving in an interactive manner or being successful during communicative exchanges, in a different way than they do in other contexts. If the children are demanding or attention seeking, Oldfield is able to focus on this behaviour in a constructive way, helping the parents to consider strategies for dealing with this behaviour.

Thompson (2012) also describes music therapy practice working with parents of children with ASD, providing opportunities for parents to explore and develop alternative interactions with their children through shared music making.

Davies (2012) writes about her work in a children's centre for pre-school children, and describes the way in which the treatment was much more effective through her liaison with parents. Davies worked together with the father of a child with ASD, thinking through communication strategies that they could follow up at home. This provided emotional support for the parents, and a constructive treatment programme that facilitated more positive interaction for the child. In the same setting Rosscornes (2012) wrote about her experience of working with a child with ASD in a music group, and the capacity for the therapist to identify autistic characteristics that may not have been recognised in other contexts. In this situation the therapist's recommendations led to the child being assessed and consequently diagnosed with ASD.

Thompson and McFerran (2015) collaborated with families of children with ASD, looking into the effects of family-centred music therapy on the relationship and communication between parent and child. Qualitative analysis of interviews with parents revealed positive

changes in the parent child relationship, in relation to the quality of the relationship, the parents' perception of the child and the parents' response to the child.

Kaenampornpan (2015) describes her close work with families in schools in Thailand, where she was often encouraging family members to be directly involved in the therapy sessions, with very constructive outcomes. As music therapy is not yet well established in Thailand, Kaenampornpan had to be very clear with the families about music therapy intervention and what her objectives for sessions were. Interpretative Phenomenological Analysis was used in this qualitative research study, with a focus on the analysis of interview material with family members. Music therapy video footage was also shared with families, both to inform them of the therapy process, and for the therapist to receive feedback on their perspectives.

## **2.7 Literature on collaboration between music therapist and other professionals in health and education settings**

An important aspect of working as a music therapist is liaising with other professionals in the work context. Twyford and Watson (2008) devote a whole book to the topic of 'Integrated Team Working', with contributions from music therapists who have worked collaboratively with teachers, doctors, parents, nurses and other therapists in a variety of settings, with both adults and children. The book presents a range of inspiring case studies about the positive effects of collaborative working in health and education settings. Most of the casework described presents the concept of working alongside other professionals within a group of clients, and very little of the case material relates to work alongside TAs in schools.

Some music therapists find that direct collaboration with teachers or other therapists in schools can be extremely valuable and lead to clear benefits for children. Pethybridge and Robertson (2010) present ways in which therapeutic objectives can develop into more educationally focused musical goals with pupils in mainstream schools, and ideas shared



between music therapists and teachers as to how to facilitate this outcome. Pethybridge (2013) also worked collaboratively with a teacher to design a music therapy group for three children with ASD. She found that although the teacher could not replicate her skills exactly, in terms of instrumental reflection of the children's play, there were aspects of the intervention that could be shared with the teacher that she could repeat independently.

Music therapist Bruce and class teacher High (2012) reflected on their collaborative working with a child with CP and severe learning difficulties, as well as collecting feedback from other professionals involved in the child's care. Video extracts from a music therapy session were played to the teacher, the physiotherapist, the speech and language therapist and the occupational therapist, to gather information about their perspective on the intervention. All the professionals commented on how engaged and involved the child was in interactive play, and how the music making gave her a sense of autonomy and control.

Collaboration with teaching staff is not always straightforward and it is necessary for therapists to communicate clearly when sharing information. Leite (2002) presented a paper on the blurred boundaries of collaboration with teachers during short training courses delivering music therapy 'techniques'.

'These observations have led me to believe that I often run the risk of contributing to the creation of a distorted idea of what music therapy is, given that we often resort to the same type of activities and we insist on the idea that the music repertoire can be drawn from the musical material that the child or adult is already familiarized with.'

(Leite 2002, p.1073)

Leite goes on to point out that teachers who use music with children with special needs can often already be taking a similar approach to the Educational or Developmental Music

Therapy model (Robertson 2000). She concludes that experiential music workshops for teachers are frequently the most valuable form of training, as the teachers practical experience of being involved in free, creative music making can provide the most inspiration in terms of ideas to take away with them to use in the class context.

Music therapist Rickson (2012) presents her collaborative consultative work with teachers and other professionals in mainstream schools that integrate children with special needs in New Zealand. Rickson investigated the potential benefits to pupils of advisory work in schools, providing practical ideas and suggestions for musical interaction to develop specific skills in pupils. Her experience was that:

‘team members, including those with no formal training or experience in music, can be empowered to facilitate music experiences, and to maintain or develop their use of music to meet student goals’. (Rickson 2012, p. 268)

Rickson found that working as a music therapist in an advisory capacity did raise particular professional challenges to the music therapist, who often had to deal with resistance and conflict within staff teams. However, when staff were open to suggestions and prepared to engage in two-way discussion and sharing of ideas, the end result could be constructive and long-lasting in terms of pupil progression. Rickson suggests that music therapists engaging in this type of advisory work need to have a wealth of practical music therapy experience, as well as having developed particular skills to meet the needs of a range of staff in the school context.

Music as Therapy International is a charity which carries out short-term projects in specific geographical areas where they feel that the emotional and social need is most severe. The charity provides music therapy in schools, residential centres and care homes, and aims to

share skills with staff so that musical intervention can be used in a constructive way when the qualified music therapist has left (Music as Therapy International website 2017). This can be a very effective way of spreading musical interaction techniques for facilitating positive change and development in individuals with a range of disabilities and mental health needs.

McFerran and Rickson (2014) discuss literature based on music therapy in schools and suggest the need to move with the current political and pedagogical climate, adjusting music therapy methods to affect the entire musical ethos and culture in schools. The authors discuss the concept of music therapy as part of the overall school community, and moving away from individualised treatment programmes for children based on specific needs. The emphasis on inclusion and teamwork is high-lighted, in addition to the money-saving concepts of music therapy reaching larger numbers of pupils through embarking on large-scale group work projects.

In their book, 'Creating Music Cultures in the Schools' (2014), Rickson and McFerran describe the way in which therapists can carry out a process to establish more therapeutic community music making in schools. Vignettes are presented highlighting the potential for the music therapist to take an advisory role in the school setting. Collaboration with teachers and teaching assistants is described; the therapist generally worked in a school for a short time, setting up sustainable music making which could continue on after the therapist had left. There is a parallel here with the work of Music as Therapy International (2017).

Although the concept of collaboration is similar to my work, it is a different approach to my research where the therapist was based permanently in the school and working in conjunction with the TAs over a prolonged period of time.

## **2.8 Literature on collaboration between music therapist and teaching assistants (TAs) in schools**

There is surprisingly little literature specifically about collaboration between music therapists and TAs in school environments (Strange 2013). The majority of the current literature about collaborative working between therapist and TA focuses on the role of TAs in group music therapy sessions. Strange (2013) writes about his liaison with TAs during group sessions in schools and gives a detailed overview of the approach he uses, which he entitles Triadic Support of Interaction by Improvisation (TSII). This approach centres around the therapist providing musical support for the teaching assistant, who simultaneously works closely with the teenager with PMLD. There is an opportunity for the TA not only to support the client, but also to contribute musically within sessions, providing an expressive outlet for the TA as well as the client. However, the TA does not take the role of client, instead the relationship between TA and client is supported musically.

Strange (2013) cites Schmidt (2004) and Munro (2011) who both wrote their Masters thesis about the role of non-professional assistants in music therapy sessions. Schmidt (2004) discusses the evolving role of the assistant in work with both individual clients and in group sessions. She interviewed music therapists who worked alongside assistants, and many expressed the opinion that it was difficult to work with assistants, and that the music therapy approach had to be modified as a result. Schmidt considered the transference and countertransference implications of having another adult in the room, and felt that the presence of another person created complications in examining the therapeutic relationship with the client. She thought that feelings such as competition and envy could distract from the relationship with the client. The central focus was on the negative aspects of collaborative

working with assistants, rather than on the potential constructive possibilities, although Schmidt concluded her thesis with the statement that:

‘if the music therapist chooses to work with the assistant’s presence as an integral part of the therapy process, this can have the advantage that it may create a very fruitful basis for working through issues that are very real.’ (Schmidt 2004, p.73)

The need for clear communication with assistants working in therapy sessions was highlighted, with collaboration being more successful when the therapist made time to meet with the assistants and clearly define their role in the sessions, whether as passive on-lookers or active participants.

Munro (2011) carried out semi-structured interviews with five music therapists, gaining different perspectives on the role of assistants in music therapy sessions. This resulted in the creation of a comprehensive set of guidelines for training and preparing assistants to work alongside music therapists in sessions.

Working within a psychodynamic framework, Strange (2013) raised the issue of confidentiality, contemplating whether this has an impact on deterring music therapists from working directly alongside TAs or writing about this collaboration. Similarly Schmidt (2004) considers the complication of transference issues, as well as the difficulty of keeping boundaries secure for clients.

Other music therapists have a contrasting perspective on this aspect of confidentiality, working as part of the staff team where information is shared in a constructive way and in a manner that is beneficial for the children. This is similar to Holmes, Oldfield and Polichroniadis (2011) multidisciplinary approach to working with families with children with

complex mental health needs, where information is shared amongst professional members of the team, but kept secure within this setting.

The scarcity of literature written by music therapists working with TAs may partly be due to the complexity of describing the dynamics between child and therapist with the impact of the additional dynamic of the TA being present. Most therapists when writing up casework either focus on the relationship they have with the child, or alternatively the emphasis is on nurturing the relationship between child and carer (Oldfield 2008). In ‘Creative Music Therapy’ (Nordoff and Robbins 1977) there are generally two therapists present, creating an equally complex balance of dynamics, although the aspect of both adults being trained therapists with expertise in interacting musically together with therapeutic objectives in mind, is clearly a very different concept.

Strange, Odell-Miller and Richards (in press) are currently editing a book about ‘Collaboration and Assistance in Music Therapy Practice’, which should address this gap in the literature.

The unique aspect of my research work was in providing the children with weekly music therapy, and then supplementing this with a music session with the TA later in the week. Although, as can be seen in this literature review, other music therapists have shared skills with professionals with whom they work alongside, rarely do the clients receive individual music therapy and musical intervention from TAs within the same week, over a prolonged period of time. The potential for this particular type of intervention was what I hoped to evaluate in my study.

## **2.9 Summary of literature review**

This literature review highlights the fact that music therapy has been effectively used to improve the communicative, expressive and social skills of children with autism, cerebral palsy and profound and multiple learning difficulties over the last fifty years. Research has been sporadic but conclusive in places, in relation to work with children in these diagnostic groups, and larger research projects are currently underway to provide evidence for the effectiveness of meeting the social needs of children with autism spectrum disorder through music therapy intervention.

Collaborative working and skill sharing in health and education settings has been recognised as being important in the development of the music therapy profession and in meeting the needs of clients. Sometimes this has involved the music therapists taking a short-term advisory role within the school community, which is different to the approach taken within this research, where the music therapist and the TA worked with individual children over an extended period of time. An essential element of any type of collaborative working is that communication between professionals is clear and effective.

Although there is a small amount of literature concerning collaborative working with TAs in group music therapy sessions, the potential for TAs to carry out music sessions independently with children, in collaboration with the music therapist who is concurrently working with the individual, has not previously been written about. This small-scale research project should provide some insight into the possibilities of improving the effectiveness of music therapy intervention through collaborative working with TAs. This will contribute to the music therapy literature and provide future research implications.

## **CHAPTER THREE**

### **CONTEXT FOR THE RESEARCH AND MUSIC THERAPY APPROACH**

#### **3.1 Introduction**

In this chapter the context for the research will be presented, as well as the history of music therapy at Castle School and at the local music service, Cambridgeshire Music. A description of my music therapy approach will be given, and an overview of how this approach was modified during the research.

#### **3.2 Context for the research**

My research was carried out at Castle School in Cambridge, as described in 1.2. This is a large special school, which provides for the educational needs of children with a wide range of ages and abilities.

I have been employed by Cambridgeshire Music, the county music service, for the last twenty years, and have worked in a number of special needs and mainstream schools during this time. It is worth noting that prior to 1995 there was no music therapy provision in schools in Cambridgeshire, and the history of music therapy at Cambridgeshire Music between 1995 - 2012 is outlined in Appendix 1 of 'Music Therapy in Schools' (Tomlinson, Nall and Casey 2012). The creation of the music therapy training course at Anglia Ruskin University in 1994 brought many newly qualified music therapists to the area, and collaboration between the course leaders and the Head of the local music service, led to music therapy being introduced into schools in Cambridgeshire. Special needs and mainstream schools were offered the opportunity of 'buying in' music therapy on an hourly basis over the course of the academic year, and therapists employed according to the requested hours.



Initially Cambridgeshire Music employed three music therapists, and gradually expanded to the current level of eight therapists working in schools across the county. In 2002 the Head of Cambridgeshire Music suggested the need for a music therapy co-ordinator for the team, and since this time one of the music therapy team has been responsible for co-ordinating the work in schools and expanding the provision.

It was a lengthy process establishing music therapy in schools and communicating about the effectiveness of the intervention, but music therapy has gradually become increasingly valued and viewed as a resource worth committing funds to, particularly in special schools.

There has been a general trend that schools increase music therapy provision over time as they see the impact of the therapy on the children. However, in recent years as a result of budget cuts, music therapists have had to think more creatively about how they can continue to be employed within this service. This has led to an expansion of the range of client groups with whom we work, and new posts have been created with adults with mental health problems, and with elderly people.

During the last decade the capacity to quantify progress made by children in therapy has become increasingly essential, which has led to the creation of an evaluation tool by the Cambridgeshire Music therapy team, Camtess. This evaluation system is now in its second pilot stage and will be officially launched once this process is complete. This system will provide an effective way of evaluating the progress children make in music therapy over a period of time. Children are assessed in relation to their individual objectives using evaluation forms at the start of therapy, and then at the end of each term. Results produced by members of the music therapy team are then recorded and stored for evaluative purposes.

### **3.3 My music therapy approach**

Over the last twenty years I have worked in a number of mainstream and special school environments, employed by Cambridgeshire Music. During this time I have developed skills to respond to children with a wide range of emotional and developmental needs, and from the age of three up to nineteen years. My approach is variable according to the age and developmental stage of the individual, but I always work with clear objectives for sessions, which I establish through assessment at the start of therapy. The relationship I have with the child is crucial to the success of the therapeutic intervention, and I endeavour to develop a trusting and secure bond over a period of time, with the dynamic changing and evolving during the therapy phase. I will expand in more detail about my music therapy approach later in this section, but will focus first on the practical aspects of my work.

#### **3.3.1 Practical aspects of music therapy sessions**

As I work on the same day as the other music therapist at the school, Susan Greenhalgh, I work in the speech therapy room, which is not used by the speech therapist on that day. There are huge advantages to working on the same day as the other music therapist; Susan and I are able to meet regularly to discuss children and potential referrals, sometimes referring on children who we have worked with individually for the other therapist to work with in a group context. This provides continuity for the child, and opportunities for extending social development with their peer group. In this situation Susan and I are able to discuss a careful transitioning process, introducing the child to the new therapist and liaising about objectives for group sessions.

In addition to this joint working, we also collaborate with the play therapist at the school. Staff often refer pupils to the play therapist at times of severe crisis or stress for the child, particularly when the home environment is challenging or turbulent. The play therapist and

music therapists meet regularly together to discuss children and potential referrals, as well as periodically meeting with members of the senior management team at the school to feed back about the progress of the children and communicate about potential referrals.

The speech therapy room is a spacious and airy room, and I take a trolley load of instruments down to the room at the start of the day, consisting of keyboard, wind-chimes, bongo drum, guitar, flute, recorders, and a range of small accessible percussion instruments.

**Figure 3.3.1 The music therapy setting for the research work at Castle School**



The majority of the music making in my sessions is live and improvised, although I also use a selection of familiar songs and nursery rhymes, as well as predictable ‘Hello’ and ‘Goodbye’ songs. The main musical instruments I play in sessions are the piano, flute and guitar, using the different sound and tonal qualities of these instruments for particular affect (Oldfield, Tomlinson and Loombe 2015). Very occasionally I will play CD’s that children bring to sessions upon request, but this happens more with teenagers and did not occur during the research clinical work.

### **3.3.2 Quality of relationship in music therapy**

Pavlicevic (1997) states that ‘Music therapists, like most expressive arts therapists, love Winnicott’ (Pavlicevic 1997, p.147) and I definitely fall into this category when thinking about the relationship I have with the children I work with, and the playing that I do with them. Pavlicevic discusses the capacity of the therapist to ‘play’, ‘not-play’ and to be ‘good enough’, having the role of ‘holding’ and providing music which can be a ‘transitional phenomenon’. Similarly Levinge (2015) bases her reflections on her work around Winnicottian concepts and how these apply to the process of music therapy.

The relationship I have with the child is central to the potential success of the therapy, and due to the difficulties with communication that most of the children have, this can take time to establish. Winnicott (1971) describes the way in which the mother can enable the baby to explore objects in a shared experience of play, gradually increasing the independence of the child through encouraging them to focus on the ‘transitional objects’ for increased security. Pavlicevic (1997) describes the way in which the music therapist can provide a shared improvised musical space, creating a ‘dynamic intersubjective relationship’ (Pavlicevic 1997, p.151). Much of my music making with the child is improvised, and I spend some of the session reflecting back and ‘attuning’ to the children’s behaviour (Stern 1985, Roberts 1996, Dimitriadis and Smeijsters 2011). I also frequently use pre-composed songs to support language development and to inspire and motivate, as I find that familiar song material can be very comforting and provide both security and stimulation.

Music therapist Oldfield (2006a) believes that the relationship she has with the child has to be a ‘positive’ one in order to facilitate constructive therapeutic change, and that the child is often ‘not aware of the therapeutic nature of my intervention’ (Oldfield 2006a, p.23) as they are generally so involved in stimulating and enjoyable exchanges. I also feel that I am

working towards developing a trusting and secure relationship with the child when I commence work, and aim to use humour and playful exchanges, often attempting to distract the child from the reality that they find social exchanges a challenge. At the same time I encourage the child to express sadness, rage and frustration if that is constructive for them, and provide a medium for self-expression in a contained environment. In Tomlinson 2010 I describe the phasic nature of long-term music therapy work, where initial resistance to engagement can gradually be overcome through drawing the child into shared pleasurable exchanges. This is particularly relevant to work with children on the autism spectrum, who may at first resist shared interaction.

### **3.3.3 Use of song**

During the research project I took a particular approach to my work, which involved focusing on young children from four to eight years of age, with the main aim being to develop the use of vocalising and verbal skills, alongside developing social skills such as use of eye contact, turn-taking and listening. For this type of work, and particularly with the children with autism, I provided a clear structure and predictable framework, providing a sense of security for the child. I have previously written about the effective use of imitation and reflection in music therapy (Tomlinson 2012) and in my current work this seems particularly relevant when vocalising and singing with children, in order to elicit a vocal response from them. In fact the greater the use of my voice in sessions, the more the child seems to vocalise and sing.

The types of songs I use in sessions are simple and repetitive (see appendix 3.3.2 for song examples), enabling the child to easily pick up on the musical and linguistic content. I repeat the same songs from week to week, periodically introducing a new one to extend language development. There is often a strong element of humour and anticipation in the music I use, for example, the 'Turtle' song, which I sing slowly, waiting for the children to contribute

words or vocalisation and then a dramatic climax at the end and a loud 'Pop'! Clapping and laughing at the end of the rendition seems to give the children a sense of the ending of a performance, and can heighten their sense of self-esteem. Haire and Oldfield (2009) describe the use of similar humorous and engaging strategies in their work in child psychiatry, with the elements of 'repetition, imitation, exaggeration and incongruity' taking a central role.

Another strategy I use in enabling the child to successfully transition from the class base to the music therapy room, is to sing a song on route, 'Time for music'. I find that the use of accompanying song structures effectively lengthens the session, as I am engaging with the child from the earliest possible moment when I go to collect them. For those children for whom the transition is stressful, the song can be reassuring, and reminds them of where they are going and what we will be doing next. Some of the children I work with start to sing the song as soon as they see me. Kern (2012) makes similar use of songs for accompanying daily routines, to provide security and predictability for the child.

The approach I took as part of the research project was slightly different to my usual way of working, as I was primarily focusing on the verbal development of the children. This meant that I took a more structured approach to the use of songs in order to facilitate vocal and verbal progression, for example, familiarising children with song material, and then stopping and starting in the middle of songs to encourage the child to participate verbally. As a result of this, a larger proportion of each session was spent engaging the child in interactive singing and vocal exchanges than usual. I was also very aware of promoting free expressive vocalising in order to give the children a sense of confidence in using their voices. Alongside this verbal development approach I continued to encourage the child to improvise freely, so that we were often alternating between singing songs together, and then improvising together. Throughout the project I met regularly with TAs and we shared information about the song

content of sessions, so that there was consistency of material within our joint in-put with the child.

The two-way sharing of information with the TAs throughout the project was very informative and sometimes changed the way in which I approached sessions, for example, one of the TAs said that she only had a few musical instruments available during her sessions to avoid the child becoming over-stimulated and less engaged with her. When I tried this in my sessions the child became much more focused on productive vocal and singing exchanges, and shared interactive play.

#### **3.3.4 Involvement with families**

Although the families of the children I work with do not attend the music therapy sessions, I find the relationship I have with parents or carers is increasingly important, as is my knowledge of the child's home situation. During the research I interviewed the parents of the children participating in the project, and this provided very valuable information about how the child was communicating in the home context, and how much they were using vocal and verbal skills. It caused me to reflect on the fact that previously I have often not met with parents until the therapy is well underway, and how useful it is to have this information right at the start of the work. I have also become increasingly aware of discussing possible objectives for sessions with parents, and liaising about strategies for facilitating positive changes in terms of social skills development.

### **3.4 Summary**

Working with young children in schools over a number of years has led to the development of a flexible and engaging music therapy approach, which meets the needs of individuals on a social, communicative and emotional level. During the research work, children were selected to take part in the project who appeared to have similar communicative needs, where the approach could be modified and tailored to focus on verbal and vocal skills development.

The success of the therapy was dependent on the development of a stable and consistent relationship, where the child was able to explore positive and often humorous singing exchanges, leading to confidence in use of the voice and successful social skills. Improvised play alongside this verbal development approach, allowed the children the space to express themselves freely through musical improvisation.



## **CHAPTER FOUR**

### **RESEARCH METHODOLOGY**

#### **4.1 Introduction**

The mixed methods methodology used for the research will be outlined and presented within the context of music therapy research methodology as a whole.

As indicated in the previous chapter the research questions were as follows:

- i) Can musical interaction and singing develop verbal and vocal skills in young children with special needs?
- ii) If the music therapist collaborates with teaching assistants (TAs) in setting up music sessions for the TA to carry out independently, does this enhance the children's vocal and verbal progression?

Music therapist Bruscia wrote that research should be 'a systematic, self-monitored enquiry which leads to a discovery or new insight, which, when documented or disseminated, contributes to or modifies existing knowledge or practice' (1995a, p.21). I hoped that my research would lead me to a more conclusive understanding of the impact my music therapy work with young children has on the development of their basic vocal and verbal communication skills, and whether teaching assistants (TAs) supporting the children with additional weekly music sessions could enhance this impact.

In order to address my research questions various methodologies were considered and a mixed methods design was chosen. In this chapter I will first look at the quantitative aspect of my research, using single-case designs for assessing the progress each child made in relation to their therapeutic objectives and using time-sampling video analysis taken at the start and

finish of the project. Secondly I will discuss the qualitative elements of the research, which centred around semi-structured interviews carried out with parents and teaching assistants (TAs), working in a naturalistic environment, using a hermeneutic approach to interpreting the data, keeping a research diary throughout the project and the analysis of case notes and reports. Triangulation of this combination of data was achieved through the analysis of the statistical information, and the interpretation of these results in relation to the children's progress from a qualitative perspective.

#### **4.2 Quantitative research in music therapy and how this relates to my study**

Quantitative research which emerged from a 'positivistic' view of the world has long been carried out in a music therapy context. This type of research dates back to the seventeenth century, where mathematical formulae and patterns in nature were central to investigation:

'Then as now, an underlying belief of positivists was that truth exists and that it is possible to discover it or at least come closer to discovering it. Finding or coming closer to the truth, then, is the goal of research conducted within a positivistic framework...'

(Wheeler 2005, p.13)

There are many advantages to quantitative research; it involves the creation of data that can produce statistically significant evidence indicating whether, or not, speculations that the practitioner may have about certain elements of their work are accurate. Taking a scientific approach to research can provide an opportunity for looking more closely at particular events, and produce conclusive results about ways of working. In addition to this, quantitative results from music therapy research can be analysed and interpreted by people outside the field of music therapy, most usefully by professionals who work alongside therapists, and also by

non-musicians who may find the concept of music therapy difficult to understand. This is referred to as ‘outcome research’ (Ansdell and Pavlicevic 2001), where the results from the research are generalisable to other situations, giving the study ‘external validity’. As Ansdell (1995, p.188) writes “‘Is there proof that it works?’ is perhaps inevitably the most difficult of the difficult questions you get asked as a music therapist.’

When working in school environments it is very helpful to be able to refer to music therapy research if management teams are questioning the need for music therapy as a result of funding becoming restricted. Unfortunately music therapy is often the first resource to be cut in schools when funding difficulties arise. In 2012 music therapist Casey wrote that:

‘Recent trends have seen a small decrease in demand in special schools as a result of reduced school budgets, but work to support children with additional needs in mainstream continues to grow.’

(Casey 2012, p.218)

Consequently music therapists are constantly having to adapt their work to meet specific demands from employers, and being able to argue the case for music therapy work being effective. Casey (2012) also discusses the use of ‘robust evaluation tools’ to challenge perceptions that music therapy is an added extra rather than an essential and integral aspect of the child’s curriculum in the school context.

My research project was set up as a result of my own drive to research the effectiveness of my work with young children with special needs and to provide evidence that clear results can be achieved. Quantitative research seems to be the clearest, most acceptable way to prove that music therapy is effective, and for this also to be acknowledged in the scientific community, for example, in medicine. Although much research has previously been carried

out into the development of social skills in children with special needs through music therapy intervention (for example, Oldfield 2006a; Kim, Wigram and Gold 2008; Lim 2010), there has been less research focus on working alongside teaching assistants and how this might enhance progression with the same client group. Strange (2013) raises the issue of the lack of research and literature surrounding the topic of teaching assistants in music therapy. I hoped that my study would be a first step in attempting to address the lack of research in this area.

In selecting my methodology for the research I reflected on existing music therapy research with children with ASD, for example Kim, Wigram and Gold (2008), who carried out a randomised controlled study into the effects of improvisational music therapy on a group of pre-school children with autism. The children's use of eye contact and turn-taking in music therapy sessions was quantified through video analysis, and the results were compared to their behaviour in play sessions. There is a parallel here with my research project in that there is a control group of children who had play therapy rather than music therapy; in the same way, the children I was working with who did not have extra music sessions with the TAs provided a control group. Another aspect of this research which was similar to mine, was that I used video analysis of the children's social skills during sessions to quantify the amount of time each child spent vocalising at the start and end of the project. This study drew my attention to the fact that social skills in children are measurable through video analysis pre- and post-intervention. Similarly, I considered previous research using video analysis to assess the development of social skills during music therapy, for example, Wosch and Wigram (2007) and Plahl (2007).

Geretsegger, Holck and Gold (2012) are currently leading an international randomised controlled trial into the effectiveness of improvisational music therapy in meeting the needs of young children with ASD in relation to social and communicative abilities. This study will additionally consider the implications for session frequency for therapy outcome, so some of

the children will receive therapy several times a week, and some only once. Although this research is on a much larger scale than my own project, there are parallels in that the age range of the children was specified; in this research it was four to six years and eleven months and in my research it was four to eight years. Additionally children were randomly allocated to each treatment method, so in this study the frequency of sessions was altered for each group, and in my project the children were randomly allocated to either just music therapy, or music therapy plus sessions with the TAs.

#### **4.2.1 Single-case designs**

Using single-case designs for my research was particularly relevant with the eight children I was working with, as I wanted to specify objectives for each individual and quantify development in relation to these aims through video analysis. Although I was looking primarily into the development of vocal and verbal skills in the children, I also wanted to measure progress in other areas such as use of eye contact, turn-taking and so on, depending on what was relevant for the individual.

Elefant (2002) used single-case designs in her research looking into the use of songs in music therapy to enhance communication in girls aged five to ten with Rett syndrome. In a similar way to Elefant, in my study I carried out quantitative research in a naturalistic setting, and used research methodology that facilitated the differentiation of individual abilities of the children. Elefant used video analysis techniques which resembled those used in my study transferring analysis data onto sheets and thereby producing graphs for comparative purposes.

Quantitative case study research or single-case designs, is a way of investigating individual casework in depth and responding to particular research questions. Aldridge (1996) argues for the effectiveness of this type of research in music therapy practice:

‘Single case designs are particularly important for the creative arts therapies as they allow for a close analysis of the therapist-patient interaction...there are possibilities for comparing different sets of data throughout a course of treatment such that intra-individual comparisons can be made. Personal change is considered within the patient, not by comparison with a group norm.’

(Aldridge 1996, p.112)

McFerran and Stephenson (2010) used a quantitative approach to music therapy research in a special school context, assessing the benefits of music in therapy for children with severe disabilities, using detailed video analysis. The effectiveness of using music, as opposed to the therapist not using song or musical material during a one-to-one interactive session, was studied. Four children and four therapists took part in the study, and the children and therapists had established relationships in the context of music therapy prior to the study. The children’s communicative behaviour, such as levels of engagement and vocalising, during musical and non-musical interaction were quantified through the video analysis.

The issue of the therapist previously having an established relationship with the children was relevant to my study, in which I had already worked with some but not all of the children before. However, within my study there was no confusion for the child over my identity or role, as I was remaining consistent in the way that I engaged with the children through music. Similarly to McFerran and Stephenson I carried out video analysis, which quantified the children’s progress at the start and finish of the project.

In my study I have used single-case designs as described in the music therapy research above. In some situations single-case designs can refer to more qualitative descriptive work, which I am also including in this study, through incorporating children’s music therapy reports and reflecting on notes from music therapy sessions. As the authors above indicate, there are

ways of being methodical with single-case designs, despite there being a considerable difference between this way of researching and randomised controlled trials where data is collected from a larger number of participants, with no particular focus on qualitative data from the individual.

The majority of my study was looking at individual children and how they progressed in relation to specific objectives. However, when looking at the video analysis data I wanted to compare the results of those just receiving music therapy, and those receiving music therapy plus teaching assistant music sessions. Consequently a decision was made to amalgamate the video analysis scores for each group pre- and post-intervention, so that vocal progress could be quantified and compared.

#### **4.3 Qualitative research in music therapy and how this relates to my study**

Although some qualitative research may be carried out by music therapists with a positivist outlook, at its origin qualitative research covered a broad range of research carried out by non-positivists. Researchers using these methods believe that the interaction between the researcher and the participants should be at the forefront of the study, and that mathematical and statistical interpretations are not always the most valuable form of evidence. This type of research can be traced to the eighteenth century when it was hypothesised that ‘human knowing is dependent upon what goes on inside the observer’. (Hamilton 1994, cited in Wheeler 2005, p.13)

With certain topics and research investigations it is not possible to attain conclusive results through taking a quantitative approach. Music therapy in particular can be complex and dependent on emotional responses and values or beliefs, and in some cases it might be more relevant to use a qualitative approach to provide scope for broader exploration.

‘The origins of qualitative research lie in social science investigations into human behaviour, where the aim was to understand how things are (their qualities) and not only to what extent things are (their quantities).’

Ansdell and Pavlicevic (2001, p.135)

Qualitative research is complex and has many different elements. It incorporates the personal perspective of the researcher, and is also dependent on the context for the work and whether it is in a ‘naturalistic’ setting. A creative open-ended approach can be taken, where research questions may alter as the research proceeds. Qualitative research generally has a descriptive element, where the interpretation and observation of the phenomena are central. It is also idiographic, in that it takes a ‘deep but narrow’ approach to understanding particular situations (Ansdell and Pavlicevic 2001). Qualitative research relies on the researcher taking a reflexive approach in analysing their interpretations and considering the impact of various factors in affecting their perspective on the study.

Ruud (1998) suggested that the interpretation of behaviour within the music therapy context needed to be reflected on using a qualitative approach, as pure scientific analysis misses the essential elements of our work. He describes qualitative research as being holistic, empirical, naturalistic, descriptive and interpretative, with the researcher allowing their spontaneous reactions to behaviours and musical interaction to form an integral part of the research.

#### **4.3.1 Hermeneutic inquiry**

Hermeneutic inquiry relates to the interpretation of texts or music with a fore-understanding of the historical period in which the material was produced. Musicians naturally interpret music considering the intentions of the composer and reflecting on the period in which the composition was written. This has led many music therapists to use a hermeneutic approach



to their research into music therapy, where the experience and perspective of the researcher can facilitate informed interpretations of what is occurring in music therapy sessions, and the researcher can become ‘the primary instrument of the work.’ (Kenny, Jahn-Langenberg and Loewy 2005)

The qualitative aspect of my research came within the bracket of phenomenological and hermeneutic inquiry, where the ‘human experience in the world’ (Forinash and Grocke 2005) was being studied, and my fore-understanding as an experienced music therapist enabled me to interpret the data produced in a relevant way. I have spent twenty years working in mainstream and special schools working with children with similar types of disabilities and helping them to develop more effective social and communication skills, so this perspective enabled me to reflect on how music therapy could meet both the developmental and social needs of this client group.

#### **4.3.2 Interpretative phenomenological analysis**

Interpretative phenomenological analysis (IPA) is a qualitative research method that has recently been applied in the field of psychology and related disciplines (Smith, Flowers and Larkin 2009). This method was used to analyse material from the parent and TA interviews from my study. IPA is centred around the qualitative concepts of phenomenology, hermeneutic inquiry and idiography. In most IPA studies in-depth interviews are carried out and the transcripts of the interviews subjected to detailed analysis, breaking down the material into particular thematic arrangements, and using the researcher’s own personal experience and insight to unravel the content and its meaning. The analysis of the interview material consists of a number of steps, commencing with reading and re-reading the transcripts, then making initial notes, adding descriptive, linguistic and conceptual comments (alongside the text), making interpretations based on the researcher’s personal experience,

developing emergent themes and finally finding connections between the emergent themes. After one interview transcript has been subjected to this process, the researcher can move onto the next case, applying the same steps, but with the added perspective from the initial casework, which will affect his interpretation of the material.

‘It may be an experience which is collaborative, personal, intuitive, difficult, creative, intense, and conceptually demanding. Our own commitment to IPA stems from the fact that it can often be a uniquely interesting and insightful, and rewarding process.’

(Smith, Flowers and Larkin 2009, p.80)

Many music therapists have started to use IPA in their analysis of interview material in research projects, for example, Pool and Odell-Miller (2011) in their research into aggression, creativity and music therapy. Kaenampornpan (2015) also used IPA in her analysis of interview material as part of her study into parent’s experiences of attending music therapy sessions at a Special Education Centre in Thailand. Some music therapists have taken the decision to use alternative forms of thematic analysis (Braun and Clarke 2006) in their research involving semi-structured interviews, for example, Loth (2014) in her research into the use of gamelan music in music therapy. Loth chose this method of analysis as it provided a flexible structure for investigating the material, which yielded ‘a rich and detailed, yet complex, account of the data.’ (Braun and Clarke, 2006, p.78).

Grocke (1999) and Wheeler (2002) set out strategies for analysing semi-structured interview material as part of phenomenological research (cited in Wheeler 2005). They produced systems for interview material analysis which they found beneficial as part of their research investigations. Both of these systems involved analysis of interview transcripts before returning to the participants for further information and input.

In my research I felt that IPA was a relevant and useful system for analysing material from interviews with both teaching assistants and parents, as I wanted to examine a rich source of data, and immerse myself in the content. Subsequently it was important to link together themes which emerged from both types of material. The interview transcriptions provided a wealth of information for me to apply to my work and gave insight in to the children's behaviour in other contexts. IPA being centred around the qualitative elements of phenomenology, hermeneutic inquiry and idiography all related well to my approach to the qualitative aspects of my research.

#### **4.4 Mixed methods research**

The concept of mixed methods research has been debated within the field of music therapy, with diverse opinions being represented in the literature. However, in more recent years there has been an increase in professionals within the Allied Health Professions research field using mixed methods research, and this is now a more widely accepted approach.

Bruscia (1995b) cited in Wheeler (2005, p.14) claimed that it is impossible to combine qualitative and quantitative research methodology:

‘There is one unavoidable dilemma: Notwithstanding the possibility of collecting both quantitative and qualitative data in the same study, and combining the different interests and methodologies, the two philosophical paradigms cannot be integrated or combined. They are mutually exclusive ways of thinking about the world.’ (p.73)

Bruscia, however, did make suggestions as to how to benefit from both approaches, using a particular methodology for studying each type of phenomena, and anchoring research into different paradigms (sometimes combining data and methods, but at the same time separating them into independent paradigms, referred to as triangulation).

Kenny (2004) cited in Wheeler (2005, p.14) suggests that:

‘Triangulating a study or using several methods to investigate the same phenomenon has the advantage of building on strengths and compensating for the weaknesses of various methods.’ (p.32)

McFerran (2010) used this approach in her study into music therapy for bereaved teenagers, and described the process in the following way:

‘Triangulation was then achieved by integrating the qualitative descriptions with the quantitative outcomes using quotes from the original data as illustration for the statistical results.’ (p.554)

Wheeler (2005) suggests that the combination of positivistic and non-positivistic methods can be complicated and potentially problematic, but accepts that using elements of each type of research can be possible, without whole-heartedly accepting the philosophical dimension to each individual approach. Consequently a music therapist could carry out a quantitative research study and use elements of qualitative analysis, and vice versa, and these would be referred to as using qualitative or quantitative techniques rather than ‘true mixed methods research’. (p.15)

In relation to mixed methods approaches, drama therapist Grainger (1999) writes that:

‘Research always involves a trade-off between two kinds of inaccuracy, numerical and experiential, corresponding to the imprecise nature of the fit between the way we think about life and life itself...Taken together, they provide us with a range of ways of increasing our understanding of what can be accurately understood and, perhaps, explained and of appreciating the wonder and fascination of things that evade this kind of understanding.’ (Grainger 1999, p.140)

Many music therapists in recent years have taken a mixed methods research approach, for example, Pool and Odell-Miller (2011) used a mixed methods approach to explore the topic of aggression and creativity in music therapy. The researchers carried out analysis of a case study and interviews of three music therapists, reflecting on ways for clients to constructively process feelings of aggression. Derrington (2012) used mixed methods research to investigate whether music therapy can address the emotional needs of adolescents who are at risk of exclusion, focusing on improving teenagers' self-esteem and reducing anxiety; quantitative data was collected alongside qualitative analysis of interview material.

McFerran, Roberts and O'Grady (2010) also used mixed methods in their research into music therapy provision for bereaved teenagers. They used grounded theory analysis of interviews with sixteen teenagers during group music therapy input, and based interview questions around the young people's experience of participation in a therapy group, and whether the group improved their self-perception and coping abilities.

Oldfield (2006a) similarly used mixed methods research in her study of ten pre-school children with autism spectrum disorder. The project involved the use of single-case designs with quantitative analysis of the children's progression through video analysis, alongside qualitative analysis of parent interview material and music therapy reports.

#### **4.5 Developing the mixed methods methodology for my study**

A mixed methods approach was suitable for my research as I wanted to collect statistical information about the children's progress in music therapy, and in additional music sessions with TAs, through detailed video analysis. As well as producing this quantitative data, the analysis of interview material, case notes, research diary, and music therapy reports using an

interpretative stance provided insight into the effectiveness of my work, and into the usefulness of working alongside TAs.

The aim for my research investigation was to look into the development of vocal and verbal skills in young children aged four to eight years, and to work closely with TAs at the school to see if this facilitated increased development in the children's use of vocalising. During regular meetings with TAs I made suggestions for weekly music sessions that they could carry out with the children, in addition to the music therapy intervention that the children were receiving. Although the main focus for the study was the children's verbal development, I specified social and emotional objectives for each child as I would normally do in the course of music therapy intervention. I worked towards these individual objectives and the video analysis produced data that compared the children's social and verbal interaction pre- and post-intervention. However, the statistical analysis of the video analysis results was purely focused on the vocal and verbal interaction, to see whether the additional TA music sessions had impacted in a positive way on this area of the children's communicative abilities.

The music therapy and TA music sessions were 'naturally occurring' in a large special school environment, and hence the project followed the format of naturalistic inquiry; the children were already established in this setting, so the familiarity of the context was helpful in making them feel secure and able to respond to the music making in a relaxed way. Having music therapy sessions in the school setting is an advantage in terms of the consistency for the children, and the capacity for the therapist to engage with and share information with staff in the environment. There is no additional stress involved for the child in getting to the music therapy room, as might be the case if they were having to travel to an unfamiliar context.

#### **4.5.1 Selection of the participants**

Eight children were selected for the project, who were at a similar linguistic and communicative level. Through discussion with teachers and teaching assistants, I decided that all of these children would benefit from music therapy intervention, indeed some of them had already previously attended music therapy with me at the school (and two of them had attended music therapy with other music therapists before attending the school). Some of these children had been previously referred for music therapy by their class teacher at the school, and others were put forward by their class teacher as suitable candidates for music therapy after I had had discussion with the teacher about the research project. With the children I did not already know, I discussed with the teachers their level of communication and understanding to try and ascertain whether they would be at a parallel developmental level to other children already selected for the project. I also observed the children in the class context.

Four of these children were offered weekly individual music therapy sessions over a 24-week period (control group) and four of the children were offered weekly music therapy as well as a weekly follow-up music session with a teaching assistant (TA). The groups were randomly selected for each of these two types of activities. The treatment period (24 weeks) was determined by the funding period of one academic year. This allowed time at the start of the academic year for the selection of the children and for gaining parental and school permission, as well as carrying out the parent and TA interviews. The treatment sessions commenced in November and finished in June, which allowed the remainder of the academic year for carrying out post-intervention parent and TA interviews.

#### **4.5.2 Selection of the TAs and communication with this group**

Three TAs were initially selected by the teachers depending on their availability during the day and capacity to fit in sessions with the children. This resulted in one TA carrying out sessions with two children, and the other two TAs having one child each to work with.

I liaised with the TAs to share information about the children's progress in music therapy sessions, and to provide them with song material and musical ideas to use in their 15 minute music sessions. A sheet was provided for the TAs with suggested songs, and for them to record the responses of the children during their music sessions (see appendix 4.5.3.4). The discussion with TAs centred around the child's behaviour during music and music therapy sessions, and the musical content of sessions. The TAs generally used the suggested song material alongside their own ideas, for example, one TA was keen to use the microphone in her music sessions, which worked well in giving the child confidence in using their voice. Ultimately it was a free flow of ideas and suggestions between myself and the TAs rather than me taking an instructive role. The TAs were also able to let me know about vocal and verbal developments in the class base, which was very informative and helped shape my approach within the music therapy sessions.

#### **4.5.3 Video recording the sessions and video analysis**

Parent and TA consent was obtained prior to the treatment phase for video recording music therapy and TA sessions. The music therapy and TA sessions were videoed near the start of the 24-week project (session 3) and towards the end (session 22), to give an over-view of the children's engagement and vocal activity in both types of session, pre- and post-intervention. The reason session 3 was selected as the point at which to start the videoing, was because I decided to give the children two sessions as a chance to settle in and to feel comfortable with me at the start of the intervention. Session 22 was selected as the appropriate point towards



the end of the data collection phase, rather than the very last session in week 24, in case of absence or technological problems arising.

The video camera was placed on the piano in order to video the sessions and the children were either oblivious to the camera being there, or noticed it briefly at the start of the session but it generally did not affect or modify their behaviour. The TAs worked in small rooms adjoining the class base, and propped the video camera up on a high shelf in order to record the sessions. Again, the children were not distracted by the camera being in place as the camera was too high up to be clearly visible.

Detailed video analysis was carried out on all the video material using a time sampling method (Oldfield and Adams 1995). The video material was played through, pausing every five seconds and marking on a sheet exactly what the child was doing at that five-second point (see appendix 4.5.3.1 for the chart used). Initially a metronome was used to measure the five-second intervals as described by Oldfield (2006a), but the bleep of the metronome became a distraction, so this was altered to the use of a computer clock counter to measure the time intervals. The video analysis started at the same time for each child, when the “lo” part of “hello” in the therapist and TAs greeting song was sung. Similarly to Oldfield’s research assistant, it was found that each 20 – 25 minute session could be analysed in approximately one to two hours.

The objectives for each child were set out at the start of the project and each type of child’s behaviour represented by a code, for example, V for vocalising or M for music making. The behaviour of the therapist was also analysed and coded, for example, P for playing the piano, or S for singing. In this way the percentage of time that the child spent vocalising, using eye contact, music making, and so on, during the session, was measured at the start and finish of the phase of therapy. The proportion of time the therapist spent singing, playing the piano,

playing the instruments, and so on, was also measured. The following tables show all the codes used for both the children and the therapist and TAs:

**Table 4.5.3.1 Video analysis codes used for the children**

Si	Selects instrument
S	Sings
W	Uses words
M	Music making
Vr	Vocalises in response to adult
R	Resists interaction or negative behaviour
Ei	Explores instruments
L	Laughs
Sm	Smiles
E	Engages
C	Cries
Vs	Vocalises spontaneously
Ec	Eye contact

**Table 4.5.3.2 Video analysis codes used for the therapist and TAs**

Js	Jo sings
Jt	Jo talks
Jp	Jo plays piano
Jg	Jo plays guitar
Jo	Jo plays percussion
Jsh	Jo supports hand
Jv	Jo vocalises
Tas	TA sings
Tap	TA plays percussion
Tat	TA talks

Most of the video analysis codes for the children are self-explanatory. However, ‘engaged’(E), ‘exploring instrument’(Ei) and ‘resists/negative’(R) need to be defined. The code ‘E’ was used when the child was not actively music making but was engaged in some direct way with the adult (therapist or TA), for example, waiting patiently for the adult to choose an instrument or showing a keen interest in what they were playing. Use of the code ‘Ei’ had a negative implication as it was when the child was preoccupied and was fiddling with an instrument and ignoring any social contact with the adult. The code ‘R’ was used when the child was either resisting interaction with the adult, or being actively attention-seeking or destructive towards the instruments or the adult. This code was not used if the child was expressing themselves in an angry way on a musical instrument, as this would be considered constructive and the code ‘M’ would be used for ‘music making’. Some children had more codes than others and with these children it was necessary to go through the

material several times to ensure the data was accurately collected. The children's individual video analysis codes and scores can be found in appendix 4.5.3.2. A completed video analysis form can be found in appendix 4.5.3.3.

Once all the video material had been analysed, the codes for each child were counted and percentages calculated for different types of behaviour during the session. The calculation of percentages was necessary as the length of each session was variable. Graphs and tables were used to illustrate the results. The information about the development of the child's participation in sessions and particularly their use of vocalising and singing was measurable at the start and end of the project. Pie charts also provided information about the extent to which the therapist and teaching assistants played musical instruments during sessions and the quantity of time spent singing or talking. The results of this analysis can be found in sections 5.6 and 5.7

The video analysis percentages obtained gave an over-view of the child's progress in their capacity to use their voices and interact socially pre- and post-intervention. The video analysis was checked for consistency by my supervisor. My supervisor took a random section of video and analysed it in a similar way. The first time that this happened the accuracy percentage was not high enough (under 83% accuracy), so all of the video analysis was repeated and the second time the figures were compared, the results were accurate.

In terms of selecting the research methodology, video analysis seemed a useful way to assess whether the children were communicating more effectively using their voices after a period of music therapy and TA intervention. The time-consuming nature of this process meant that the video analysis became a major part of the study. After collating the vocal score results, a statistician provided assistance with the statistical analysis. It is very common for music therapists to receive help from statisticians during research investigations (Oldfield 2006a,

Derrington 2012), particularly when there are a greater number of participants in the study. My investigation was on a small scale, and for this reason the statistician used bootstrapping techniques to assess the probability of creating particular results with a larger number of participants. Bootstrapping is a technique used by statisticians that can also be termed resampling. The method used involves a simple procedure, but repeated numerous times with the aid of computer software.

The TAs and I kept a written record of the children's behaviours in note form throughout the data collection phase, providing an additional source of information about progress. A completed TA form can be found in appendix 4.5.3.4.

Throughout the research I had a dual role of researcher and clinician and although this could be interpreted as creating a biased perspective, there is a history of music therapists carrying out research in this way, for example, Oldfield (2006a) and Kaenampornpan (2015). As I was very immersed in the individual objectives for each child and their progress during the research as is my usual approach during clinical work, this was my primary focus rather than creating particular quantitative data. I also valued the learning experience of carrying out the video analysis and interviews myself, and this developed and expanded my skills as a clinician.

#### **4.5.4 Semi-structured interviews and interview scoring**

As discussed in 4.3.2, many music therapists have carried out semi-structured interviews and used interview analysis techniques as part of the qualitative research process. Pre- and post-intervention I interviewed seven of the eight parents of the children (one parent declined to participate) and all of the TAs. The questions I used for the semi-structured interviews were mostly based around obtaining information about the way in which the child was using their voice at home or in school (see appendices 4.5.4.1 and 4.5.4.2).

I used a semi-structured interview process as described by Ansdell and Pavlicevic (2001):

‘the researcher-interviewer guides the interview and focuses the area of conversation using prepared questions, but allows the conversation to flow freely. The interviewer may prompt or ask further questions. The conversation is an equal dialogue.’

(Ansdell and Pavlicevic 2001, p.190)

I tape recorded the interviews and the recordings produced were transcribed word-by-word, rather than by the ‘note-and-quote’ method (Ansdell and Pavlicevic 2001). Although I left out some of the ‘Ums’ and ‘Ers’ which I felt did not add to my knowledge of the information which the parents and TAs were contributing, I wanted to keep almost the full content of what was said, as it gave a very fascinating overview of the children’s use of vocalising and verbal communication at home and in the class context at that point. I started and stopped the tapes manually in order to write down what was said, and rewound the tape frequently to thoroughly check that the written material was accurate. I then reflected on the material using Interpretative Phenomenological Analysis (Smith, Flowers and Larkin 2009) as described in 4.3.2.

The semi-structured questionnaires used for the interviews had scores which the interviewer filled in as the interviews took place. For example, in the pre-intervention questionnaires (appendix 4.5.4.1) the first question asked was “How much vocalising does your child use at home?” and the answer could have been “A lot, quite a lot, a small amount, hardly any, none”. “A lot” would have scored 5 points, “Quite a lot” 4 points, “A small amount” 3 points, “Hardly any” 2 points and “None or never” 1 point. This allowed me to assess whether there had been an increase in vocalising at home pre- and post-intervention. A similar scoring system was used for each of the quantifiable questions asked (questions 1 – 5).

#### **4.5.5 Research diary**

Throughout the project I kept a research diary to record my own thoughts and reflections about the development of the project, and the challenges that arose on a logistical level. This was a useful process as it allowed me to assess the effectiveness of the methodology and to consider whether I would carry out a research project in the same way again. It also provided a way of recording the research process from my perspective, and these more subjective opinions were useful to look at in the context of the other results. I will reflect more on this in Chapter Six.

#### **4.5.6 Annual review reports**

In the school setting the music therapist writes annual review reports in order to monitor progression in relation to therapeutic objectives. These reports provided useful data to compare from a qualitative perspective in relation to the quantitative data produced from the video analysis at the end of the project. The reports collated for the research were written at the end of the academic year to summarise the children's progress, or to contribute to the annual review process. Information from these reports is included alongside the children's video analysis graphs in Chapter Five, and full reports can be found in appendices 5.1. Material from the reports supplemented evidence of the progress of the children during the intervention, as they were written soon after the research sessions had been completed. Together with the clinical notes written about the children throughout treatment, and the notes collated by the TAs, a qualitative overview of the progression of the individual child has been created. This qualitative evidence sits constructively alongside the quantitative video analysis results to establish a comparison of progress between the children who attended the additional TA sessions, and those who attended music therapy alone.

#### **4.5.7 Ethical considerations**

The Head Teacher at the school gave permission for the study to take place and due ethical procedures were followed from the outset. All relevant forms and samples of ethics paperwork are included in the appendices. The children were selected in relation to their communication needs and whether I considered that they would benefit from music therapy intervention. The parents of the children gave written permission for the children to take part in the study; they were provided with an information sheet about the project and also the option of removing the children from the project at any point (see appendix 4.5.7.1). The parents also gave written permission for the child to be video recorded during sessions. I continuously checked that the children seemed happy to come to the music therapy sessions, and would not have continued to work with them if they had seemed distressed about attending. The TAs were also provided with an information sheet about the project and they all completed a form to give their consent to participate (see appendix 4.5.7.2). The Head Teacher at the school gave written permission for the study to take place (see appendix 4.5.7.3).

The initial research project was funded by ‘The Music Therapy Charity’ and ‘Eastern Counties Educational Trust’ for the duration of the clinical work. At the end of this phase I then secured funding from ‘The Music Therapy Charity’ to write up my research as a PhD thesis at Anglia Ruskin University. At this point I went through new ethical procedures to check that the parents and TAs gave permission for me to use the data that I had collected during the project, to use in the thesis. I wrote new letters to all the parents, TAs and Head Teacher at the school and obtained their permission to go ahead with using the data in the thesis (see appendix 4.5.7.4). Once I was nearing completion of the thesis I decided to include video material and photos to illustrate the text, so I then wrote to parents and TAs again to obtain their permission to use this additional material (see appendix 4.5.7.5).



The whole process was overseen and approved by the Anglia Ruskin University Ethics Panel within the Faculty of Arts Law and Social Sciences (see appendix 4.5.7.6 for completed ethics form).

## **CHAPTER FIVE**

### **KEY FINDINGS FROM THE QUANTITATIVE DATA**

#### **5.1 Introduction**

Firstly, graphs demonstrating quantitative video analysis results for each individual child will be presented, which reflect the children's social behaviours during music therapy sessions and directly relate to their music therapy objectives. As this is a mixed methods study the graphs will be illustrated with information from the children's music therapy reports; (full music therapy reports can be found in appendices 5.1) this will allow a comparison between the quantitative data and what was observable in music therapy sessions by the therapist. Photos and video material are included for those children who received both music therapy and TA music sessions, as this provides an insight into the children's behaviour in both contexts. The data from the children who received both music therapy and TA sessions is presented first, followed by the results of the children who just received music therapy. Hence, results for Ashraf, Charlie, Elliot and Remiel are presented first, as they all received music therapy plus TA sessions, and Bella, Kieran, Mark and Paul are presented after this, who constituted the group who received only music therapy.

Secondly, the statistical analysis of the data from the video results will be presented, which combines the vocal scores from each group of individuals (those children that received music therapy alone, and those that received both music therapy and TA sessions). Although the children's individual graphs indicate multiple behaviours, the statistical analysis is based on purely the vocal and verbal contributions of each child in music therapy sessions, as this was the main focus for the study.

## **5.2 Video analysis results for each child**

The video analysis graphs in the following section indicate the percentage proportion of time during the session spent carrying out each of the behaviours, and relate to music therapy objectives for each individual.

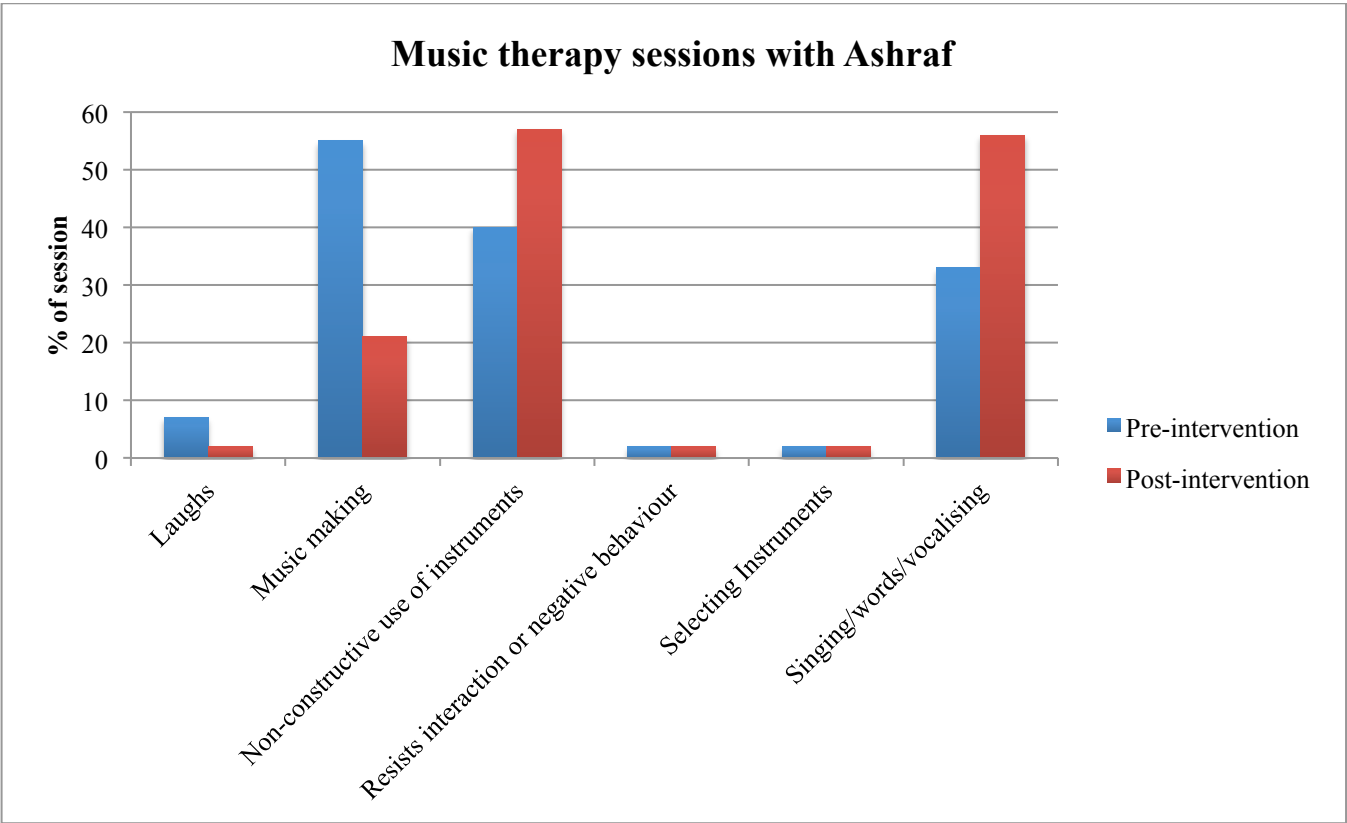
### **5.2.1 Video analysis results and developments for Ashraf in music therapy and TA sessions**

Ashraf had a diagnosis of autism spectrum disorder (ASD) and was seven years old. He had originally been referred for music therapy by his class teacher, who felt that music therapy might extend his social skills. It had been noted in class that Ashraf responded well to music and could pick up words more quickly when supported by a musical framework. Ashraf often had one-to-one support in the class context as he could be highly excitable and once over-stimulated had a tendency to throw things across the room. He enjoyed interaction with adults and responded well to individual attention. Ashraf had the capacity to express himself effectively but prior to the intervention his verbal communication was fairly limited. He communicated through a combination of picture boards and verbal interaction. My aims for Ashraf's sessions were to encourage co-operative behaviour, extend his verbal and social skills, and develop the length of time that he could remain focused on shared exchanges.

Figure 5.2.1.1 Ashraf in a music therapy session



Table 5.2.1 Video analysis graph for Ashraf



Ashraf's use of singing, words and vocalising went up from 33% of the session pre-intervention to 56% of the session post-intervention. Ashraf made enormous progress in his capacity to sing and communicate verbally in his sessions during the research period, and in his ability to concentrate on this activity for prolonged periods of time. Ashraf's active music making decreased from 55% to 21% of the session, as his focus became centred around singing activities. As a consequence of this, Ashraf's preoccupation with independently exploring the musical instruments went up from 40% to 57%, as he used this behaviour to regulate his energy levels, calming himself whilst he engaged in singing exchanges, which he found very stimulating.

It can be seen from the graph that there was no change in Ashraf's behaviour regarding negative or attention-seeking behaviours, and that he had a low score on this type of behaviour both at the start and finish of the project. This demonstrates the fact that in other situations Ashraf was often exhibiting negative behaviours, hence the reason for me including this as one of my objectives for his sessions. However, in the context of music therapy Ashraf was generally so focused and engaged with the music making and singing that this re-directed his excitable and attention-seeking energies into shared play.

Ashraf's music therapy report (appendix 5.1.1) concluded that he had made excellent progress in his language development during the course of the project, and that he had maintained an enthusiastic and engaged response to the music making and shared singing exchanges. His focus on singing and verbal interaction had increased, and he had also developed the length of time that he could concentrate on playing exchanges on the drum. Ashraf's focus during sessions remained variable according to his mood, so that when he was in a lively mood he could become preoccupied with fiddling with the instruments, and occasionally trying to throw them across the room. It was noted in his report that Ashraf had

become much more consistent in his word use in the context of singing activities and was sometimes almost able to sing the whole song independently.

### **TA music intervention for Ashraf**

Ashraf was one of the children randomly selected to have additional Teaching Assistant support, and this impacted in a very positive way on his capacity to engage and explore his voice in a communicative and musical way. Dean (TA) who worked with Ashraf sang consistent songs which reinforced the singing interaction that Ashraf and I were carrying out in his music therapy sessions, as well as exploring free instrumental exploration together. Dean felt that Ashraf “was vocal before. But now he’s even more vocal than when we first started” (TA interview, p.1, line 34) and that his sessions with Ashraf had supported his verbal development.

**Figure 5.2.1.2 Ashraf in a TA music session**



**Video extract 1** demonstrates Ashraf’s capacity to sit and listen to the ‘Hello song’, and to contribute individual words within the song structure. Ashraf shows his enjoyment of the

song through making sustained eye contact, smiling and laughing. His confidence in contributing verbally within the song was very much improved post-intervention.

Although there was an increase in Ashraf's exploration of the musical instruments (which I perceived as negative as it meant that he was preoccupied with this solitary activity), he was still capable of being engaged with me in singing interaction at the same time. This 'fiddling' activity actually often enabled Ashraf to relax and engage with singing, as the direct interaction and eye contact with me could at times be over-stimulating and anxiety-provoking for him.

**Video extract 2** provides an example of Ashraf's ability to be engaged in singing exchanges, at the same time as focusing on his own exploration of the drum beaters, which enables him to relax and continue to engage with me without becoming over-stimulated by the exchange. When Ashraf did become over-excited, his behaviour could deteriorate into throwing instruments and becoming destructive, so I was aware of allowing him to calm himself through this exploratory activity.

Although I found that there was not an enormous increase in Ashraf's use of spoken words in contrast with the increase in singing involvement, it is likely that increased singing will lead to greater confidence in using spoken words over a longer period of time.

The second part of **video extract 2** shows Ashraf enjoying a pleasurable interactive exchange during a music therapy session; Ashraf again explores the windchimes which takes a portion of his focus, but his remaining energy is directed into listening to my flute playing and observing my movements, then imitating these physically and vocally. Ashraf is able to copy the pitch of my flute playing and has a good awareness of musical phrases. This interaction built on Ashraf's capacity to listen, take turns and respond, all contributing positively to his social development.

**Video extract 3** shows Dean carrying out a music session with Ashraf, using his picture board so that Ashraf can select songs, and then singing and playing together. Ashraf's behavior replicates his way of responding in music therapy sessions, in that he is calmed by playing the xylophone and can then engage confidently with singing exchanges with Dean. This interaction reinforced the verbal development concepts that I was aiming to establish in our music therapy sessions.

### **5.2.2 Video analysis results and developments for Charlie in music therapy and TA sessions**

Charlie had a diagnosis of autism spectrum disorder and global developmental delay and was seven years old. He was referred for music therapy by his class teacher and took part in group sessions with a music therapy student for two months prior to the research project. The student noted that Charlie enjoyed interacting through music and exploring a range of vocal sounds. Charlie's social difficulties were immediately very apparent, with his tendency to play in an isolated and repetitive manner. Although he was able to an extent to express himself vocally, his verbal skills had remained very static over a prolonged period of time. This meant that he experienced frustration through his inability to communicate effectively with those around him. My aims for Charlie's sessions centred around the development of basic social skills, such as listening and turn-taking, as well as encouraging him to extend his vocal abilities.



Figure 5.2.2.1 Charlie in a music therapy session

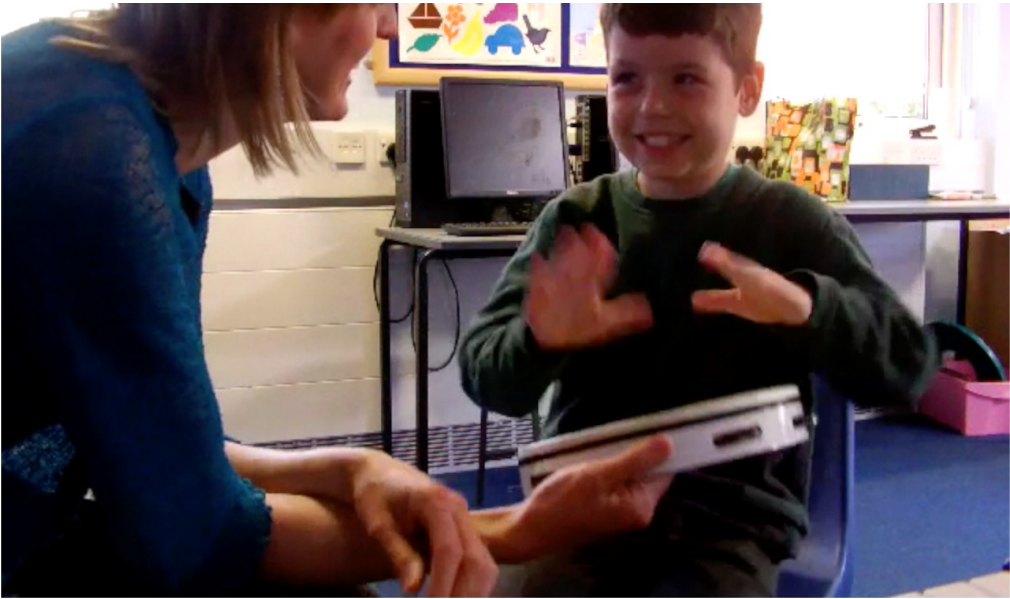
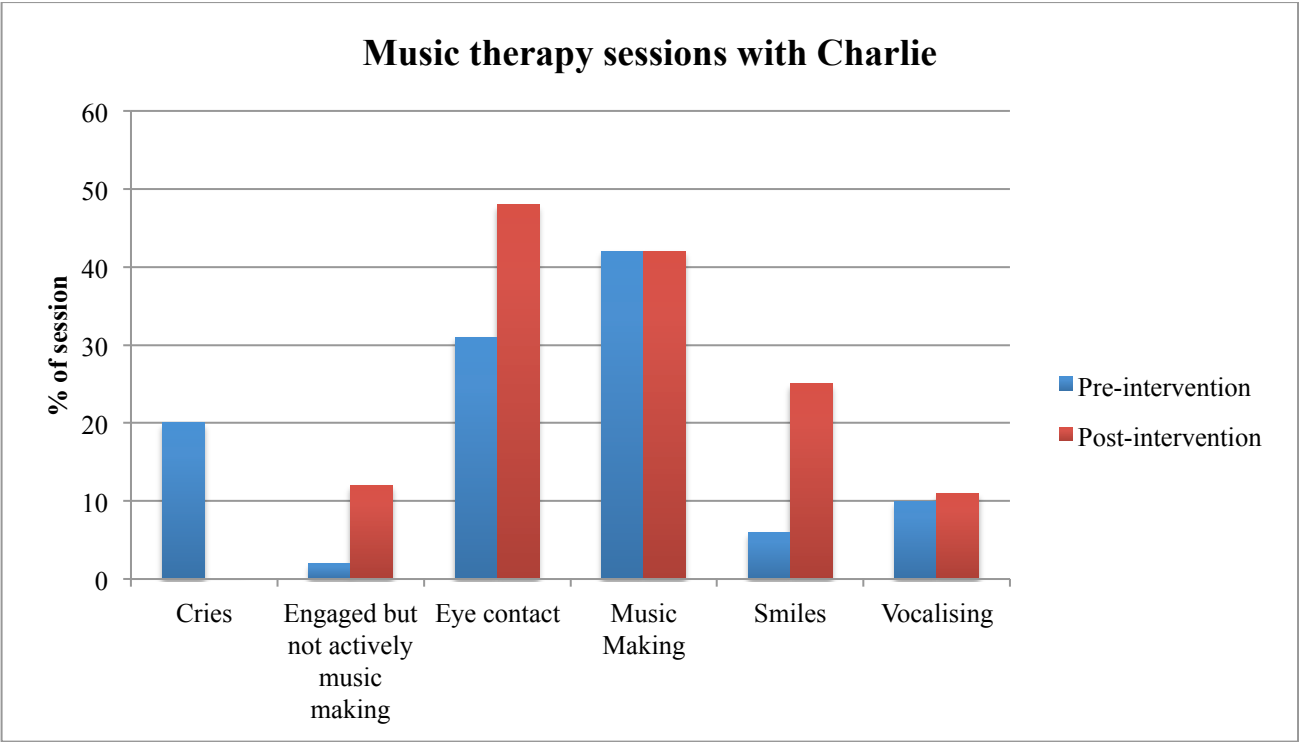


Table 5.2.2 Video analysis graph for Charlie



Charlie’s vocal scores went up slightly from 10% pre-intervention to 11% post-intervention. The more noticeable increases were in his use of eye contact (31% to 48%), smiling (6% to

25%) and his general levels of engagement with the therapist (2% to 12%). What is not clear from the analysis results is that the quality of the vocalising changed, from more distressed sounds at the start of the intervention, to more relaxed, spontaneous and often humorous sounds at the end. The crying that Charlie did in early sessions as he adjusted to the new routine and environment gradually decreased and had completely disappeared by the end of the phase of therapy.

In Charlie's music therapy report (appendix 5.1.3) it was noted that Charlie had initially taken some time to settle into the routine of attending music therapy and had been distressed at the start of sessions on several occasions. Once Charlie had adjusted to this routine of attending music therapy at the start of the day, he had been responsive to music and particularly to familiar nursery rhymes. Charlie increasingly used his voice in an expressive and spontaneous way during the sessions, and became more explorative in his range of sounds. He also became more confident in using his voice in a communicative way.

Charlie enjoyed engaging in expressive rhythmical play, and was able to direct some of his anxious energy, as well as excitable feelings, into shared sustained play on the guitar and piano. This provided him with an effective expressive outlet during the course of the therapy.

**Video extract 4** shows Charlie in a music therapy session, engaging in fun singing exchanges. His use of eye contact and facial responses is very animated, and he focuses really well on listening and responding to the song. Although Charlie is not able to join in with actual words to the song, this type of exchange builds on his social skills, and encourages him to sustain interactive contact. Charlie has a natural feeling for rhythm and the flow of the song 'Yellow Submarine' motivates him to contribute musically on the drum. His sense of humour and capacity to connect with others on this level is clear from the way he engages, and within this context he can vocalise freely and expressively. The music therapy

environment gave him the opportunity to explore the use of his voice in a contained space, as well as providing an expressive outlet through interactive music making.

### **TA music intervention for Charlie**

Charlie received the additional TA sessions, also with Dean (TA), who felt that Charlie had become increasingly co-operative and engaged over the course of the research period. Dean had a positive relationship with Charlie, who seemed to appreciate the individual attention that he received from Dean during the music sessions. Although Dean did not have musical abilities he was able to engage Charlie in constructive interaction using the framework of song material.

**Figure 5.2.2.2 Charlie in a TA music session**



**Video extract 5** shows Charlie participating in a music session with Dean, who uses the picture board to allow Charlie to select songs. Dean uses the concept of humour to sustain Charlie's attention during the 'Row your boat' song, building up to the end of the song and tickling action. The rhythmical rocking action also engages Charlie further. Charlie makes excellent eye contact and there is some anticipation and intensity to the exchange, which

enhances Charlie's concentration. These additional music sessions contributed to the development of Charlie's social skills, through extending his capacity to listen, engage and explore spontaneous vocalising.

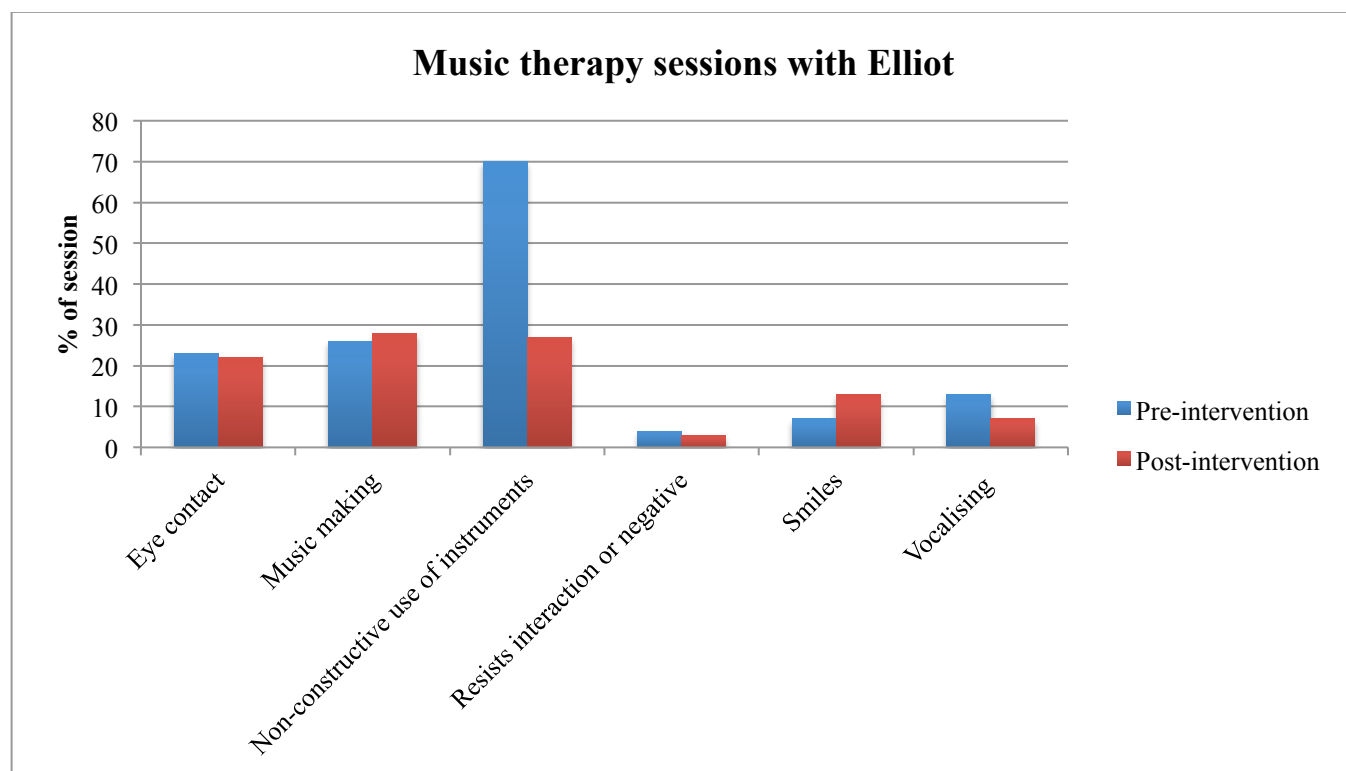
### **5.2.3 Video analysis results and developments for Elliot in music therapy and TA sessions**

Elliot had a diagnosis of autism spectrum disorder and was six years old. He was originally referred for music therapy by his class teacher to develop his interactive and communicative skills. I worked with Elliot in a small music therapy group prior to the research project commencing. Elliot had severe social difficulties relating to his autism, and felt the need to control interactive exchanges. He had the capacity to speak but was very selective in using his voice to communicate, although when happy, excited or sad, he would spontaneously vocalise to express his emotions. My aims for Elliot's music therapy sessions were to encourage him to engage in a flexible way, and to extend his use of vocal and verbal expression.

**Figure 5.2.3.1 Elliot in a music therapy session**



**Table 5.2.3 Video analysis graph for Elliot**



The video analysis results from Elliot's sessions were mixed. His vocalising reduced from 13% to 7%, but his eye contact increased from 7% to 13% and his music making increased a little, from 26% to 28%. Disappointingly Elliot was very unwell and was admitted to hospital for two weeks just before his session was recorded, in week 22 of the project. The result of this was that we had had a break of three weeks just before I recorded the session, so he might have been more engaged with vocalising had we not had this break. Despite this there was still an increase in music making and smiling, and his repetitive exploration of the musical instruments which had been a barrier to interactive play, decreased from 70% to 27%.

Elliot's music therapy report (appendix 5.1.4) described the way in which Elliot had increased his appreciation of humorous interactive games and exchanges, often interspersing these with spontaneous bursts of vocalising. Elliot's use of his voice could be inconsistent

and there was a general reluctance to use words in a communicative way, despite his ability to speak. Periodically though Elliot would come out with words when immersed in an activity or exchange.

Elliot loved to explore a range of musical instruments, but it was noted that he focused better on shared exchanges when there were fewer musical instruments in the room (this had initially been suggested by Joy (TA)). Consequently fewer musical instruments were made freely available to him, and it was then possible to engage him in periods of shared focused play, for example, the therapist holding the recorder for him to play. This gave Elliot the sense of creating a sound using his mouth, and the therapist could then respond vocally, developing the turn-taking exchange.

**Video extract 6** shows two short excerpts from Elliot's music therapy sessions. Firstly Elliot and I share in explorative vocal exchanges whilst exploring the drum. I imitate Elliot's vocal contributions, and try to engage him in reciprocal exchanges. Despite Elliot's need to control the exchange and explore the drum independently, there are brief moments of connection and vocal interaction, where Elliot recognises that I am imitating his vocal sounds and movements. This encourages Elliot to make eye contact and remain focused on the exchange.

The second excerpt demonstrates Elliot's capacity to engage musically, playing the xylophone whilst I accompany on the piano. Elliot enjoys playing glissandi up and down the xylophone which I imitate. Although Elliot's preference is always to explore the musical instruments independently, the musical imitation gives him a sense that he is engaging in a shared activity, and that his sounds are reflected back musically.

### **TA music intervention for Elliot**

Elliot attended singing sessions with Joy (TA), and they had a very positive relationship throughout the phase, which supported Elliot in his vocal and communicative development. Joy took a creative and humorous approach to singing and music making, and also had a good sense of musicality, with the ability to play the recorder. This enhanced her sessions with Elliot and meant that she was able to support him musically.

**Figure 5.2.3.2 Elliot in a TA music session**



**Video extract 7** shows Joy carrying out a music session with Elliot, using a range of vocal pitches to encourage Elliot to focus successfully. It is clear that Elliot feels very secure within the structure of the session and enjoys initially listening to the ‘Hello’ song. Elliot then contributes vocally which is reflected back by Joy, who additionally makes physical clapping contact with Elliot to keep him focused on the interaction. Joy keeps the musical instruments out of reach until the ‘Hello’ song is complete, and this leads to Elliot’s interest being sustained while she brings them out. Joy simultaneously encourages Elliot with his vocalising



whilst getting the drum, and they then engage in shared drumming, enhancing Elliot's capacity to listen and take turns.

#### **5.2.4 Video analysis results and developments for Remiel in music therapy and TA sessions**

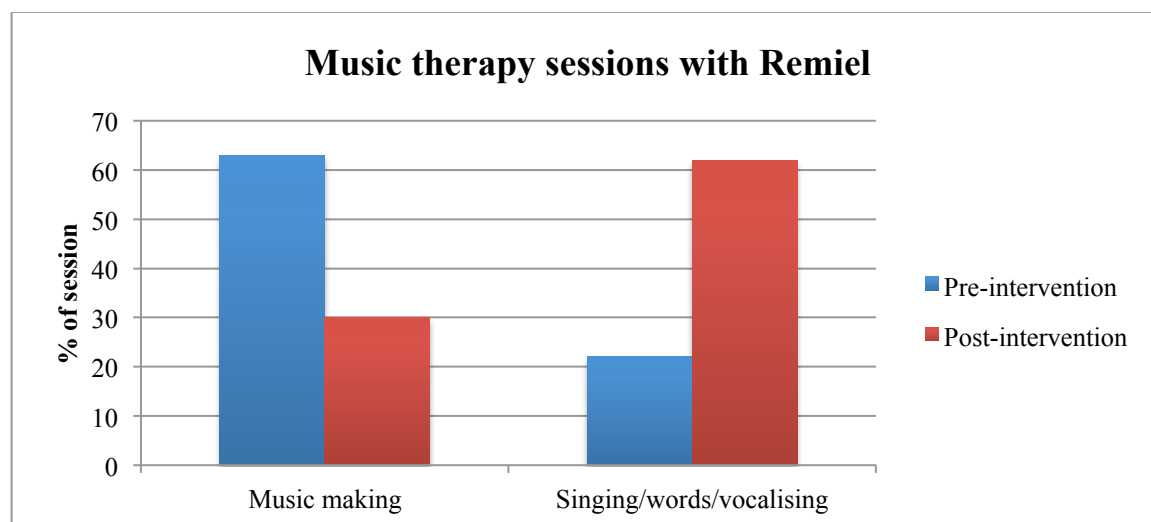
Remiel had a diagnosis of autism spectrum disorder and was five years old. He was referred for music therapy by his class teacher in order to develop his social and communication skills. Remiel initially seemed less socially defensive than the other children with autism in the research group, but his social difficulties related more to the use of his voice. He was capable of interacting verbally, but was extremely selective in the use of his voice, and was almost completely mute in the class context. My aims for Remiel's music therapy sessions were to encourage him to explore his voice and to develop his confidence in interacting verbally, as well as providing opportunities for choice-making and independence.

**Figure 5.2.4.1 Remiel in a music therapy session**





**Table 5.2.4 Video analysis graph for Remiel**



Remiel made exceptional progress in the use of his voice in music therapy sessions, as is reflected by the video analysis chart which demonstrates that his singing and verbal interaction increased from 22% to 62%. His interest in active music making decreased (63% to 30%) as his desire to sing increased. His use of words in direct communication with the therapist also increased, so that by the end of the phase of therapy he was able to consistently respond to questions.

Remiel made excellent progress during the course of his music therapy sessions, as recorded in his music therapy report (appendix 5.1.8). Remiel was naturally an anxious child who preferred to wait for an adult to assist him in selecting instruments to play. He gradually became more confident about expressing a preference for particular instruments. Although there was some anxiety to Remiel's social behaviour, he naturally made eye contact, smiled and focused well on social exchanges, so the emphasis for the music therapy objectives with Remiel was on the music making and the vocal contributions. The most noticeable development was in the use of Remiel's voice, and eventually the singing really took over the majority of the sessions, with his playing consequently diminishing as he was so focused on the singing exchanges.

**Video extract 8** shows Remiel at the start of his music therapy in-put, with the therapist singing and encouraging him to replicate words using exaggerated vocal sounds. Remiel is just starting to imitate mouth positions in preparation for forming words, and making quiet vocal sounds. He is completely focused on the humorous singing exchange and starting to build confidence in producing sounds.

**Video extract 9** shows Remiel two months later involved in similar singing interaction. At this point, the length of his singing phrases has extended and he is becoming much more confident about contributing sung words. He is also more controlled in his approach to strumming on the guitar.

### **TA music intervention for Remiel**

The additional TA sessions that Remiel attended with Nina (TA) very much contributed to the progress that Remiel made in using his voice confidently during the intervention. Remiel had a very secure attachment to Nina, who took a directive approach to her music making and singing with Remiel. He responded extremely well to this approach, and became increasingly confident about exploring his voice in a creative way, as well as contributing words within songs, and eventually singing whole songs back to Nina. Nina was able to support Remiel very successfully through song frameworks and repetition of familiar song material, and she also used a microphone to creatively support Remiel in his vocal exploration.

#### 5.2.4.2 Remiel in a TA music session

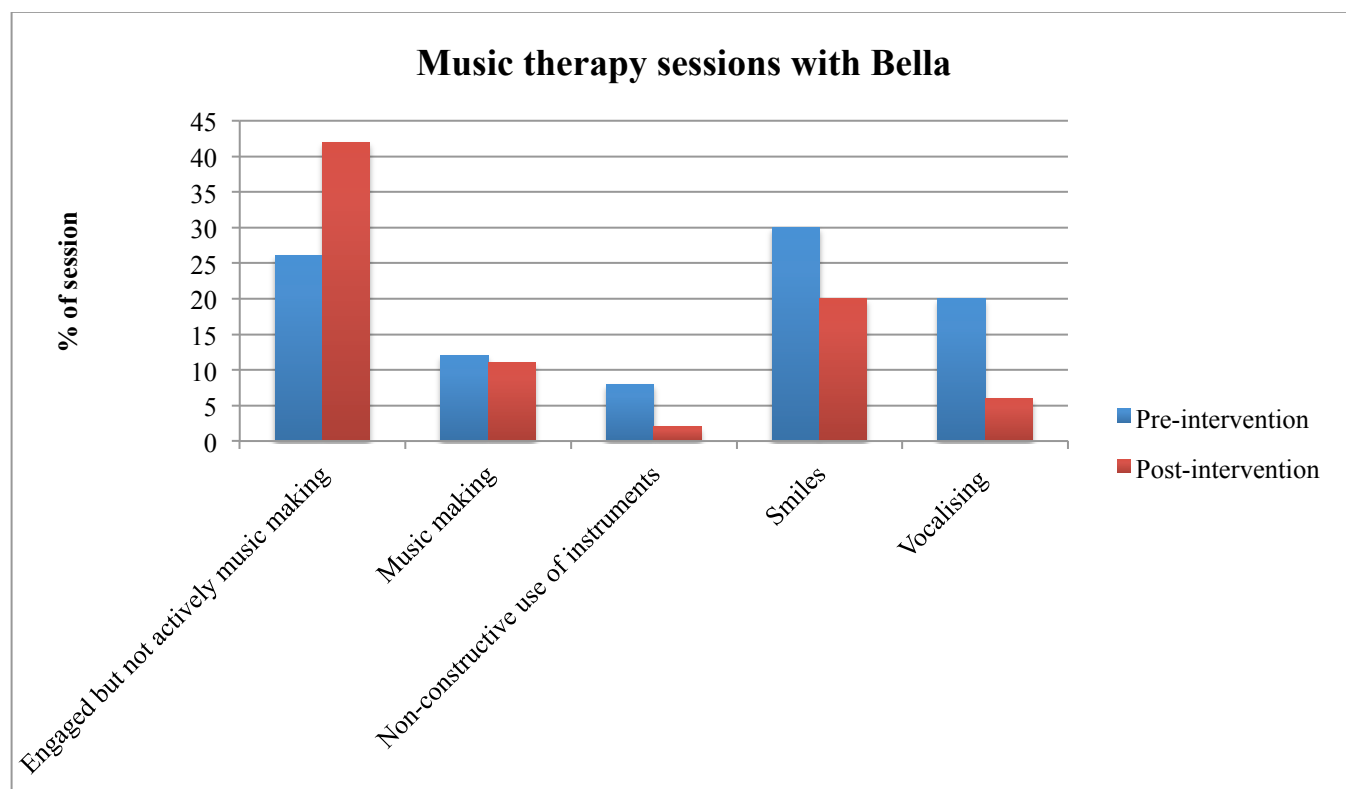


**Video extract 10** shows Remiel in his music session with TA Nina. Nina gives Remiel clear directions and he is able to choose an instrument, and then sing along within the framework of Nina's singing. Nina uses conducting as an approach to encouraging Remiel to sing along to the song, and Remiel quietly sings complete phrases.

#### 5.2.5 Video analysis results and developments for Bella in music therapy

Bella had a diagnosis of global developmental delay and epilepsy and was five years old. She had previously attended music therapy sessions with a music therapist at a child development centre. Bella's mother had also attended these sessions, and Bella both enjoyed and made good progress in terms of communication and social skills during this phase of therapy. I liaised with Bella's previous music therapist about her music therapy following a referral by Bella's class teacher, and Bella was consequently selected to participate in the research project, as it was felt that she could continue to develop her social skills through musical interaction and that music making could provide an expressive outlet.

**Table 5.2.5 Video analysis graph for Bella**



Bella's vocal scores reduced from 20% pre-intervention to 6% post-intervention, however, her levels of engagement with the therapist increased from 26% to 42%, so although she was reluctant to use her voice on this occasion, Bella was very involved in the interaction. The results shown here reflect Bella's changeable and inconsistent communication patterns. However, the chart demonstrates the fact that Bella's levels of engagement with the therapist increased during the music therapy intervention, even if her vocalising was changeable from week to week.

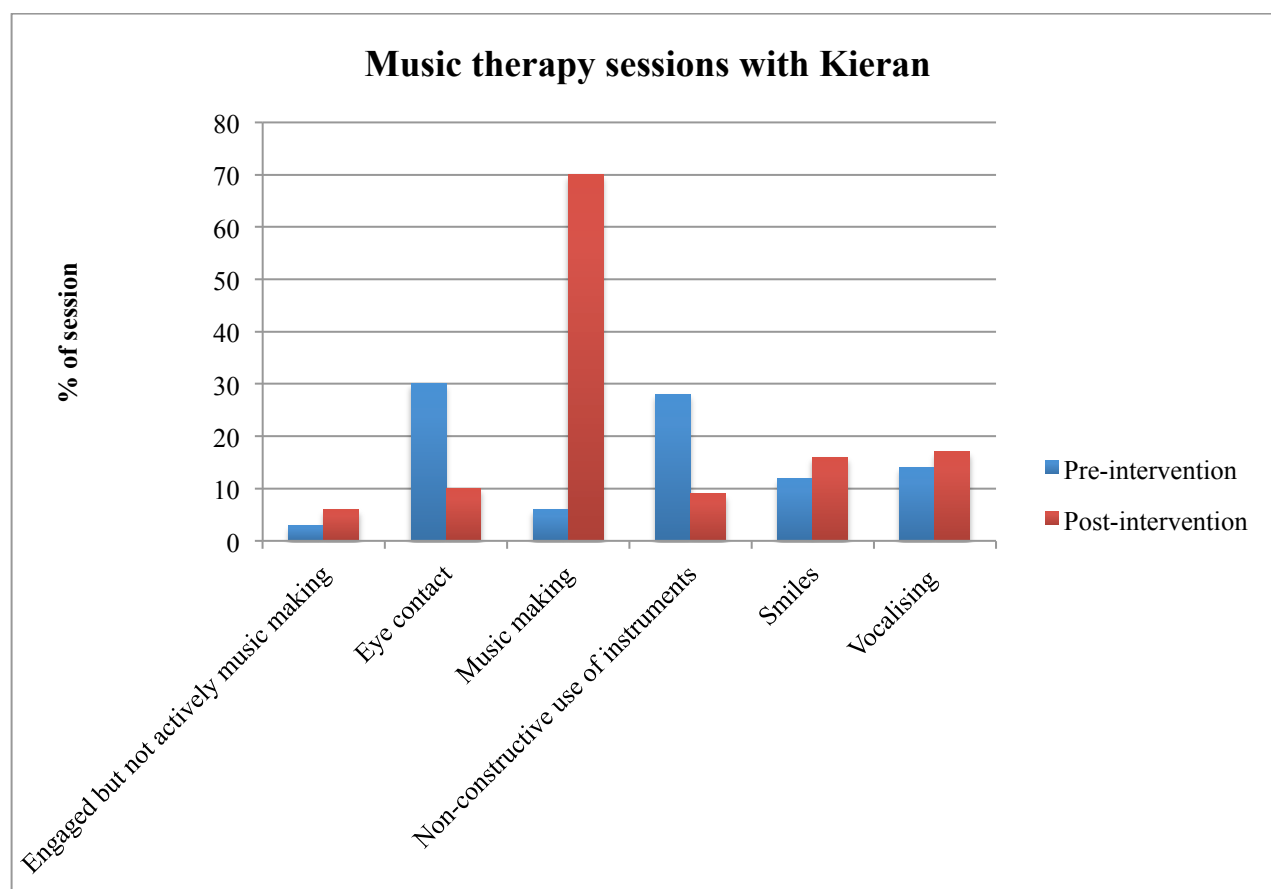
In Bella's music therapy report (appendix 5.1.2) it was noted that she had quickly settled well into sessions, and was vocalising in response to the therapist's playing and singing, though this was mood dependent and fluctuated from session to session. Bella was very responsive to music in general, but consistently preferred high-pitched notes played on the flute. Bella clearly enjoyed her music therapy sessions and responded in a cheerful and animated way on

most occasions, though she also took pleasure in quietly listening on days when she was less energised.

#### **5.2.6 Video analysis results and developments for Kieran in music therapy**

Kieran had a diagnosis of cerebral palsy and visual impairment and was six years old. He was referred for music therapy by his class teacher with a view to developing his social and communication skills, and this led to him being selected to participate in the research project. Kieran was a relatively bright boy with severe physical disabilities, who often felt the need to have control over exchanges. He was highly motivated by music, and this encouraged him to engage in shared rhythmic play for sustained periods of time, which developed his capacity to focus and interact successfully. Kieran had the motivation to communicate vocally and verbally, but was physically restricted in his ability to do this. My aims for his sessions were to encourage him to explore the use of his voice within song structures, and to develop his ability to engage in a flexible and co-ordinated way, extending listening and turn-taking skills. I was also conscious of liaising with other health professionals, for example, the speech therapist, in discussing Kieran's speech development in sessions, and in attempting to ascertain to what extent he was able to create vocal sounds. Initially it was unknown whether he would be able to interact vocally due to damage to his vocal chords when he had surgery as a baby.

**Table 5.2.6 Video analysis graph for Kieran**



The results from Kieran's sessions are very positive in that his levels of music making really increased from 6% to 70%, although this led to a reduction in eye contact from 30% to 10%, as he was often looking down when exploring the guitar or keyboard. (Kieran naturally made good eye contact so in a sense sustaining eye contact was a less important objective for him in sessions). The non-constructive play reduced considerably from 28% to 9%, and his vocalising within song structures increased from 14% to 17%, as he became more confident about using his voice.

Kieran's music therapy report (appendix 5.1.5) described his enthusiastic and positive approach to music making and strongly rhythmic play. Kieran had such a natural capacity to respond to music, and he was able to immerse himself in animated and communicative

musical exchanges. Kieran also had a strong desire to communicate vocally, and willingly explored and extended vocal exchanges within the framework of songs. After the music therapy sessions with Kieran had begun, it was discovered that he had suffered damage to his vocal chords during surgery in the first year of his life, so although he was very keen and determined to use his voice and respond vocally, there was a limit to the extent that he could produce vocal sounds. The medical specialists are uncertain as to how his capacity for speech will develop over time as he grows. Despite these limitations Kieran has the determination to use his voice as much as is physically possible. During the research period it became clear that he was not only able to produce vocal sounds, but that he was very keen to communicate in this way, particularly when joining in with singing. Over time and with repetition of vocal sounds, Kieran began to create more recognisable speech sounds in the context of songs.

As well as the musical and singing developments in Kieran's sessions, he also had the opportunity to make decisions in selecting instruments, giving him a sense of autonomy and confidence.

I was also conscious of encouraging Kieran to co-ordinate his movements effectively using musical stimulation. Although the emphasis of my research was on verbal development and collaborative work, I was additionally concerned with overall social development. Similarly to music therapist Kwak (2007), who researched the use of music with children with cerebral palsy, I used music to motivate Kieran to control his arm movements. Kieran was extremely motivated to play the keyboard and initially just used his right arm and hand to play, banging energetically on the keys, smiling and laughing. Over time I started to encourage him to use both hands, gently supporting his arm and placing his hand onto the keys. Eventually he began to independently play with both hands, making this look like a natural and fluid movement for him. The motivational aspect of a musical stimulus is extremely powerful in

this type of context, and the child is almost unaware of the progression, as he is so involved in the process of music making.

Kieran found it difficult at times to wait for his turn to play, partly because he was so motivated to interact musically that he wanted to play all the time. Through song structures and humorous musical games I was able to encourage him to listen and wait for his turn to play. This is a concept I have continued to develop with him now that he attends music therapy in a group, where social skills with his peer group are evolving well.

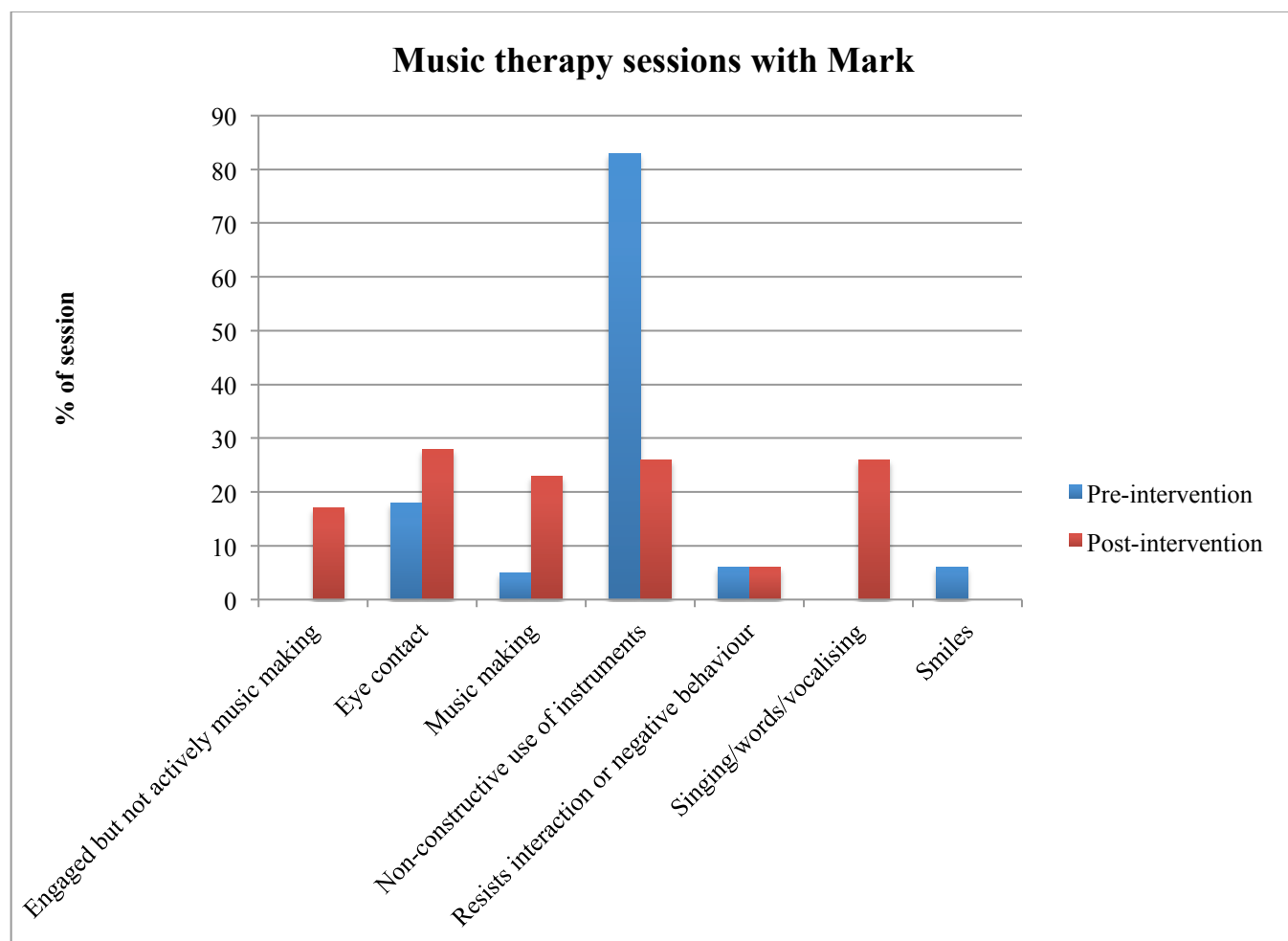
#### **5.2.7 Video analysis results and developments for Mark in music therapy**

Mark had a diagnosis of autism spectrum disorder and was seven years old. He had attended music therapy sessions at a pre-school children's centre, initially in a music therapy group, and then in individual sessions. Mark was referred for music therapy by his class teacher, with a view to developing his social and communication skills. Mark attended a music therapy group run by a music therapy student, prior to his involvement in the research project.

Mark was socially isolated due to his autism and was very controlling in his approach to interactive exchanges. He could be quite vocal and verbal at times, but was selective in the way that he used his voice. My aims for Mark's sessions were to develop his capacity to be flexible and co-operative in his approach to social interaction, and to provide opportunities for exploring his voice and extending his verbal skills.



**Table 5.2.7 Video analysis graph for Mark**



The analysis results from Mark's sessions demonstrate that his vocalising and use of words increased from 0% pre-intervention to 26% post-intervention. Mark became increasingly engaged with the music making process during the therapy phase, and his negative preoccupation with fiddling with the instruments decreased from 83% to 26%. His use of eye contact increased from 18% to 28% and his constructive music making also developed from 5% to 23%, as did his levels of direct engagement with the therapist (0% to 17%).

Mark was initially very resistant to social engagement, and attempted to find an alternative activity to focus on every time the therapist tried to interact with him. As musical activities and games that stimulated Mark were discovered, he became progressively less resistant to

engaging, although he still reacted angrily if he felt the therapist was ‘crowding’ him and not allowing space for his independent exploration.

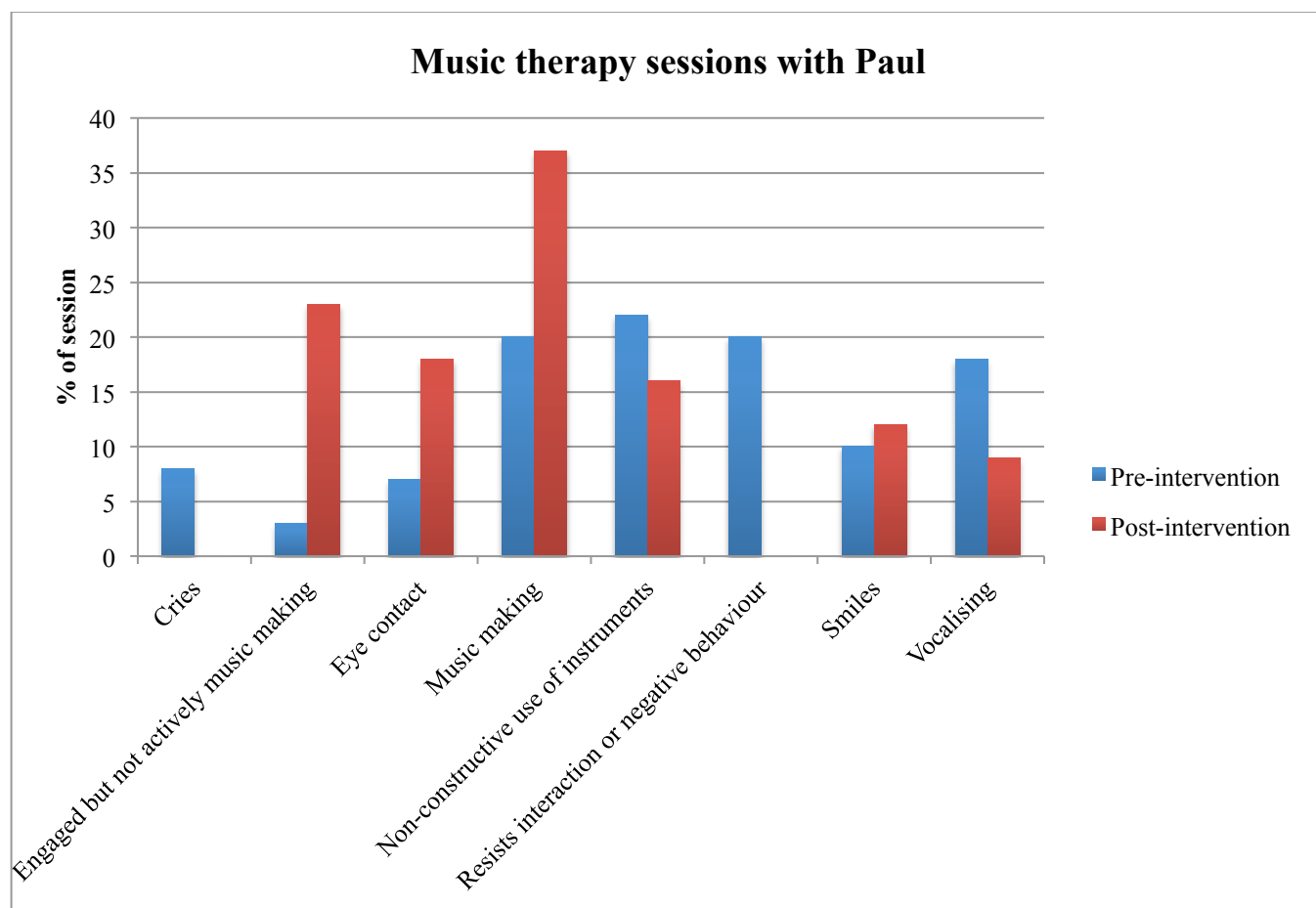
In Mark’s music therapy report (appendix 5.1.6) the development of Mark’s behaviour over the course of the therapy phase was reflected on. Initially he could be defensive in a typically ‘autistic’ way, wanting to control our interactive exchanges and rejecting the therapist’s attempts to join him in play. Over time he took a much more flexible approach to shared exchanges, allowing the therapist to take up his creative ideas and embellish these with musical accompaniment and singing interaction. As part of this process Mark also extended his use of verbal interaction and spontaneous vocal exchange.

#### **5.2.8 Video analysis results and developments for Paul in music therapy**

Paul had a diagnosis of autism spectrum disorder and was six years old. He previously attended music therapy at a child development centre with his parents and younger brother. Paul was referred for music therapy by his class teacher, as she felt that music therapy would help his communication and interaction skills.

Paul presented as a bright boy who had social difficulties relating to his autism. He was particularly responsive to music, and had a good awareness of pitch and rhythm. My music therapy aims for Paul were to provide opportunities for expressive music making and develop the length of time that he could remain focused on interactive exchanges, as well as extend his capacity to express himself through vocal and verbal exchanges.

**Table 5.2.8 Video analysis graph for Paul**



As the charts reflect, over time Paul became very much more involved in interactive music making with his levels of engagement increasing from 3% to 23% and music making from 20% to 37%, with musical frameworks providing motivation and security for him. Although the chart shows that Paul's vocalising decreased from 18% to 9%, the vocalising that he did do was more communicative and socially focused than the earlier vocalising, which had had more of a distressed feel to it. Paul made great progress in becoming less resistant to the therapist's engagement with him, and this reduced from 20% pre-intervention to 0% post-intervention. Initially Paul cried and avoided interaction, frequently moving from one side of the room to the other to keep away from the therapist. Although he had a desire to explore the

musical instruments, he would initially prefer to forego this exploration than risk engaging with an adult

Paul's music therapy report (appendix 5.1.7) described his innate sense of musicality and rhythmic abilities. Although Paul would have naturally preferred to explore independently, the report outlines the development in his capacity to interact musically with the therapist. The way Paul used his voice in a creative and communicative way really evolved as sessions progressed. Paul's sometimes striking capacity to understand musical structures and respond to song frameworks was evident in the way that he explored musically alongside the therapist, with his capacity to repeat particular musical patterns and recognise ends of phrases, and so on. This musical motivation and understanding ultimately led to him being more prepared to share musically and vocally with the therapist. Paul had an acute awareness of pitch and was able to sing back melodic phrases extremely accurately, as well as being able to replicate phrases on the piano, moving up and down the keys repeating specific intervals. The experience of working with children with ASD with this capacity for 'perfect pitch' has been relatively frequent during my time working as a music therapist.

### **5.3 Statistical analysis of the children's vocal scores from the video analysis**

The results of the statistical analysis of the children's vocal scores from the video analysis will now be presented. (The children's pre- and post-intervention vocal scores can be obtained from the figures in the previous graphs). The full statistical analysis report can be found in appendix 5.2.

#### **5.3.1 Comparison of the mean of the assessment score for the two interventions**

Analysis of covariance was used to assess the difference between the mean assessment score for the two interventions (music therapy alone and music therapy plus TA intervention). In this type of analysis the response variable is the assessment score at the final assessment, and the covariate is the assessment score at the baseline assessment. Hence the means of the assessment score at the final assessment for the two interventions were compared after adjustment for the assessment score at the baseline assessment.

Analyses were performed using the computer program R (R Development Core Team 2015). Bootstrapping was performed using function `two.boot` from R package `simpleboot` (Peng 2008). Bias-corrected and accelerated confidence limits were obtained using function `boot.ci` from R package `boot` (Davison and Hinkley 1997, Canty and Ripley 2011). The permutation test for one-way analysis of variance was done using function `aovp` from R package `lmPerm` (Wheeler 2010).

### 5.3.2 Descriptive statistics of the data

The following table displays the main features of the data:

**Table 5.3.2 Quantitative variables by intervention**

Variable	Intervention				Difference T – M			
	M = Music therapy n = 4		T = Music therapy plus TA intervention n = 4		Mean difference (standard error)	95% confidence limits		P- value
	Mean <Median >	Standard Deviation (IQR) [Range]	Mean <Median >	Standard deviation (IQR) [Range]		Low- er	Upp- er	
Baseline score	13.00 <16.00> n = 4	9.02 (6 to 19) [0 to 20]	19.50 <17.50> n = 4	10.34 (11 to 28) [10 to 33]	6.50 (6.42)	-4.83	20.13	0.439
Final score	14.50 <13.00> n = 4	8.96 (7.2 to 22.3) [6.0 to 26.0]	34.00 <33.50> n = 4	29.02 (8.7 to 59.5) [7.0 to 62.0]	19.50 (14.41)	-8.33	47.20	0.317
Final - Baseline  Score	1.500  <-3.000> n = 4	17.82  (-11.9 to 16.4) [-14.0 to 26.0]	14.500  <12.000> n = 4	21.02  (-3.1 to 32.9) [-6.0 to 40.0]	13.000  (12.994)	- 12.33 3	37.73 3	0.362

Standard deviations are based on within-group data (not on pooled estimates).

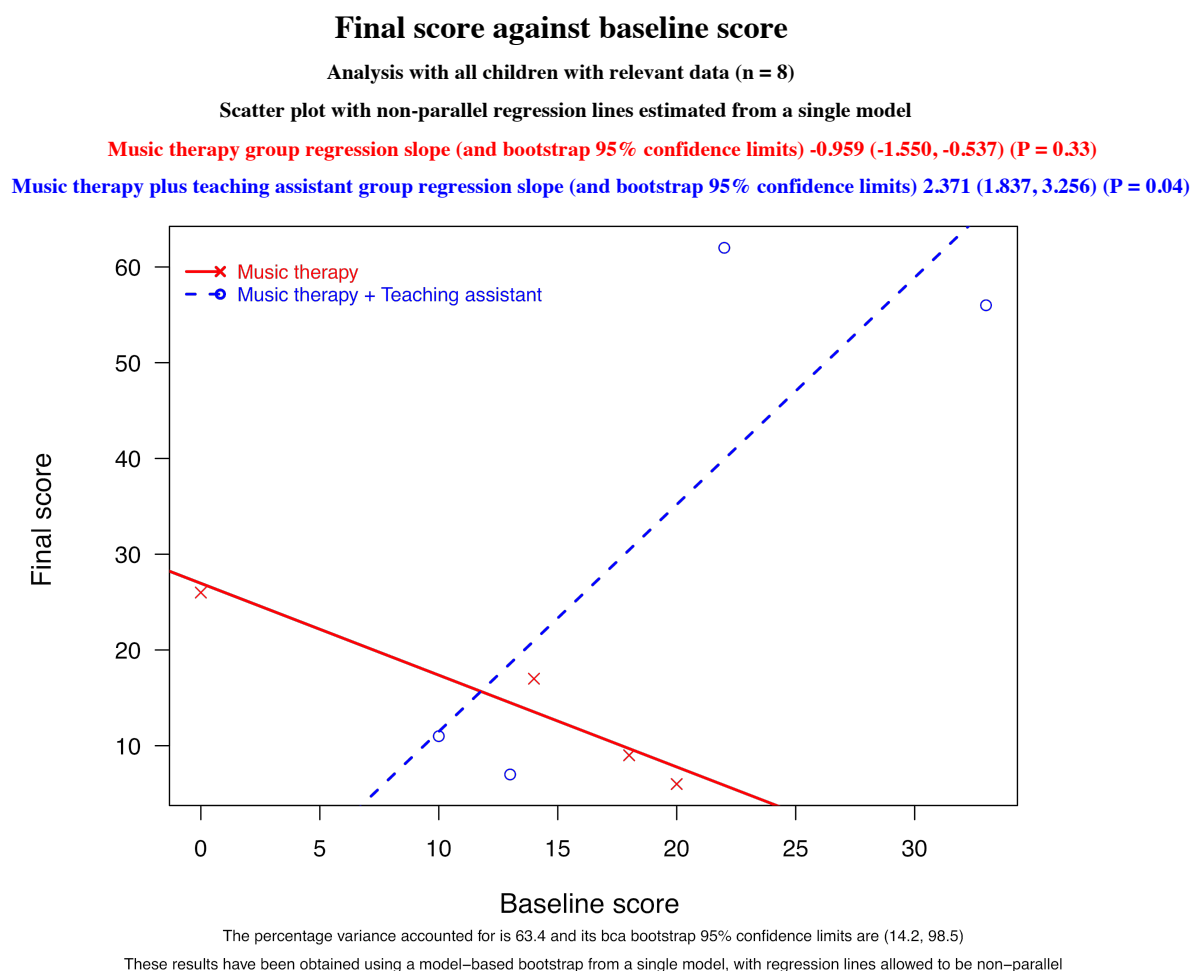
Standard errors of differences between means and confidence limits have been obtained using 9999 bootstrap samples.

### 5.3.3 Statistical analysis and interpretation of results

This investigation is a pre-post study with the aim of evaluating the change in score from baseline to the final assessment. Here the changes are compared for the two interventions.

Bootstrapping techniques were utilised due to the small number of participants in the research group, to calculate probability values of a larger group size.

**Table 5.3.3 Graph to compare video analysis results between the two groups**



In the graph above the regression lines for the two groups appear to be very non-parallel. The line for the music therapy plus TA intervention shows a trend in a positive direction from the lower baseline scores, and is statistically significant (P = 0.04). This is a very positive result and indicates that the additional TA intervention made a definite impact on the verbal development of the children. The graph indicates that two of the children from this group made exceptional progress with their verbal development supported by song frameworks, and the other two children remained more consistent in their vocal contributions.

The line for music therapy alone shows that higher baseline scores resulted in less increase in final scores. If this represents the real effect then music therapy alone has less of a significant impact on the development of vocal interaction. However, this trend is not statistically

significant ( $P = 0.33$ ), and so the apparent trend can be put down to sampling variation. One of the children in this group was making more vocal contributions by the end of the intervention, whereas the other three children in the group remained more static verbally. However, there were positive developments in other aspects of their social communication, as can be observed from their earlier graphs and developments observed from a qualitative perspective.

The difference (music therapy plus TA intervention, minus music therapy alone) between the mean assessment score at the final assessment, adjusted for the assessment score at the baseline assessment is 13.44 (95% CI: -12.45 to 37.44), which is not statistically significant ( $P = 0.454$ ). A larger research investigation based on a similar methodology could potentially produce more statistically significant results.

#### **5.4 Additional quantitative results**

The following data and information comprises additional results that emerged during the music therapy and TA intervention. These results were not the main focus for the study, but provide additional information which compliments the main findings. These results are in two sections: the interview scores from the parent questionnaires, and the TA and therapist behaviours during sessions pre- and post-intervention.

#### **5.5 Interview scores from the parent questionnaires**

As part of the parent interview process I calculated scores from parent responses to particular questions. The questions (taken from the questionnaires) were as follows:

Q.1 Does your child enjoy listening to music at home?

Q.2 Do you sing with your child at home?

Q.3 How much vocalising does your child use at home?

Q.4 Is your child's vocalising communicative or expressive?



Q.5 Does your child use words at home?

The reason for collating these scores was to add additional information about how the child was behaving at home pre- and post-intervention. A general picture of the parent's perception of their child's behaviours can be obtained. The results from the parents of the children who received both types of intervention are displayed first, followed by the results of those children who just received music therapy.

**Scoring for responses:**

- 1 = Never
- 2 = Hardly at all
- 3 = A small amount
- 4 = Quite a lot
- 5 = A lot

**Music therapy plus TA intervention**

**Charlie (pre-intervention)      Charlie (post-intervention)**

Q1. 3	Q1. 3
Q2. 4	Q2. 3
Q3. 4	Q3. 5
Q4. 4	Q4. 4
Q5. 2	Q5. 3
Score = 17	Score = 18

**Elliot (pre-intervention)      Elliot (post-intervention)**

Q1. 4	Q1. 4
Q2. 5	Q2. 3
Q3. 3.5	Q3. 5
Q4. 5	Q4. 5
Q5. 3	Q5. 3
Score = 20.5	Score = 20

**Remiel (pre-intervention)      Remiel (post-intervention)**

Q1. 5	Q1. 5
Q2. 5	Q2. 5
Q3. 5	Q3. 5
Q4. 5	Q4. 5
Q5. 4	Q5. 5
Score = 24	Score = 25

**Music therapy**

**Bella (pre-intervention)      Bella (post-intervention)**

Q1. 5	Q1. 5
Q2. 5	Q2. 5
Q3. 5	Q3. 5

Q4. 5  
Q5. 2  
Score = 22

Q4. 5  
Q5. 1  
Score = 21

**Kieran (pre-intervention)**

Q1. 5  
Q2. 4  
Q3. 4  
Q4. 4  
Q5. 4  
Score = 21

**Kieran (post-intervention)**

Q1. 5  
Q2. 4  
Q3. 5  
Q4. 5  
Q5. 4  
Score = 23

**Mark (pre-intervention)**

Q1. 5  
Q2. 4  
Q3. 5  
Q4. 5  
Q5. 4  
Score = 23

**Mark (post-intervention)**

Q1. 5  
Q2. 5  
Q3. 5  
Q4. 5  
Q5. 5  
Score = 25

**Paul (pre-intervention)**

Q1. 5  
Q2. 5  
Q3. 3.5  
Q4. 3  
Q5. 1.5  
Score = 18

**Paul (post-intervention)**

Q1. 5  
Q2. 4  
Q3. 4  
Q4. 3.5  
Q5. 1.5  
Score = 18

**Table 5.5 Pre- and post-intervention parent interview scores**

	Pre-intervention interview score	Post-intervention interview score
Charlie	17	18
Elliot	20.5	20
Remiel	24	25
Bella	22	21
Kieran	21	23
Mark	23	25
Paul	18	18

Half of the parents had raised interview scores post-intervention, and this reflected their feeling that their children had made good progress during the research project in relation to how much they were using their voices at home. Bella's mother's score reduced by one point, but this was only in relation to Bella's use of words, which had been low both pre- and post-

intervention. Paul's mother's score was consistent, despite the fact that during the interview she expressed positivity in relation to his vocal and verbal development. Similarly Elliot's parent's score reduced fractionally, despite them expressing the view that Elliot had progressed very well in his communicative abilities post-intervention.

### **5.6 TA behaviours pre- and post-intervention**

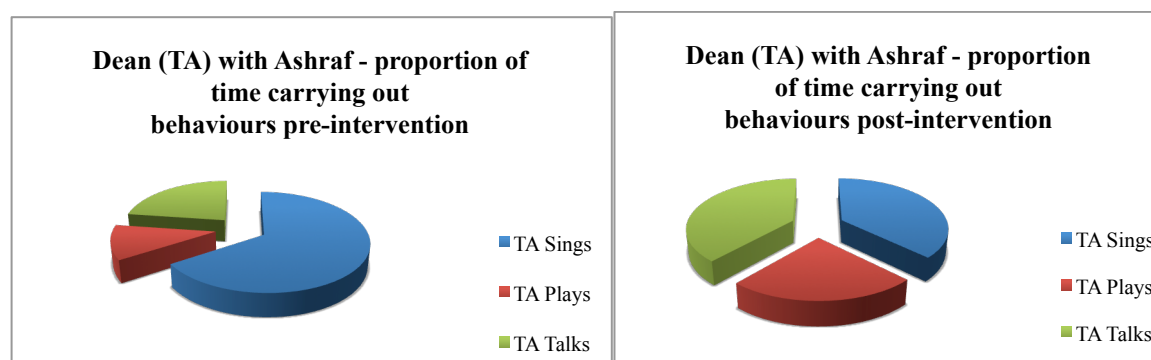
The following pie charts demonstrate the percentage proportion of time that the TA spent carrying out each of the three behaviours, during the time that they were actively engaging with the child. The TAs were actively engaged for the majority of the sessions, and there were very few blank boxes on the analysis charts for TA behaviours.

The charts included are from the TA sessions where the TA was consistent at the start and finish of the project. The TA working with Elliot changed over soon after the initial video had been taken, so that Joy who worked with Elliot for most of the project was just video-ed post-intervention. For this reason I did not include video analysis results for TA behaviours from Elliot's sessions.

Although TA and therapist behaviours were not the main focus of my study, I found it interesting to reflect on the adult behaviours in relation to the course of the intervention and the progress of the children.

### 5.6.1 TA behaviours in music sessions with Ashraf

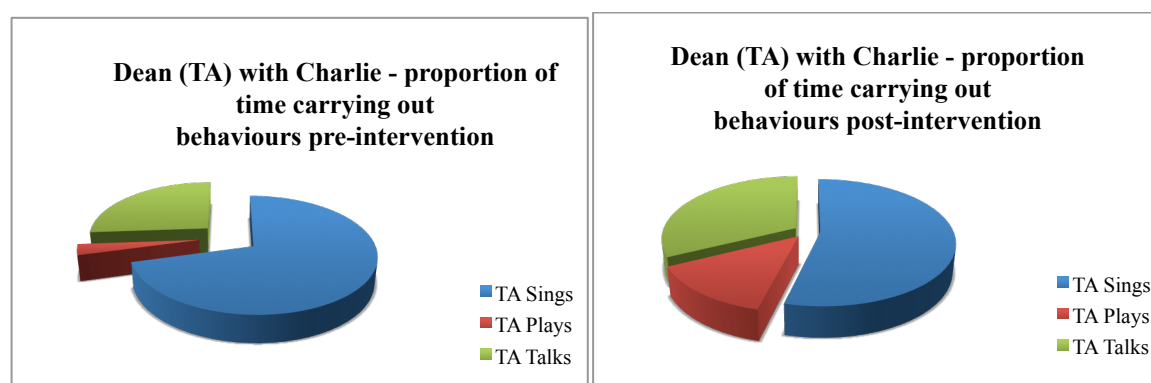
**Table 5.6.1 TA behaviour charts (Ashraf)**



In Ashraf's sessions Dean initially sang a lot to encourage Ashraf to sing, but by the end of the project he was waiting more for Ashraf to contribute vocally. Dean also spent more time playing the instruments by the end of the intervention, in order to motivate Ashraf to play and use his voice. Interestingly Dean talked to Ashraf more at the end of the project, and possibly found that Ashraf became increasingly involved in the exchanges when given a direct instruction to play.

### 5.6.2 TA behaviours in music sessions with Charlie

**Table 5.6.2 TA behaviour charts (Charlie)**

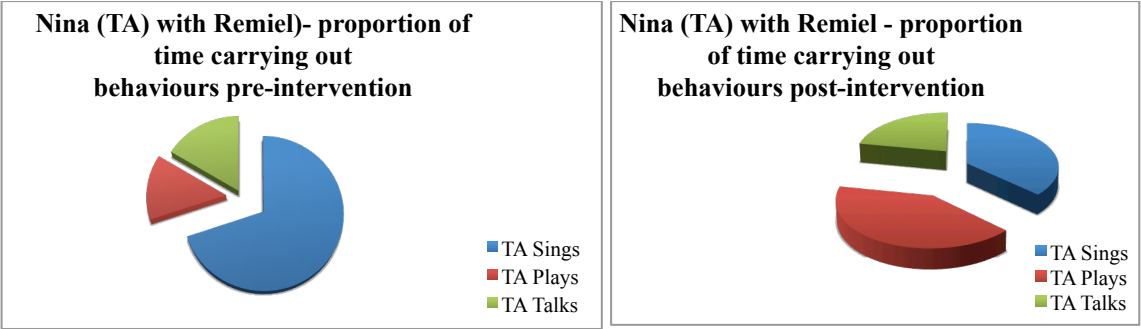


A similar pattern emerged with Dean's behaviour in Charlie's sessions, in that his singing decreased and his direct instructions to Charlie increased, with instrumental playing also increasing. This could possibly be because Dean felt more comfortable with the structure of

sessions post-intervention, and was more inclined to direct Charlie and then support him instrumentally.

5.6.3 TA behaviours in music sessions with Remiel

Table 5.6.3 TA behaviour charts (Remiel)



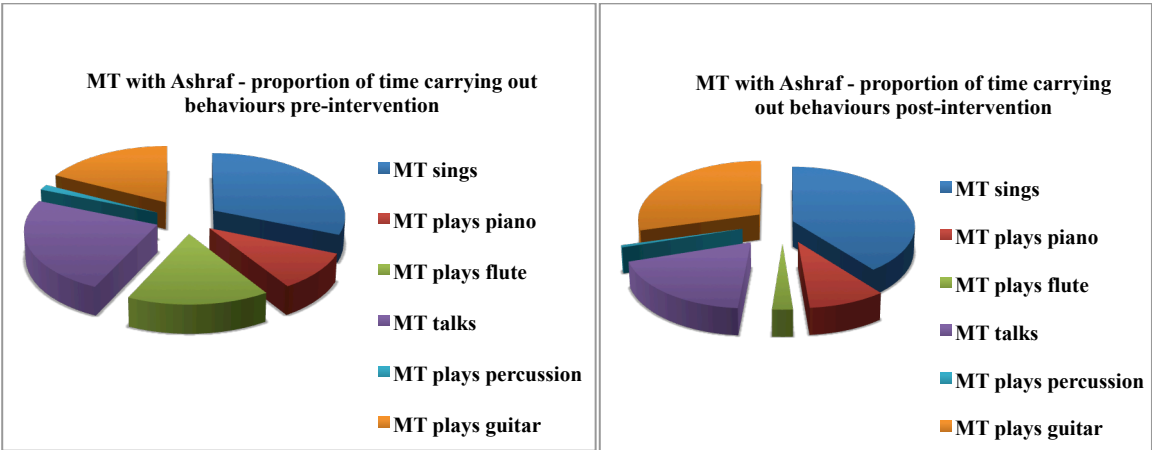
Nina started off by singing for a large proportion of her sessions with Remiel, but by the end of the intervention, she had reduced her quantity of singing to allow Remiel to take over with this activity. Instead she used her playing with the musical instruments to encourage Remiel to participate vocally. Nina talked fairly consistently to Remiel throughout the project, often giving out direct instructions, for example, encouraging him to select instruments to play.

5.7 Music therapist behaviour charts

The following charts indicate the proportion of time that the therapist spent carrying out each of the behaviours. Similarly to the TA behaviours, the therapist was actively involved for almost the entire session, with very few blank boxes on the analysis charts.

5.7.1 Music therapist behaviours in sessions with Ashraf

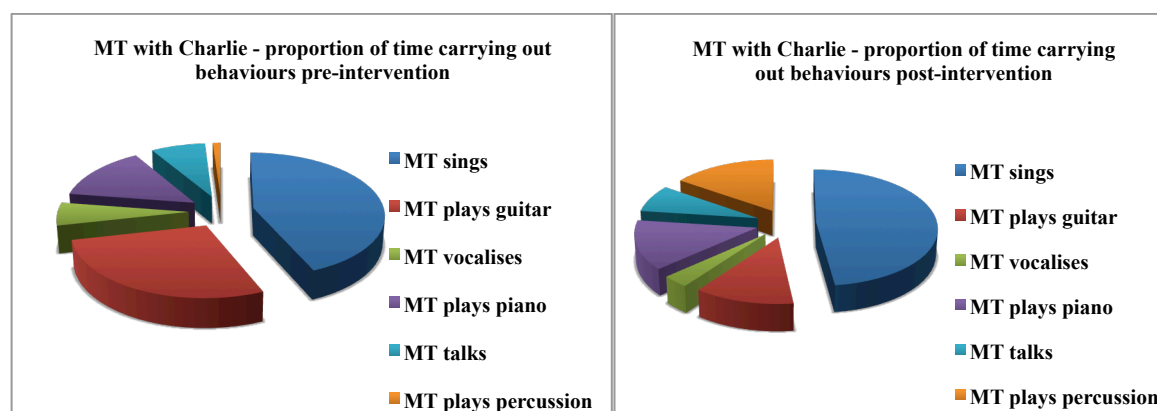
Table 5.7.1 Music therapist behaviour charts (Ashraf)



In my sessions with Ashraf there was not a very noticeable change between my behaviours pre- and post-intervention. I used a range of instruments which reflected the need to keep Ashraf’s attention, as his concentration could be fleeting. There was a reduction in my flute playing, which possibly reflects the particular phase that Ashraf was in, as he could be responsive to an instrument for a few sessions, and then less responsive in other phases. I was singing for a large proportion of the session both pre- and post-intervention to engage him in vocal and singing exchanges.

## 5.7.2 Music therapist behaviours in sessions with Charlie

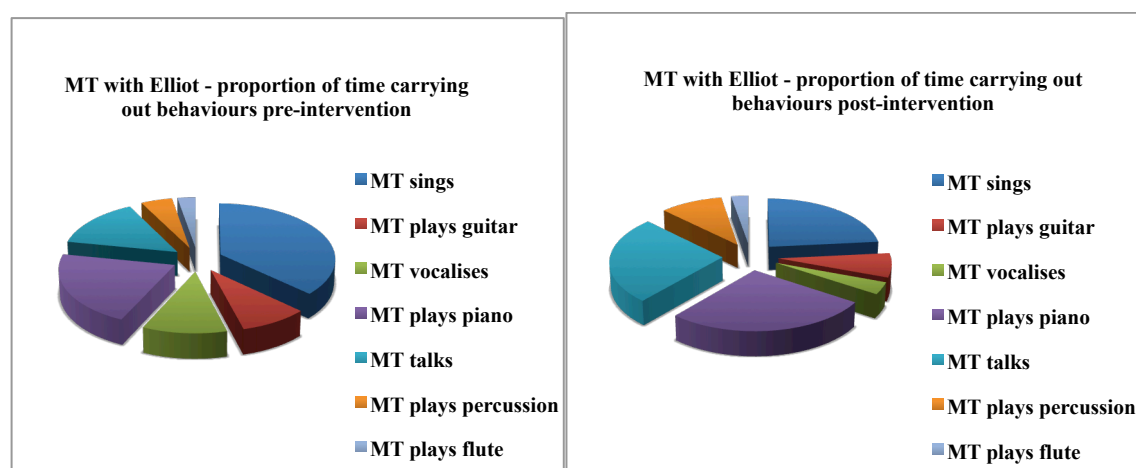
**Table 5.7.2 Music therapist behaviour charts (Charlie)**



In Charlie's music therapy sessions I initially attempted to soothe him through sitting opposite him playing the guitar, as he was distressed about the new routine of coming to music therapy. It can be seen from the charts that there was a reduction in my guitar playing post-intervention, which reflects the fact that I then spent more time engaging him with a range of percussion instruments, particularly the drum, as he was responsive to shared singing activities supported by a rhythmical drum accompaniment. I consistently sang for a large proportion of the session in order to encourage Charlie to use his voice. I did not use my flute with Charlie as he was very sensitized to the sound and cried if I played it.

## 5.7.3 Music therapist behaviours in sessions with Elliot

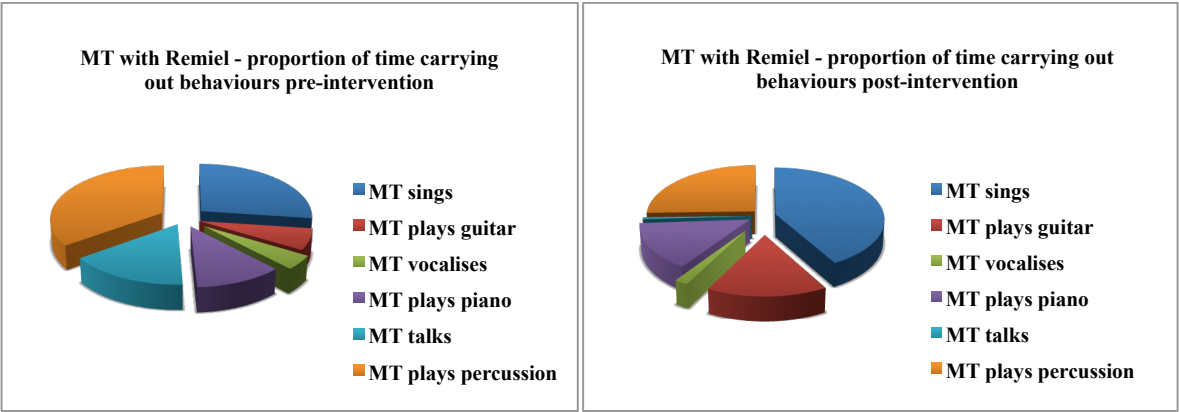
**Table 5.7.3 Music therapist behaviour charts (Elliot)**



In my sessions with Elliot I consistently used the piano to support his musical exploration, and also sang for a large proportion of the sessions, although this decreased post-intervention. Interestingly I spent a lot of time talking to Elliot post-intervention, and this perhaps reflects the fact that he had been unwell prior to this session, and I felt the need to reassure him verbally. This would also potentially have encouraged Elliot to use his voice, almost as much as the singing exchanges. My use of improvisatory vocalising decreased during the intervention as I found that over time he responded more favourably to spoken and playing interaction, rather than imitative vocal exchanges.

### 5.7.4 Music therapist behaviours in sessions with Remiel

**Table 5.7.4 Music therapist behaviour charts (Remiel)**

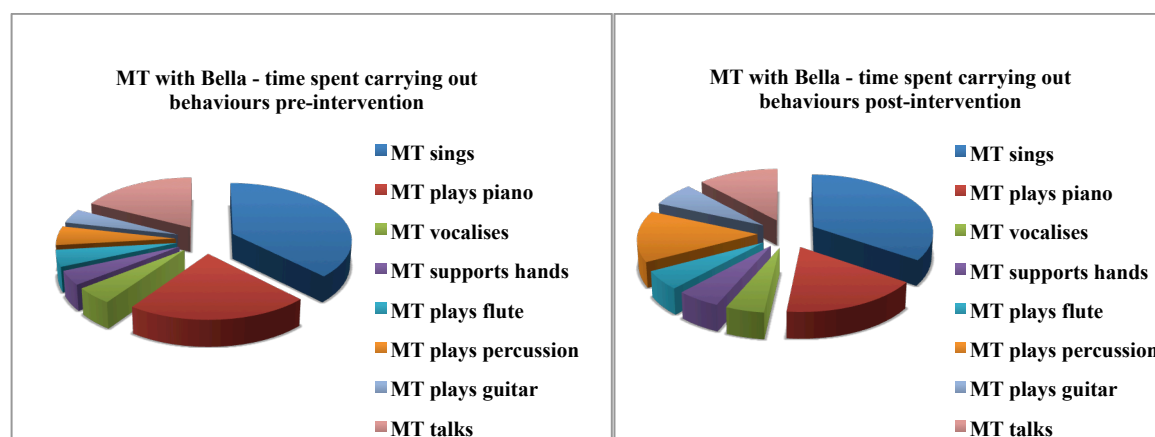


The charts demonstrate the fact that I was initially supporting Remiel more with percussion accompaniment, and also encouraging him through verbal interaction. By the end of the intervention a large proportion of the session was spent sitting opposite each other, with me playing the guitar, engaging in singing exchanges together. This activity was very much enjoyed by Remiel, and supported his verbal development and confidence in using his voice.



### 5.7.5 Music therapist behaviours in sessions with Bella

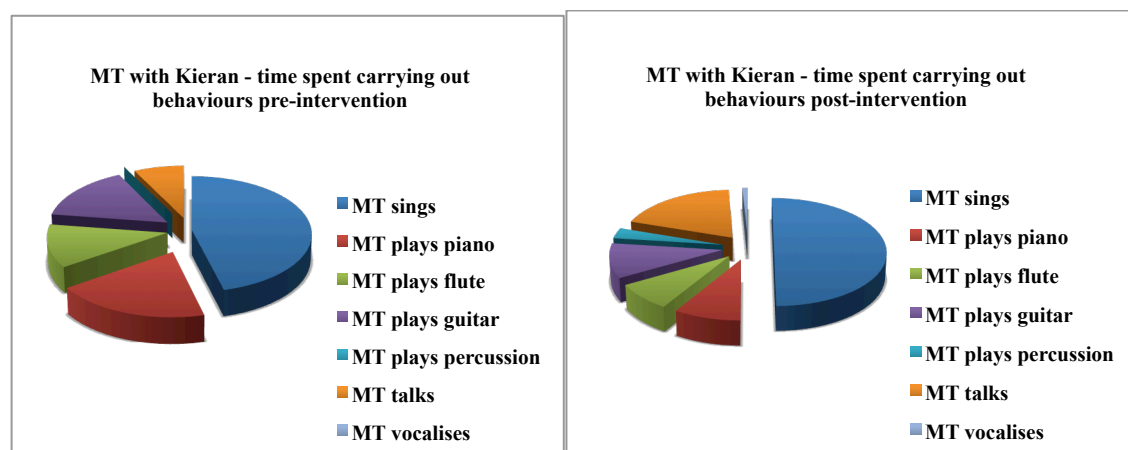
**Table 5.7.5 Music therapist behaviour charts (Bella)**



In music therapy sessions with Bella, I also used a range of instruments to engage her, and additionally spent some time supporting her physically. Bella had very limited use of her hands at this point, and could contribute musically when her hands were initially supported, and then she could take over with the playing. There was not a huge change in my behaviours pre- and post-intervention, but a consistently large proportion of the sessions were spent actively singing and playing the piano to encourage Bella to contribute vocally. I used a wide range of musical instruments to keep Bella's attention, moving fairly quickly from one to the next, and post-intervention there was an increase in my use of percussion instruments.

### 5.7.6 Music therapist behaviours in sessions with Kieran

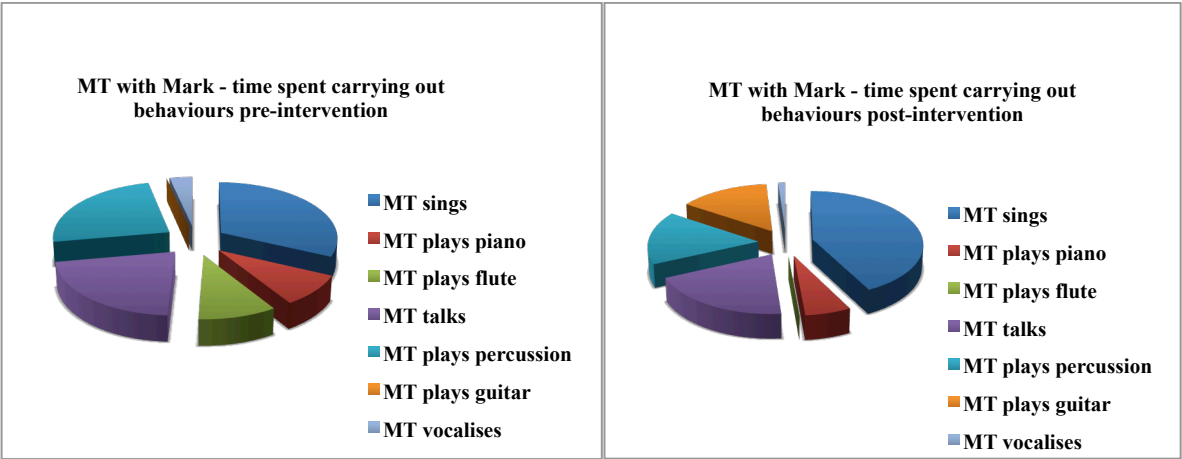
**Table 5.7.6 Music therapist behaviour charts (Kieran)**



The charts demonstrate that in my music therapy sessions with Kieran I sang for almost half the session, both pre- and post-intervention, and initially this was supported primarily by piano accompaniment, although by the end of the treatment phase I was using less piano to support the singing interaction. At the start of the phase I was using the flute slightly more than by the end of the intervention, and post-intervention I was engaging more with Kieran through verbal interaction. The increase in singing interaction reflects the fact that Kieran most enjoyed this type of exchange, and it prompted him to contribute vocally and verbally, building on his communication skills.

**5.7.7 Music therapist behaviours in sessions with Mark**

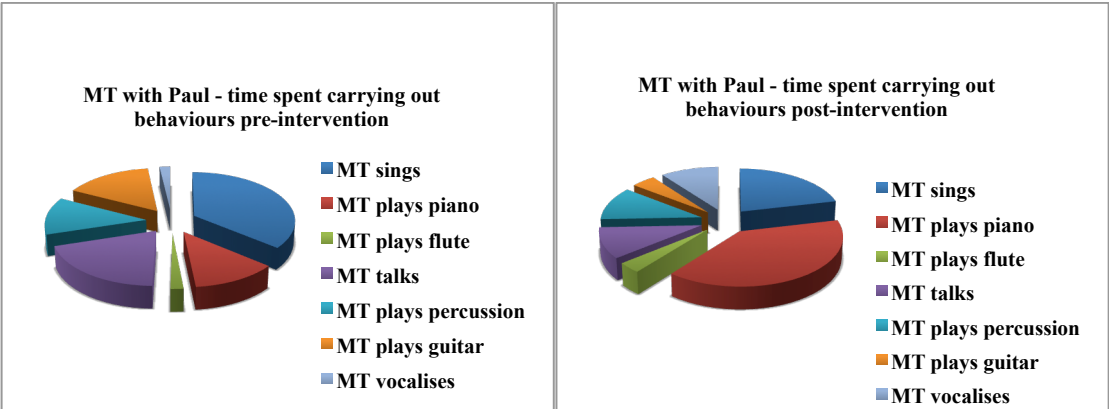
**Table 5.7.7 Music therapist behaviour charts (Mark)**



In my sessions with Mark I spent quite a large proportion of time engaging verbally with him as it was one of the best ways to encourage him to focus on activities. This was consistent pre-and post-intervention. There was a clear increase in the quantity of time I spent supporting Mark musically through singing with a guitar accompaniment, and this reflected the development in Mark’s capacity to engage musically with me, rather than exploring the musical instruments in a mechanical way. Over time I found that the guitar was the best instrument to use with Mark as I could attempt to retain eye contact with him and follow his constant movement, which was easier with the guitar than with the piano.

5.7.8 Music therapist behaviours in sessions with Paul

Table 5.7.8 Music therapist behaviour charts (Paul)



In sessions with Paul at the start of the intervention I sang for a large proportion of the time, and this reduced post-intervention as our shared piano exploration took over. My singing was replaced by vocalising during piano playing, as we engaged in shared vocal and piano exchanges. Paul became less interested in being supported by guitar accompaniment as the piano became more of a focus. At the start of the intervention I interacted verbally with Paul, and this reduced post-intervention as we were more absorbed into piano and vocal interaction.

5.8 Summary of TA and therapist behaviours

There was a definite pattern to the TA behaviours, whereby pre-intervention they focused on engaging the children through active singing exchanges. Post-intervention the TAs appeared to have gained confidence in engaging the children through instrumental playing, and were more secure in directing the child verbally as the structure of the session became clearer. The diversity of the therapist behaviour charts demonstrated my fluctuating use of musical instruments in response to the individual needs of the children. The necessity of meeting the specific needs of the child in relation to therapeutic objectives is apparent, and the capacity of the therapist to adjust the instrumental and singing content according to individual requirements. Oldfield, Tomlinson and Loombe (2015) write about the specific uses of

musical instruments in therapy sessions to respond to individual clients, and my behaviours in sessions during the music therapy intervention demonstrate the capacity of the therapist to adapt to the needs of individuals and their particular responses to a range of musical sounds. One of my most consistent behaviours during all of the sessions was the use of singing, and this highlights the fact that the singing voice can be very powerful as a therapeutic tool (2.5.1), both in stimulating and soothing children, and in motivating them to contribute vocally.

## **5.9 Summary of the results**

My intention at the outset of this research was to look into whether collaboration with TAs and setting up additional music sessions could positively impact on the verbal development of young children with special needs. I hoped to quantify this progress through video analysis pre- and post-intervention, and collect qualitative material to enhance my understanding of the quantitative results. Although the focus for the study was on vocal and verbal development, I also measured the children's behaviours in relation to individual objectives. However, the statistical analysis of the video results was based purely on the vocal scores, so did not incorporate results in relation to behaviours such as use of eye contact, engagement, music making and so on.

The outcome of the results for the children who received additional TA support was very positive and statistically significant, i.e. the children were vocalising and using verbal interaction more at the end of the study than pre-intervention. The children who received music therapy alone made less verbal progress, although some of the vocal scores still increased and most of the children made good progress in other social areas, such as use of eye contact, engagement and music making. There was a clear explanation in relation to individuals as to why the vocal progress had been restricted in these particular children.

The positive results of the children who had had the additional TA sessions highlighted the possibilities for enhancing the children's progress where there was collaboration between therapist and TAs. In the following chapter, qualitative results will be presented that provide more insight into why additional TA support impacted in a positive way on the children's verbal progress.

## CHAPTER SIX

### KEY FINDINGS FROM THE QUALITATIVE DATA

#### 6.1 Introduction

Information obtained from the semi-structured interviews will be presented, alongside extracts from the analysis to demonstrate the method used. An overview of the research diary will also be described to give an outline of the research process from a personal and logistical perspective.

#### 6.2 Results from the semi-structured interviews

As explained in the methodology (4.5.4), seven parents of the research participants were interviewed, as well as all of the TAs involved in the project (Full interview transcripts can be found in appendix 6.1). These interviews took place pre- and post- intervention. Tape-recorded material was transcribed from the interviews and analysed using Interpretative Phenomenological Analysis as outlined in Smith, Flowers and Larkin (2009). Elements of the text were written onto the transcription, which came under the following headings: descriptive (content of what was said), linguistic (how the interviewee presented the material) and conceptual (interpretative, with insight and reflections from the analyst).

The process for the interview analysis was the same for both parent and TA interviews, and material from the parent interviews will be presented first.

The following table demonstrates a section of parent interview material with descriptive (plain text), linguistic (*italics*) and conceptual (underlined) comments written in the right-hand column (the rest of this interview and analysis can be found in appendix 6.5). Emergent themes were listed after the researchers exploratory comments were written, and these are shown in the left-hand column:

**Table 6.2.1 Parent interview material demonstrating exploratory comments and emergent themes**

<p><b>Emergent themes</b></p>	<p><b>Original transcript – interview with Paul’s mother – October 16<sup>th</sup> 2012</b></p> <p>MT (music therapist) - <i>Right, so the first question is...does Paul listen to music at home. Does he listen to it a lot...or...quite a lot...or a small amount?</i></p> <p>Mother - <i>He does, he likes listening to music that he can control, so he programmes his keyboard at home to play music of his choice, so he can select the tracks that he wants to listen to, and he plays with musical toys a lot that play nursery rhyme-type music.</i></p> <p>MT - <i>Yes.</i></p> <p>Mother - <i>Erm and he plays those a lot, it’s probably the sort of toy that he is most interested in.</i></p> <p>MT - <i>Yes.</i></p> <p>Mother - <i>But he does enjoy it when we put music on the stereo, he dances around a lot but we have given him, for his last birthday, a kind of robust MP3 player with speakers and he doesn’t seem actually that interested in that, so I don’t know why that is....</i></p> <p>MT - <i>Not so keen</i></p>	<p><b>Researchers exploratory comments - Descriptive (normal text)</b>  <b>Linguistic (italic)</b>  <b>Conceptual (underlined)</b></p>
<p><b>Particular musical taste – selective and controlled</b></p>	<p>Selective musical taste – control over electrical/ musical toys – gives Paul an opportunity to feel empowered</p>	<p></p>
<p><b>Inconsistent appreciation/ responsiveness</b></p>	<p>Familiar songs provide security and then Paul can engage in enjoyable musical activities</p> <p><i>V coherent/eloquent and clear responses</i></p> <p><u>Parents anticipation of particular responses/ things that Paul will respond to/frustration that there is such inconsistency in his behaviour and reaction to things?</u></p>	<p></p>





The emergent themes in the left-hand column of Table 6.2.1, which arose from this initial analysis, then led to the creation of a new chart for each interview. In the next stage of the analysis these themes are described as superordinate themes, and are illustrated with extracts from the interviews.

The following Table 6.2.2 presents material from one of the parent interviews during this part of the analysis:

**Table 6.2.2 Superordinate themes and interview extracts**

<b>Superordinate themes</b>	<b>Page/line</b>	<b>Key words/interview extracts</b>
<b>Inconsistency in behaviour/ responsiveness</b>		
Inconsistent reactions to parents	1.10	<i>doesn't actually seem that interested</i>
Paul as 'initiator' – parents willing music-makers /interaction partners – but varied responses from Paul	1.21	<i>does enjoy it</i>
Inconsistent vocal/verbal use	3.22	<i>his way of saying "thank you"</i>
Paul's capacity for speech but selective in using it	3.27	<i>used to do that a lot more</i>
<b>Musical taste – Control</b>		
Particular musical preferences	1.11	<i>select the tracks</i>
Selective and controlled	4.25	<i>seems to lose interest</i>
Familiarity with concepts leads to loss of interest	4.26	<i>no real incentive</i>
<b>Effective use of verbal communication when motivated</b>		
Clear communication when attempting to convey information	3.3	<i>if he really wants something he will make a sound</i>

Purposeful use of voice	4.32	<i>he just says “ugh” “Effin” for “seven” he said “Hiya”</i>
Selective and intelligent use of voice	4.14	
	7.31	
<b>Parent’s optimism/understanding</b>		
Acceptance of current communication levels	9.29	<i>he seems to understand</i>
Hopeful for future speech development	8.32	<i>first step towards speech hope join in with the songs speech might come</i>
	8.10	
Positive view of music therapy	10.2	
	10.5	

This process was repeated for each parent interview pre- and post-intervention, so that charts were obtained for all of the interviewees at the start and finish of the project. The pre- and post-intervention interview material was kept separate, so that material from the start and finish of the project could be reflected on independently.

Once superordinate theme tables for interviews with each parent had been produced, common themes were extracted and listed in a master table of themes. This resulted in a master table of themes for the pre-intervention interviews, and a master table for post-intervention interviews.

### 6.3 Results and analysis from the pre-intervention parent interviews

The following chart indicates the master themes for the pre-intervention group of parent interviews:

**Table 6.3 Master table of themes from the pre-intervention parent interviews**

<b>A. Child's musical preferences</b>	
Mark's mother: <i>he responds to the beat</i>	1.8
Kieran's mother: <i>he likes music on the TV</i>	1.6
Remiel's father: <i>he really likes the piano</i>	5.4
Bella's mother: <i>she often kicks her legs as if she wants to dance</i>	1.13
Charlie's mother: <i>he likes bands...so he can hear the instruments in the background</i>	1.8-1.9
Elliot's mother: <i>'Round and round the garden' – he loves that!</i>	1.15
<b>B. Parental desire for child to speak</b>	
<b>1. Optimism for future verbal development</b>	
Remiel's father: <i>He may speak...we really have hope</i>	4.22
Bella's mother: <i>You just pray that they will talk at some point</i>	2.38 – 2.39
Kieran's mother: <i>I want him to be able to talk because it's just essential</i>	2.40
Elliot's mother: <i>He used to say a few words before</i>	3.29
Paul's mother: <i>I wonder if that's his way of saying "Thank you"</i>	1.39
<b>2. Parental frustration about child's capacity to speak but choosing not to</b>	
Paul's mother: <i>He used to do a lot more than he does now</i>	1.41
Elliot's mother: <i>A desire to communicate...he definitely doesn't have that...It's very frustrating</i>	3.25
Kieran's mother: <i>actually desperately wants to talk</i>	2.26
Mark's mother: <i>he can do it, but he doesn't always do that</i>	4.20
<b>3. Parental frustration re lack of communicative ability</b>	
Charlie's mother: <i>He can't get his expressions across</i>	2.21

Mark's mother: <i>I wish that he could just say more words...rather than kicking out</i>	3.18 – 3.20
Kieran's mother: <i>That could have damaged his vocal chords</i>	2.47 – 2.48
<b>C. Child's expressive vocalising</b>	
Kieran's mother: <i>His most expressive sound when he likes somebody – "Ooh"</i>	2.13 – 2.14
Charlie's mother: <i>Baby sounds, like babies sort of do</i>	1.39
Bella's mother: <i>She will still babble to herself</i>	2.9
Elliot's mother: <i>All of a sudden he's very loud and vocal</i>	1.29 – 1.30
Paul's mother: <i>He does a kind of "Uh, uh, uh"</i>	1.35
<b>D. Optimism about music therapy and potential developments/previous positive experience of intervention</b>	
Mark's mother: <i>I think that would calm him down and that's a way of expressing himself well</i>	4.36 – 4.37
Kieran's mother: <i>might also get a greater tolerance for sounds</i>	3.39
Bella's mother: <i>Bella would be riveted with the guitar</i>	4.12
Elliot's mother: <i>I just hope that with music therapy Elliot can sort of, (realise) there is a need to vocalise</i>	3.22
Paul's mother: <i>I suppose our fantasy is that he might join in with the songs</i>	4.7

As can be seen in the table above, the main thematic material that came out of the pre-intervention parent interviews was based around parents describing the range of musical material that their child responded to, their desire for the child to develop more effective communication skills, and their optimism that music therapy may be a factor in facilitating positive change. The interviews were semi-structured (see appendix 4.5.4.1) and parents were prompted to contribute information about their child's ways of communicating in the home environment, their capacity to respond to music and how they felt about their child's communication.

### **6.3.1 Musical responsiveness**

All of the parents indicated that their children loved music and were responsive to particular types of music at home. Most of the parents were able to give clear descriptions of specific music that their children enjoyed listening to or participating in, and this was very helpful in terms of utilising this material in music therapy sessions.

### **6.3.2 Parental desire for improved communication**

The majority of the parents also expressed a desire for their children to communicate more effectively and felt that this would alleviate some of the frustration that the child experienced in not always being able to communicate their needs or express what they were feeling:

*“I wish that he could just say more words...rather than kicking out, having a tantrum, throwing things – just say what you want...and it would be a lot easier. Because when he calms down I say to him, you know, if you can just tell me what you want then I can help you.” (Mark’s mother, 3.18 – 3.23)*

The other source of frustration for parents was when they witnessed the child’s capacity to speak, but then the child chose not to communicate verbally:

*“he used to do a lot more than he does now – he used to be able to initiate them – he could sing them and he’d get that you’d copied something that he’d done a lot – and then he’d do it back, but he’s not doing that quite so much at the moment.” (Paul’s mother, 1.41 – 1.43)*

This evidence that the child was able to speak produced a mixture of feelings in the parent; a combination of optimism that speech might develop, coupled with exasperation that the rate of speech development was very slow.

In contrast to this, some parents were finding that their child had a complete lack of desire to communicate:

*“A desire to communicate, where, I mean, he definitely doesn’t have that, I mean he can shout and he can scream, but he doesn’t have that desire to communicate. It’s very frustrating when you can hear him say words...” (Elliot’s mother, 3.25 – 3.27)*

Although this resistance to interaction is typical of children on the autism spectrum, from a parental perspective it causes huge anxiety and disappointment, with the parent willing the child to seek interactive contact. It is very understandable that this can lead to parents feeling frustrated.

Whilst maintaining realistic expectations, I hoped to reassure parents that I would be working towards developing these fundamental social skills within music therapy sessions during the research project.

In contrast to some children’s reluctance to verbalise, one child’s mother described her son’s real desperation to speak:

*“He desperately wants to talk, yes to find a way. There is of course the question as to what extent his vocal chords have been damaged...but they were looked at through an endoscopy when he was about eighteen months or two, and they said there was movement in them.” (Kieran’s mother, 2.42 – 2.44)*

Kieran’s mother here expresses hope that he will one day be able to develop verbal skills, and that he will be able to overcome his physiological limitations.

### 6.3.3 Parental attitudes to expressive vocalising

Another area of discussion in the pre-intervention interviews was the child's capacity to express themselves through spontaneous vocalising. Some parents were able to interpret this in a positive way, whereby they considered their child was having their needs met by engaging in this type of expressive activity:

*"it goes through patterns where he sort of is really vocal, then he just stops. At the moment he's back into it...yes he's very vocal at the minute." (Elliot's mother, 1.24 – 1.25)*

This was perceived to be a very positive occurrence (apart from when Elliot was noisy at night) and something to be encouraged. Bella's mother actively encouraged her to 'chat' through making spontaneous vocal sounds as an alternative to speech:

*"It's sometimes like she's sort of trying to communicate with me. A lot of the time it's sort of...it's very much a two way thing...I'll talk and she'll talk back to me"*

*(Bella's mother, 2.5 – 2.6)*

Similarly to Elliot's parents, the only time this vocalising became problematic was when Bella was very vocal at night-time, disturbing the family's sleep. Generally Bella's vocalising gave a great sense of satisfaction and joy to Bella's mother, facilitating their mutual communication, which was in contrast to the frustration that the parents of children with ASD seemed to experience as a result of the lack of desire in their children to directly respond to them at times.

Charlie's mother found the lack of development in his expressive vocalising frustrating:

*"Baby sounds, like babies sort of do. That's how I can describe it. It's hard because he makes so many different sounds...I just say it's like when a baby is first talking".*

*(Charlie's mother, 1.39 – 1.40)*

Although this statement appears positive on the surface, the way that his mother expressed this was full of frustration in relation to the lack of speech development that had evolved from these sounds. She went on to say:

*“he's just made the same sounds now for the last six years, I'd say, it's the same sounds...”*

*(Charlie's mother, 2.11 – 2.12)*

#### **6.3.4 Parental expectations for music therapy intervention**

Some parents were full of pride in their children's achievements and optimism for future music therapy in-put. These parents were able to understand the enormous communication hurdles that the child had to overcome to become a proficient communicator, and were prepared to put in the work to assist the child in their progress:

*“and he initiates those with actions, and he enjoys it when we sing those and he clearly shows that he knows when we are getting to various parts of the song, he knows when we're supposed to pat hands, and he knows when we're supposed to be lifting up in the air...”*

*(Paul's mother, 1.22 – 1.25)*

Elliot's mother recognised that although he didn't seem to have the desire to communicate, that music therapy might give him this motivation, and introduce him to the idea of sustaining interactive contact with another individual:

*“I just hope that with music therapy that Elliot can sort of, (know) there is a need to vocalise...at the minute he knows he can...”* *(Elliot's mother, 3.23 – 3.24)*



Some parents whose children I had not previously worked with, but who had attended music therapy sessions with their child in another context, expressed positivity in relation to their child's earlier sessions:

*"Amelia would come and sing her 'Hello' song and Bella would be like (gasps and laughs) riveted with the guitar, there and then, you know, just sort of strumming."*

*(Bella's mother, 4.11 – 4.13)*

Other parents were able to express specific ways in which they hoped music therapy might support their child's social development in the future:

*"I suppose our fantasy is that he might join in with the songs, those sort of things...and that speech might come from that. You know? But I mean that's what we're hoping for in terms of vocalising." (Paul's mother, 4.10)*

Kieran's mother also felt that he might become more adaptable in relation to sounds around him:

*"he might also get a greater tolerance of sounds" (Kieran's mother, 3.39)*

Despite various frustrations in relation to their children's social and communicative abilities, all the parents expressed a positive attitude to music therapy and the ways in which their child might develop over the coming months.

## 6.4 Thematic analysis from the post-intervention parent interviews

The following table presents the master table of themes for the post-intervention interviews:

**Table 6.4 Master table of themes from the post-intervention parent interviews**

<b>A. Child's musical preferences</b>	<b>Page/line</b>
Paul's mother: <i>really likes listening to piano, classical pieces, we downloaded him some Chopin, Debussy</i>	1.3 – 1.4
Mark's mother: <i>he listens to a lot of nursery rhymes on Youtube</i>	1.4
Elliot's mother: <i>he likes listening to L's shuffle desk</i>	1.3 – 1.4
Kieran's mother: <i>quite likes heavy rock</i>	1.4
Charlie's mother: <i>he likes the sound of the drums and guitar</i>	1.13
Bella's mother: <i>radio at the moment</i>	1.5
<b>B. Parental desire for child to speak</b>	
<b>1. Parental pride in progression in speech development</b>	
Kieran's mother: <i>he's working out how to speak more on the out-breath</i>	1.40
Remiel's father: <i>progress is really good</i>	2.28
Elliot's mother: <i>he says "bye" quite a lot, "Mum", "Dad"</i>	1.44
Mark's mother: <i>he's more vocal</i>	2.34
Paul's mother: <i>he also does a "hiya, hiya, hiya" thing</i>	2.12
Bella's mother: <i>she's got a lot of range</i>	2.2
<b>2. Parental capacity to attune successfully with child in relation to speech development</b>	
Paul's mother: <i>he might do an action, and we all join in</i>	1.18
Mark's mother: <i>if I say the word and add '.com' onto it, then he will say it</i>	2.21
Remiel's father: <i>he will repeat after me, you know, then he show us</i>	1.32
Bella's mother: <i>so we shake her hand, and touch her hand, and stuff like that</i>	2.11 – 2.12

<b>3. Parental frustration about child's capacity to speak but selective use</b>	<b>Page/line</b>
Charlie's mother: <i>and then he'll try again, and it's gone</i>	1.37
Mark's mother: <i>I would like him to be more vocal, especially when there's something wrong</i>	1.39 – 1.40
Paul's mother: <i>I wish he did it a lot more. I wish he was really noisy</i>	2.5
<b>4. Child's expressive vocalising</b>	
Paul's mother: <i>He says "Yowee-yowee-yow"</i>	2.17
Mark's mother: <i>He expresses himself a lot more</i>	2.34
Remiel's father: <i>He's always vocalising you know</i>	1.21
Kieran's mother: <i>his kind of interest and wonderment at the world, with "Wow"</i>	1.19 – 1.20
Bella's mother: <i>she got up at 3am in the morning and just wanted to vocalise</i>	1.33
<b>C. Positive parental response to music therapy intervention</b>	
Bella's mother: <i>I think she seems a bit more responsive.....quite often you feel as if she is trying to communicate</i>	2.25 – 2.27
Charlie's mother: <i>He seems to have got more sounds, new sounds, yup</i>	2.30
Kieran's mother: <i>He's definitely become louder!</i>	2.4
Remiel's father: <i>more talking...more verbal communication – yes – word coming out of his mouth – with the music, yes, very good</i>	3.24 – 3.25
Elliot's mother: <i>I truly think that without music therapy – I don't think he would have been getting the "Byes" and the eye contact...his concentration</i>	2.25 – 2.26
Mark's mother: <i>He's more vocal. He expresses himself a lot more...whenever he's upset, if I put music on, it calms him down</i>	2.34 – 2.36
Paul's mother: <i>I think he is vocalising in a more varied way...he listens a lot more, rather than just hearing</i>	3.3 – 3.5

The main thematic areas that arose from the post-intervention interviews centred around the child's current musical preferences, parental desire for the child to speak and communicate effectively, parental pride in successful achievements in relation to communication,

descriptions of the child's free expressive vocalising, and positive responses to music therapy input during the research period.

#### **6.4.1 Musical preferences**

It was interesting to recognise that some of the children had changed their musical preferences during the intervention, as I often have the feeling that children with autism become entrenched in specific musical material (and I frequently find myself repeating familiar songs and playing certain types of music in response to this). This made me aware of a need to attempt to extend children's musical exposure and encourage them to explore new types of music within sessions.

Paul's mother commented that although he still liked to play music that he could control on the keyboard, he had changed from listening to nursery rhymes to exploring classical pieces such as piano music by Chopin and Debussy. It was enlightening for me to hear this, as Paul had remained static in his approach to his own piano playing during this phase, despite listening to different types of music at home.

Mark's mother described his choice of humorous music and his replaying of certain parts:

*“he has a funny sense of humour, it could be like a little noise in a certain tune, he'll keep re-winding it and laughing!” (Mark's mother, 1.7 – 1.8)*

This was a pattern I had observed in Mark's music therapy sessions, where he liked to repeat actions and laughed in response to this repetition, allowing me to join him in the activity if he felt in control.

### 6.4.2 Communication development

Most of the parents felt that their children had made good progress with their communication skills during the research period. Mark's mother spoke proudly about his clear way of communicating how he was feeling: *"he can let you know what he wants"* (2.28), although she still felt frustrated by his lack of use of speech, despite his ability to speak: *"I would like him to be more vocal, especially when there is something wrong."* (1.39)

Paul's mother described the numerous ways in which he now expressed himself vocally:

*"He does this "UEA, UEA UEA" repetitive sound, and kind of variations on that. And he does a "Hiya hiya hiya" thing, sometimes you can get him to say that."* (Paul's mother, 2.12)

Paul's mother generally seemed delighted with his progress in communication. However, there was still a desire from his parents for Paul to use his voice even more:

*"I wish he did it a lot more. I wish he was really noisy."* (Paul's mother, 2.6)

Elliot's parents felt that there was a gradual development in his use of words:

*"I'm sure he does say "Dad", "Tickle"...so I'd say he's probably got around five words – five to ten words...yes and he says "Bag"...and they are loose still...though we do feel that they are the words."* (Elliot's father, 2.3 – 2.6)

Remiel's father felt that his understanding of what they said to him had improved considerably, and that he could now follow their instructions easily:

*"Before he didn't know what we say, but now it's very good. A hundred percent improved!"* (Remiel's father, 2.45)

Kieran's mother felt that he was beginning to make his vocal sounds and attempts at words more clear and comprehensible:

*“Yes, he’s working it out, he’s working out how to speak more on the out-breath. His “Hello” is more on the in-breath, but the rest he’s saying quite nicely.”*

*(Kieran’s mother, 1.40 – 1.41)*

Charlie’s mother continued to feel a sense of frustration about his lack of speech development:

*“I thought if he’d be able to say “Mama”, “Dada”, then he’d be able to say “Dom”, but he doesn’t...” (Charlie’s mother, 1.40)*

However, she said that Charlie’s use of his voice was increasing, and that he was using expressive vocalising *“a lot more than he used to” (1.19)*

Bella’s mother described the way in which Bella was able to communicate her moods through subtle changes in her expressive vocalising:

*“her tone ever so slightly changes, like when she gets off the bus, she’ll suddenly be hungry and want some juice, she’ll start babbling, and it’s almost the same, but it’s really hard, this little undertone, where you can just hear this little change in her voice, and it’s like, oh, that’s not her happy chatty kind of sound.” (Bella’s mother, 1.19 – 1.22)*

### **6.4.3 Parental attunement**

I was struck by most of the parents’ capacity to successfully attune to their children, and the methods by which they communicated. There was a range of different descriptions of methods that they used, both physical prompts and verbal or singing exchanges. For example, Paul’s parents described fun interactive games and exchanges that are similar to those I might use in a music therapy session:

*“He quite often will hum something and we’ll recognise it, and then we’ll sing the song, so it might be something like ‘Baa baa black sheep’, or ‘There were three in the bed and the little one said...’ and it will be very noticeable – he might do an action and we all join in. Or we might spend the rest of the day singing it!” (Paul’s mother, 1.15 – 1.18)*

It was heartening to know that Paul’s parents were so in tune with his musical and communicative needs, and were able to engage him in these types of social activities.

Similarly Mark’s mother was able to tune in to his sense of humour and engage him in a playful way, by taking his humorous approach to verbal interaction:

*“So if there’s a word that he likes, he’ll add .com, yeah, he’s got this massive cheesy grin, I don’t know what that’s got to do with anything, but he seems to like it! But if I want him to say something, if I say a word and add .com onto it, then he will say it!”*

*(Mark’s mother, 2.20 – 2.22)*

This was similar to the approach I took with Mark in my music therapy sessions, as I quickly discovered that the only way to really engage Mark was to tune into his sense of humour, and use the material that he presented to me, rather than trying to engage him through my own suggested activities.

#### **6.4.4 Expressive vocalising**

Most of the parents continued to feel positive about their child’s free expressive vocalising, apart from when it disturbed their sleep at night-time. When asked what type of moods Elliot expressed through vocalising, his mother said:

*“anger, frustration, happiness...yes it’s almost like a constant that he has to do.”*

*(Elliot’s mother, 1.29)*

Paul's mother also described the types of mood that Paul expressed through vocalising:

*"Definitely expresses delight, um...yes, frustration...I think surprise as well, and kind of glee" (1.35 – 1.37)* although she said that Paul would become quiet when he was sad.

Bella's mother was delighted that Bella was so vocal, and said that that was her main way of communicating. It was only an issue: *"when it goes on all night" (1.28)* and Bella and her family were unable to sleep.

#### **6.4.5 Parental response to music therapy intervention**

All of the parents responded positively to their child's music therapy input, and described a range of ways in which they felt that the children had benefitted.

Kieran's mother felt that he had: *"definitely become louder!" (2.5)* and Bella's mother said that: *"I think she seems a bit more responsive...quite often you feel as if she is trying to communicate."* (2.26 – 2.28)

Mark's mother felt that Mark had *"definitely"* benefitted from music therapy:

*"He's more vocal. He expresses himself a lot more. He seems to be listening to music a lot more than he used to, and especially if he likes a song...it still works whenever he's upset if I put music on, it calms him down, that still works."* (Mark's mother, 2.35 – 2.37)

Similarly Paul's mother thought that he had benefitted in several ways:

*"I think he is vocalising in a more varied way, and he's not...I don't know, he just seems more, whether this is linked, he just seems much more keen – he listens a lot more rather than just hearing I think. He really does enjoy listening to music. I've noticed him quite clearly singing nursery rhymes."* (3.5 – 3.8)



Remiel's father expressed delight in Remiel's communicative development and thought that music therapy had been very beneficial:

*"Yuh I think it has...more talking...more verbal communication. Yes – word coming out of his mouth with the music – yes, very good." (Remiel's father, 3.35 – 3.36)*

Although Charlie's mother still had frustrations about Charlie's lack of speech, she felt that his vocal sounds had developed well over the phase of music therapy: *"He seems to have got more sounds, new sounds, yup." (2.32)*

Elliot's mother seemed to feel quite emotional and very positive about Elliot's music therapy input, and went on to secure funding for Elliot to continue with both group and individual music therapy after the project had finished. Both Elliot's parents expressed their positive view of music therapy, and concluded the interview saying:

*"I truly think that without music therapy, I don't think he would have been getting the "Byes" and the eye contact, his concentration..." (Elliot's mother, 2.27 – 2.28)*

*"Yes the one-to-one focusing, you know, I'm sure there is an element of echolalia that goes on at the start of his understanding, but then he's learnt the context of that word, so..." (Elliot's father, 2.29 – 2.30)*

*"Yes and the music therapy is helping to sort of, to get that...can sort all that." (Elliot's mother, 2.31)*

## **6.5 Overview of pre- and post-intervention parent interview analysis**

In the pre-intervention interviews, the parents were all enthusiastic about their children's responses to music and seemed convinced that they would respond favourably to music in therapy sessions. Post-intervention, two of the parents gave greater detail about the

developments in their children's responses to music, for example, Paul's mother described Paul's recent appreciation of classical music in addition to his love of nursery rhymes. This made me reflect on my use of music in sessions and how this might be developed in the future.

Initially the parents expressed concerns and frustrations about their children's communicative abilities, ranging from those who wished their children had more desire to communicate, and those who wanted their children to have the physical capability to express themselves verbally. Post-intervention, there were many positive comments about the way in which the parents felt their children had developed better verbal and vocal skills, with some feeling that words were being spoken more clearly, and some expressing satisfaction that their children were able to communicate their feelings more effectively.

Pre-intervention most parents appreciated the importance of their children vocalising expressively, and this only became a concern when their child kept them awake at night-time. One parent was frustrated that although their child could vocalise freely, this had not developed at all over the previous few years. By the end of the intervention all of the parents seemed to feel that their children had made progress in verbal or vocal communicative interaction, and that they had benefitted from the music therapy intervention.

Pre-intervention all of the parents were pleased that their children were being offered music therapy and felt hopeful that this intervention may help facilitate the development of more effective communication and social skills. This optimism was matched by their positive responses in interviews at the end of the intervention, whereby they all felt that their children had benefitted communicatively and socially from the music therapy input.

## **6.6 Teaching assistant interview analysis process**

Three teaching assistants (TAs) were interviewed at the start and finish of the project. During the course of the research there were some unavoidable staff changes, so one of the TAs was different at the end, which meant it was harder for her to comment on the verbal progress of the child pre- and post-intervention. However, this TA was able to give interesting insight into the communicative levels of the child post-intervention, which I was able to compare with descriptions from the interview with the earlier TA.

There was additionally some time pressure with the TA interviews, as the TAs were expected back in the class within a short period (generally about ten minutes). This meant there was less time for discussion than in the parent interviews.

The same process was carried out with the TA interview material that was carried out with the parent interviews. After transcribing the interviews, Interpretative Phenomenological Analysis was used (Smith, Flowers and Larkin 2009), which again involved writing onto the transcription aspects of the text, which came under the following headings: descriptive (content of what was said), linguistic (how the interviewee presented the material) and conceptual (interpretative, with insight and reflections from the analyst).

The following is an extract of this type of analysis:

(the full interview analysis can be found in appendix 6.6)

**Table 6.6.1 TA interview material demonstrating exploratory comments and emergent themes**

Emergent themes	Original transcript – interview with Nina (TA) for Remiel July 21 <sup>st</sup> 2013	Researchers exploratory comments - Descriptive (normal text) Linguistic (italic) Conceptual (underlined)
Capacity to express himself vocally but often choosing not to	<p>MT - <i>So how much vocalising would you say that Remiel now uses in school?</i></p> <p>TA - <i>Depending on occasions - he can be quite vocal, but it's more kind of unexpected when he does. I would say he's more vocal now than he used to be, yes.</i></p> <p>MT - <i>So would you say a lot, quite a lot, a small amount?</i></p> <p>TA - <i>Kind of average, if that makes sense.</i></p> <p>MT - <i>So it depends on his mood, or how he's feeling, or on what he's trying to communicate?</i></p> <p>TA - <i>Yes state of mind, yuh.</i></p> <p>MT - <i>OK. And is Remiel's vocalising communicative or expressive in the class, a lot, quite a lot, a small amount?</i></p> <p>TA - <i>It's more expressive than communicative. Communication isn't something that really comes naturally to him. He's quite happy to actually stay in one corner of the room, because I'll ask him, kind of thing.... but expressive, yes because I think he does express feelings, through his behaviour, actions, and</i></p>	<p>Increase in vocal interaction</p>
		<p><i>V detailed/informative throughout</i></p> <p>Free expressive behaviour – spontaneous but less in directly communicative way</p> <p><u>Is this difficult in class context – frustrating for staff?</u></p>

<p><b>Remiel drawn into communicative exchanges through desire to express himself – spontaneous vocalising</b></p>	<p><i>um facial expressions as well. Very much through facial expressions actually. And smiling and laughing and...yuh.</i></p> <p>MT - <i>That's interesting because I think of him as being very communicative in music therapy...</i></p> <p>TA - <i>Right OK.</i></p> <p>MT - <i>So he's obviously showing different things in different contexts. Um OK.</i></p> <p>TA - <i>Yes.</i></p> <p>MT - <i>OK. And could you describe the range of moods that Remiel might express through vocalising - well you said laughing....</i></p> <p>TA - <i>Happy. Playful. Um serious - you know that if you look at him with a serious face, he will be kind of looking at you in the same way, what's going on?</i></p> <p>MT - <i>Yes. And what sort of vocal sounds would he make if he was feeling serious, or would he go quiet?</i></p> <p>TA - <i>He stays quiet. He finds vocal....I mean if I made a sound myself he would try to repeat that sound, um....and sometimes he will shriek with a high pitched voice when he gets really excited, you know, because I tend to, when I interact with him I tend to over-do it, and he will respond to that. He finds it very amusing. And sometimes anger.....I have seen him one day actually frustration, that wasn't during music, but again he was at his workstation,</i></p>	<p><u>Remiel 'drawn out' by music – communicative aspect of personality comes to the fore?</u></p> <p>Contrast in Remiel's interaction in different contexts</p> <p>Remiel trying to interpret adult behaviour – good observational skills</p> <p><u>Remiel able to anticipate behaviour/good awareness of turn-taking</u></p> <p><i>Apologetic? Or just emphasising a point?</i></p> <p>Capacity to express emotion clearly</p> <p><u>Remiel responsive to exaggerated communication - drawn into exchanges with encouragement and direction – why does he need so much encouragement? Where</u></p>
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	<i>and he didn't want to do it, he actually picked up a jigsaw and threw them on the floor and went 'Errhhhhh'.</i>	<u>does the resistance come from – control?</u>
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### 6.6.1 Superordinate themes and extracts from interview with TA (Nina) for Remiel

Similarly to the parent interviews, emergent themes arose from this analysis of the TA interviews, which then led to the creation of a new chart for each interview, indicating emergent themes and particular extracts from the interviews illustrating these themes.

The following is an example of this part of the analysis:

**Table 6.6.2 Table of superordinate themes and interview extracts**

<b>Themes</b>	<b>Page/line</b>	<b>Key words/phrases</b>
<b>Capacity to express himself vocally but resisting communicative exchanges</b>		
Spontaneous vocal sounds when expressing moods	1.10	<i>communication isn't something that really comes naturally to him.</i>
Focus on expressive rather than communicative exchanges	1.26	<i>sometimes he will shriek with a high-pitched voice when he gets really excited</i>
<b>Nina's enthusiasm for Remiel's vocal development</b>		
Positive responses from Nina re Remiel's vocal contributions	1.40	<i>he will stand up and start shrieking, I suppose he is vocalising</i>
	2.11	<i>I found it really amazing</i>

<b>Remiel's developing use of speech</b>		
Spontaneous word use in social situations	2.18	<i>yes he's more vocal than he used to be</i>
Remiel very motivated to use speech through song structures	2.28	<i>and he said "Bus" again that was so clear</i>
	2.43	<i>I can see the improvement</i>
	3.10	<i>He has surprised me a couple of times just singing the whole song</i>
<b>Nina's very positive view of music therapy and her music in-put</b>	3.15	<i>I think it does reinforce speech actually</i>
All Remiel's communication skills increased during intervention	3.35	<i>so I do give him a beginning and ending every time we do music together</i>
Nina's descriptions of progress made during her sessions	3.38	<i>smiling, looking into your eyes, waiting for you to sing, interacting with you, smiling with you, responding to you</i>
	3.45	<i>he seems to have a better understanding of language</i>
	4.6	<i>a couple of times he has actually sung a whole song</i>
	4.9	<i>he's shown an ability for language</i>
	4.17	<i>having fun, having a rapport, engaging, and I think I got that</i>
	4.30	<i>he started making choices</i>

This process was repeated for each interview, so that I obtained the same charts for all of the interviewees at the start and finish of the project. I kept the pre- and post-intervention interview material separate, so that I could reflect on material at the start and finish of the project independently.

Once I had collated superordinate themes for interviews with each TA, I then analysed material from all of the interviews to see which of the themes were similar within the group. I then drew out a master table of themes for the pre-intervention group of interviews, and a master table for post-intervention.

The following chart indicates the master themes for the pre-intervention TA interviews:



**Table 6.6.3 Master table of themes from the TA pre-intervention interview group**

<b>A. Child's use of expressive vocalising</b>	
TA Dean for Charlie: <i>kind of like screaming but not</i>	1.21
TA Nina for Remiel: <i>"Ahh" kind of thing, when he's throwing things on the floor</i>	1.34
TA Dana for Elliot: <i>and for happy he's like "Ah-ha"</i>	1.36
TA Dean for Ashraf: <i>just general tone of voice, you can tell if he's happy or sad</i>	1.17
<b>B. Use of music in class context and TAs knowledge of musical frameworks to support social development</b>	
TA Dean for Charlie: <i>it's good for us that he's making noises</i>	1.26
TA Nina Remiel: <i>We were singing 'Old Macdonald had a farm' and he was playing on his instrument, he was following the beat</i>	1.42
TA Dana for Elliot: <i>'Hickory dickory dock' ...it goes with the movements up your arms</i>	2.25
TA Dean for Ashraf: <i>we sing to that sometimes, most of the time he just kind of does the actions</i>	2.28
<b>C. TA positive perception of music therapy and TA music intervention in how it might support language development</b>	
TA Dean for Charlie: <i>if he learns to use his voice, he'll sing...and maybe he'll start forming words</i>	2.6
TA Nina for Remiel: <i>that's why I think he will benefit from it</i>	4.7
TA Dana for Elliot: <i>I'm hoping it will relax him around it (speech)</i>	2.29
TA Dean for Ashraf: <i>help him increase his vocalisation, verbal, because he likes songs</i>	3.3

## **6.7 Thematic analysis from pre-intervention TA interviews**

The main thematic material that came out of the pre-intervention TA interviews was based around the TAs describing the ways in which the children expressed themselves vocally in the class context and how this was generally perceived by adults around them. There were also descriptions of the ways in which music was used in the class context to support the development of vocal and verbal skills. Lastly, the TAs attitudes to music therapy and their own music sessions with the children were expressed.

The interviews were semi-structured (see appendix 4.5.4.2) and TAs were thereby prompted to share information about the children's ways of communicating in the class environment, their capacity to respond to music, and how the TAs felt about the use of musical structures to support language development.

### **6.7.1 Children's use of expressive vocalising**

All of the TAs were able to give very clear descriptions of the children's use of expressive vocalising in the class context. Most reported that although the children had the capacity to express themselves vocally, the ways in which they used their voices were limited when it came to direct communication:

*“angry, his tone of voice lowers...um it's generally accompanied by body actions, but you can kind of, it's just the kind of tone of his voice changes...and then yeah, upset or sad, he will cry, really, and like sometimes he'll say, unhappy.”* (Dean for Ashraf, 1.20)

*“you can see it on his face, he's kind of “Ahh” kind of thing. When he's throwing things on the floor. I can see that it's frustration, you know, I don't want to do it, kind of thing.”* (Nina for Remiel, 1.34)

*“excited and happy is usually giggling and things like that. He’ll sort of go “Hee hee” which is very different from his usual laugh”* (Dana for Elliot, 2.1)

Mostly TA responses to the children’s vocalising was very positive and encouraging, but some raised the issue of loud vocalising in the class context being a challenge:

*“I mean it’s good for us that he is making noises. Sometimes we have to tell him to be quiet.”*  
(Dean for Charlie, 1.26)

The impact on other children in the class context is obviously an issue which does not arise in individual music therapy sessions, so it was interesting to reflect on this concept of TAs encouraging vocalising, but at times having to suppress the child’s opportunity to make vocal sounds.

#### **6.7.2 Use of music in the class context and TAs knowledge of musical structures to support social development**

The TAs generally demonstrated that they were very confident about using musical structures to encourage the children to vocalise and sing. In some of the classes there was regular use of songs to support communication development and provide secure frameworks, and in others music making was extremely limited.

*“we sing to that sometimes, most of the time he just kind of does the actions”* (Dean for Ashraf, 2.28)

*“I have noticed that when we have music in the classroom...we were singing ‘Old Macdonald Had a Farm’ and he was playing on his instrument, he was following the beat, and he was actually, like he knew the song.”* (Nina for Remiel, 1.40)

Some made use of signs and physical movements to enhance communication during singing activities:

*“‘Hickory Dickory Dock’...it goes with the movements up your arms, and then ‘Round and Round the Garden’ he quite likes as well”* (Dana for Elliot, 2.25)

All of the TAs were very knowledgeable about the types of songs that the children responded well to, and were able to use this material to extend verbal and vocal development in the class.

### **6.7.3 TAs positive perception of music therapy and TA intervention in supporting children’s verbal development**

All of the TAs expressed positive perceptions of the potential benefit of music therapy intervention, as well as being enthusiastic about participating in the project. They gave specific examples of ways in which they felt the children would develop:

*“if he learns to use his voice he’ll sing...and maybe he’ll start forming words”* (Dean for Charlie, 2.6)

*“I’m hoping it will relax him around it, um...it’s almost as if it builds up in him and then he does it by accident, almost like it just comes out – it’s like “Ooh I said a word””* (Dana for Elliot, 2.29)

*“I think he maybe will, kind of, loosen up, he will be able to actually be more spontaneous, and because I have noticed actually that he does like music”* (Nina for Remiel, 3.41)

*“I think it will probably help him increase his vocalisation, verbal, because he likes songs, so if he can gain, you know...”* (Dean for Ashraf, 3.3)

It is clear from these extracts that the TAs understood the concept of using music to develop social skills, and that they felt the potential impact of music making would be to relax the child and make them more amenable to social interaction.

## 6.8 Thematic analysis from the post-intervention TA interviews

The following table presents the master table of themes for the post-intervention TA interviews: (interview analysis and transcriptions can be found in the appendices, Chapter 6)

**Table 6.8 Master table of themes for the post-intervention TA interview group**

<b>A. Capacity to express moods through vocalising</b>	
TA Dean for Charlie: <i>if he's upset then it's like an upset noise, like crying or shouting...</i>	1.20
TA Nina for Remiel: <i>sometimes he will shriek with a high-pitched voice when he gets really excited</i>	1.26
TA Joy for Elliot: <i>he uses lots of vocal sounds</i>	1.8
TA Dean for Ashraf: <i>happy, tired, angry, upset, generally excited, that's about all his moods...</i>	1.6
<b>B. Use of musical structures in class to support verbal development</b>	
TA Dean for Charlie: <i>it's a daily routine. Kind of songs that they get to pick from the board, and then they get to sing along to...</i>	1.42
TA Nina for Remiel: <i>a couple of times he has actually sung a whole song</i>	4.6
TA Joy for Elliot: <i>we do quite a lot of singing, every day, a few times a day</i>	2.11
TA Dean for Ashraf: <i>we do music on the board which he will sing along to, and yesterday he was spontaneously singing</i>	1.26
<b>C. Positive developments in child's verbal skills through music therapy and TA music intervention during the project</b>	
TA Dean for Charlie: <i>more co-operative at the end of sessions</i>	2.6
TA Nina for Remiel: <i>he started making choices</i>	4.30
TA Joy for Elliot: <i>he was saying a little bit more, he</i>	3.1

<i>was more involved and looking forward to the sessions</i> TA Dean for Ashraf: <i>now he's even more vocal</i>	1.34
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The main thematic areas that arose from the post-intervention TA interviews centred around the children's capacity to express themselves vocally and developments during the intervention, the use of musical structures in the class context, and the TAs perception of music therapy and TA music sessions intervention.

### **6.8.1 The children's capacity to express themselves vocally in the class context**

Most of the children had increased their use of spontaneous and expressive vocalising during the intervention. Some of the TAs gave detailed descriptions of the children's use of vocalising to communicate a variety of moods:

*"sometimes he will shriek with a high-pitched voice when he gets really excited"* (Nina for Remiel, 1.26)

*"if he's upset then it's like an upset noise, like crying and shouting, and there's also happy, it's kind of shouting as well"* (Dean for Charlie, 1.20)

*"he uses lots of vocal sounds"* (Joy for Elliot, 1.8)

*"happy, tired, angry, upset, generally excited, that's about all his moods..."* (Dean for Ashraf, 1.6)

There was a general feeling that the children had increased their capacity to use their voices in a directly communicative way, as well as in a freely expressive manner.

### **6.8.2 Use of musical structures in class to support verbal development**

Most of the TAs described the ways in which music was used in the class context at this stage, and how the musical structures had continued to support verbal development:

*“Yes it’s a daily routine. Kind of songs that they get to pick from the board, and then they get to sing along to”* (Dean for Charlie, 1.42)

*“We do quite a lot of singing...every day...a few times a day”* (Joy for Elliot, 2.11)

*“We do music on the board which he will sing along to, and yesterday he was spontaneously singing”* (Dean for Ashraf, 1.26)

One of the TAs admitted that they did not have time to do music in the class very much, but that her individual sessions with the child had compensated for this by extending his word use through song frameworks:

*“He has surprised me a couple of times, just singing the whole song...I think it does reinforce speech actually”* (Nina for Remiel, 3.10 - 3.15)

### **6.8.3 Positive developments in verbal communication through music therapy and TA music sessions**

All of the TAs expressed positive perceptions of music therapy and of their own music sessions with the children. They all felt that the children had benefitted from the input, and that social and verbal skills had increased during the course of the project:

*“he seems to have a better understanding of language, like language actually has a purpose, it’s not just a sound. It is a way of communication and exchange”* (Nina for Remiel, 3.45)

*“more co-operative at the end of sessions than when we started”* (Dean for Charlie, 2.6)

*“he was saying a little bit more, he was more involved and looking forward to the sessions, he’d even take my hand, come to the room”* (Joy for Elliot, 3.1)

*“now he’s even more vocal than when we first started”* (Dean for Ashraf, 1.34)

Taking part in the research project seemed to have provided the TAs with ideas for engaging the children socially through music, and it was encouraging to hear that they all felt that the children had benefitted from participating in their sessions.

## **6.9 Overview of pre- and post-intervention TA interview analysis**

The TAs all initially seemed to feel positive about being involved in the research project and described the ways in which musical interaction was used in the class context. In the pre-intervention interviews they also gave descriptions of the ways in which the children were using their voices to communicate and express themselves at school.

Post-intervention the TAs all expressed the opinion that the children had benefitted from both the music therapy intervention and their own music sessions, and that this had supported the children in their social interaction skills and verbal abilities. Two of the TAs gave very detailed descriptions of the verbal and social development of the children they had been working with, whilst one of the other TAs gave more brief descriptions of the progress of the two children he had been working with.

## **6.10 Research diary**

Throughout the project I wrote a research diary, which provided me with a history of setting up the research and recording my thoughts and feelings about the progress and developments over the course of the year. It also provided an outlet for me on an emotional level, as I tended to write more when things were going very well or not so well. The logistical difficulties encountered were emotive at times and it was useful to record these problems,



both out of general interest and in thinking about potential future projects in a constructive way. Similarly it was helpful to think about the particularly successful aspects of the project, and reflect on which elements I would theoretically repeat.

### **6.10.1 Overview of the research diary**

My initial feelings about commencing the project revolved around excitement about getting the project underway, despite some difficulties related to the logistics of teachers releasing TAs to meet with me. The process of selecting the children seemed very straightforward, as the teachers were keen to put forward particular children who they felt would benefit from a social and communicative perspective.

The experience of carrying out interviews with the parents at the start of the therapy work completely changed my perspective on the value of pre-intervention parent meetings:

*‘The parent interviews were a revelation – it has been amazing to commence work with children being completely in the picture about what they are doing vocally/verbally at home.’*  
(November 14<sup>th</sup> 2012)

During week one of the therapy sessions, the TA who had been allocated to carry out sessions with Elliot was replaced. This was very frustrating as I had met with the first TA and explained the project, as well as getting her consent to participate. This delayed the start of the sessions for the child, as I needed to meet with the new TA before she commenced sessions. On top of this there were room availability difficulties, which fortunately were resolved by the following week.

By the start of December the sessions were up and running, and I had videoed all of my sessions, as well as several of the TA sessions. This section of the diary described the contrast between the extreme enthusiasm of the TAs about participating in the project, and

the logistical problems for the teachers in allowing the TAs to leave the class base. These practical difficulties in relation to the teachers' concerns had not been anticipated by either myself or the senior management team at the school before establishing the project. It was very difficult to find solutions, as it would effectively mean terminating the research, so I had to negotiate with the teachers in coming up with practical ways to deal with the issues.

There were descriptions of the TAs responses to being videoed in this period. Understandably some of the TAs were quite self-conscious about the camera and I felt that this affected their interaction with the children. The space left for verbal and musical responses was somewhat limited, as they seemed to feel a pressure to be actively singing or playing all the time.

However, there were descriptions of very constructive discussions with the TAs following the recording of their sessions.

By the end of this term the logistical problems for teachers had eased as all the TA sessions had been recorded, and they were then able to fit in sessions at their own convenience. I described some very productive discussions with TAs at this stage:

*'Nina (TA) is now really keen to spend more time in this role of trying to help children develop communication skills through singing and music – it has surprised her how effective musical interaction is in developing verbal skills.'* (December 18<sup>th</sup> 2012)

By January the sessions resumed again following the holiday break, but another change of TA was recorded which caused more frustration and complication. However, the new TA was full of enthusiasm for the project and knew the child well, so I felt hopeful that this change was going to be a positive one.

The following week I wrote about my preparation for a presentation to staff at the school about the research work. Although I had a mix of feelings about this presentation and some apprehension due to the practical difficulties experienced by the teachers, I generally felt excited about sharing information about the research:

*'(I am) hoping that it will be an opportunity to demonstrate what I am working towards with the children, and a rare chance to show video to a wide audience.'* (January 22<sup>nd</sup> 2013)

My description the following week of the presentation was very positive, with a sense of relief that the teachers had contributed in a constructive way to the discussion:

*'Workshop and presentation went well on Monday and it felt like a very valuable chance to describe some of the research work to staff. Mostly positive feedback and K (teacher) commented that Ashraf's concentration seemed much better than when she had seen video last year. R (teacher) questioned whether the skills developed in music therapy would transfer to the group classroom setting – I said I would reflect on ways in which to quantify this...' (January 29<sup>th</sup> 2013)*

At this stage I wrote of the children's verbal progress in sessions, which with some was very positive, and with others it seemed to take a huge amount of effort to engage them and encourage them to use their voices. I described the way in which my therapy approach had changed in relation to the research work, in order to meet the needs of the individuals and the objectives for the project. Already by this stage I was feeling a sense of disappointment that the work was only funded for the year, and that I would potentially have to stop working with the children in June.

In February I described my feelings about the pressure of being involved in a research project, and the expectations for measurable results. I felt a sense of relief that the methodology was mixed methods, where I could combine the qualitative as well as the quantitative results. However, the pressure to quantify change still weighed on my mind. The contrast between the children who were making clear and relatively quick progress with their verbal skills, and those who displayed more entrenched patterns of communication, was very pronounced. I wrote about my empathic response with the parents, who were feeling frustrated by their child's lack of communicative development.

At this stage sessions had settled into a comfortable pattern, although there had been some disruption to the TA sessions, due to a variety of incidents. One of the TAs was particularly persistent in carrying out her sessions, and the child she was working with was making excellent progress with his verbal development.

At the end of February my music therapy colleague and I did another presentation for secondary staff, which was described in the diary. Although the casework presented was about primary pupils, the presentation was well received, and the written feedback from staff was positive.

At this time I also recorded frustration about the lack of time to meet with the TAs due to time pressures, and the fact that I felt like I was disturbing their break time if I approached them for discussion over lunch.

The following week I described '*A good week!*' (February 26<sup>th</sup> 2013); during supervision Amelia Oldfield had suggested I asked the TAs to record their sessions so that we could

reflect on progress made and their approach. The outcome of this was very productive as all the TAs were willing to carry out the video-ing, and this led to fruitful discussions and feedback. Amelia also reassured me about the quantitative aspect of the research, and encouraged me to record as much information as possible about the general experience of carrying out research. This re-focused my attention and changed my perspective on the project in a very constructive way.

In March I recorded more frustrations with staff changes, but again hopeful descriptions of the replacement TA. I also described the valuable work carried out by the consistent TAs, and their positive commitment to the project:

*‘Joy and Nina have continued to be fantastic to work with – Joy had a really good session with Elliot last week – sadly the video camera didn’t record as we were hoping to watch it, but she will try again this week. The session went brilliantly apparently, and it sounds as if Elliot is responding very well to the intensive interaction in the small room at side of class. He has been saying quite a few words and generally interacting well – “ello” in ‘Hello song’, and “day” in ‘Wheels on the Bus’.’ (March 4<sup>th</sup> 2013)*

I also described video discussions with Nina, so that we could reflect together about our approaches:

*‘Nina and I watched through her video of session with Remiel – she said initially that she didn’t feel that it had gone very well and that Remiel had been less responsive than usual. I noted a few points:*

- 1. Remiel was very well engaged and did some excellent interactive singing and drumming.*
- 2. Nina was more serious than I imagine she is usually...perhaps due to camera? She agreed with this observation!!*
- 3. Nina waits for Remiel to sing the whole song rather than expecting him to intersperse individual words into phrases – I have learnt a lot from this and have been giving Remiel more space to sing whole songs in music therapy...’ (March 4<sup>th</sup> 2013)*

By the middle of March more logistical difficulties for staff to carry out sessions had occurred, but the TAs had generally been persistent in attempting to fit them in.

The music therapy sessions with some children had been extremely exciting in terms of verbal development, and brief overviews of individual sessions were given:

*‘Ashraf is v exciting to work with at the moment – so incredibly engaged and enthusiastic about singing – wonderful!*

*Kieran is also very enthusiastic and really seems to be trying to say words now – will be so amazing if he can develop some speech...’ (March 19<sup>th</sup> 2013)*

During April I recorded on-going responses to the children’s music therapy, as well as communication with TAs, which was generally very constructive when I managed to find a chance to talk to them. Their enthusiasm for the project was striking throughout the research and kept me committed to the work even when logistical difficulties arose. As the end of the project came nearer and I was anticipating video-ing sessions, I started to describe feelings of pressure to achieve measurable results again.

In May I described my reaction to another TA being replaced due to staff movement between classes. This created additional stress for the teacher in having to select another TA for the project. Fortunately one of the original TAs who had been involved was eventually chosen, which meant that I did not have to acquire written permission and explain about the research. More descriptions and overviews of my work with the children were given (which were in addition to my case notes written after each session). Most of these were positive, with descriptions of approaches successfully implemented and consequent vocal and verbal development in the children, although with two of the children the entrenched communicative behaviours continued to be a source of concern.

By the end of May the staff changes and logistical issues had been very concerning, but I was able to hold onto the fact that two of the TAs had worked consistently with the children and were achieving positive outcomes with them in their sessions.

During June the video recording took place, and I successfully recorded most of them. One technological difficulty negatively affected the video results for one child, which was disappointing.

I did experience enormous feelings of relief once all the data was collected, despite sadness about having to finish sessions with some children:

*'it feels like the end is in sight, despite all the video analysis and write-up being impending. I am happy with most of video-ing. Final sessions next wk...' (11<sup>th</sup> June 2013)*

Finally in July I describe interviews with the parents and TAs:

*'Have done two TA interviews and two parent interviews – four parent interviews to do tomorrow. All gone well so far and really great to meet with parents. Some v positive feedback from parents...' (July 15<sup>th</sup> 2013)*

### **6.10.2 Reflections on the use of a research diary**

I found it a very useful process to keep a research diary, particularly as an expressive outlet when logistical problems arose during the project. It is fascinating reflecting now on the process, and recognising that there are aspects of the research which I would have forgotten about had I not written the diary. From a methodological perspective it is also helpful to have this record in terms of selecting methodology for future research, and considering practical implications in a school environment.

Of all the material I have collected I found that this was the most personal, but I felt that this could potentially be interesting for new researchers in terms of the practicalities of setting up an investigation. The feelings of frustration during the process about logistical issues contrasted with the reality that the research work took place despite the complications, and was completed within the set time frame.



## **CHAPTER SEVEN**

### **DISCUSSION AND CONCLUSIONS**

#### **7.1 Introduction**

In this chapter the way in which different aspects of this investigation have addressed the research questions will be discussed. My research will be contextualised alongside material from the literature review, and methodological implications considered. Limitations of the study will be reflected on, with future research ideas presented.

My research questions were:

- i) Can music therapy facilitate the development of effective vocal and verbal skills in young children with special needs?
- ii) If the music therapist collaborates with teaching assistants (TAs) in setting up music sessions for the TA to carry out independently, does this enhance the children's vocal and verbal progression?

The main conclusions from the study will first be considered in relation to these research questions, and more global reflections about the contribution of the study to music therapy will then be set out.

#### **7.2 Main conclusions from the research**

The main conclusions from the research investigation indicated that:

1. There was a gap in the music therapy literature in relation to investigating this type of collaborative working between music therapists and teaching assistants, despite the fact that music therapists frequently work alongside TAs. Although the impact of music therapy intervention for children with autism spectrum disorder, cerebral palsy

and profound and multiple learning disabilities, has been researched (for example, Edgerton 1994, Buday 1995, Detzner 1997, Perry 2003, Whipple 2004, Oldfield 2006a, Gilboa and Roginsky 2010, LaGasse 2014), the effect of this type of collaborative working with TAs in enhancing the positive impact of music therapy on children in these diagnostic groups has not been previously investigated. This gap in the music therapy literature reinforced my motivation to investigate this particular area of my work, and indicates why my research questions were relevant.

2. The video analysis demonstrated that there was a statistically significant increase in the verbal and vocal contributions of the children who received music therapy in addition to TA music sessions. Vocal score results from the video analysis indicated that the children who received additional TA music sessions made more progress in verbal development than those just receiving music therapy. This suggests that music therapy supported by TA music sessions is a successful intervention and that the collaboration between music therapist and TAs enhanced the music therapy intervention for that group of children. This produced an answer to my research question as to whether therapist and TA collaboration was effective and constructive.
3. The use of semi-structured interviews with the children's parents and the TAs pre- and post-intervention, produced an overview of the way in which the children interacted socially both at home and at school. Both the parents of the children and the TAs expressed positive attitudes towards the music therapy treatment and the additional TA support. At the end of the investigation they all felt that the children had benefitted socially and verbally from both types of intervention. This qualitative

material supported the quantitative data, and reinforced the concept of musical interaction supporting verbal development.

The music therapy reports and notes provided additional information about the way in which the children had progressed during the course of the project, also backing up the evidence for the success of the collaborative work.

4. The three main conclusions listed above indicate that the methodological approach of producing a combination of qualitative and quantitative data, provided convincing evidence that the collaboration between therapist and TAs had had a positive impact in terms of the verbal skills development of the children.

### **7.3 Contribution of this study to the existing music therapy literature and to current music therapy practice in schools**

As noted in 2.6.1 there is currently very little literature or research on the topic of collaborative working between music therapists and teaching assistants in schools, although music therapists have previously taken an advisory role in school communities which has involved collaboration with school staff in implementing effective ways to work with individuals and groups once the therapist has left (Rickson and McFerran 2014, Music as Therapy International 2017). Strange (2013) and Schmidt (2004) question whether the issue of confidentiality and the aspect of complex interpersonal dynamics has deterred music therapists from writing about collaborative work with TAs (2.8). The results of my investigation demonstrate that the approach to collaborative work between music therapists and TAs taken in this study can be productive and constructive in terms of the verbal progress of the children. In this context the children were able to adapt to the concept of experiencing musical interaction with both the TA and the therapist.

### **7.3.1 A collaborative approach**

Leite (2002) raises the point of the potential blurring of boundaries when music therapists skill share with teaching staff (2.7), however, I think that there is much scope for replication of musical and singing activities which arise from this collaborative approach. My study demonstrates the positive benefits of this type of intervention, and it is my opinion that these collaborative advantages outweigh the potential disadvantages.

Similarly to Oldfield (2011) I have increasingly felt that taking a multidisciplinary approach to my work and sharing information with TAs has been constructive and beneficial for the children. This is partly due to the music therapy approach that I take in a school context and the client group with whom I work (3.3).

With some psychoanalytic music therapy work it is not always appropriate to share information about individual clients, particularly where there is in-depth exploration of transference and countertransference issues occurring between the therapist and client, and the concept of privacy and confidentiality is crucial to the trust established during the therapeutic intervention (Eschen 2002). Although transference issues may occur in my work, I would generally explore these dynamics within clinical supervision. My music therapy approach focuses on specific non-musical objectives, and progress occurs through improvised music making and involvement in singing exchanges. The nature of my work with children with severe disabilities means that there are many elements that can easily be transferred to other contexts. I therefore take an approach which I feel best responds to the individual needs of the children, and this involves sharing information about the music therapy sessions and collaborating with TAs in order to enhance verbal and social progression. The benefits of sharing music therapy concepts are so constructive for the children, that they override the need for complete containment within the music therapy setting. Any information which is

communicated to staff is carried out in a sensitive and appropriate manner. This investigation demonstrates that in the school context and in work with children with limited social and communicative abilities, the effect of TAs working closely with music therapists can enhance the children's verbal development.

This research is therefore important as it provides a different perspective on collaborative working and skill sharing, in comparison with some of the existing music therapy literature, which might indicate that music therapists should adhere more strictly to maintaining restricted boundaries to therapeutic intervention. Similarly to Twyford and Watson (2008) I advocate taking an open and constructive approach to collaborative working with other professionals in work settings, where this is appropriate for individual clients.

My perception of the way in which the TAs utilised the stability of the relationship that they had with the child to promote positive change was that this was socially and communicatively beneficial for the individuals concerned; Strange (2013) found that 'the LSAs' unique knowledge of the students remained a valuable resource' (2013, p.5) which could helpfully influence the course of the therapeutic intervention, and this was also my experience during the research project.

### **7.3.2 Promoting speech development**

Edgerton (1994) investigated the use of pre-composed and improvised music in developing social skills in young children with ASD, and her work was examined in more detail in section 2.2.2. In my research work I used a combination of musical styles, both improvised and pre-composed, but with an emphasis on the use of pre-composed songs to support language development. The implications from Edgerton's research were that musical interaction could increase social skills in children with ASD, but that in the one session where she used pre-composed music there was less social engagement from the children. In

my experience it depends on how the therapist presents the pre-composed song material, which then affects the way in which the child responds. During my research I noticed that the children in my study were particularly responsive to familiar song material, and that it provided a secure framework for them to experiment with vocalising and exploring verbal exchanges. I did, however, have to make the song material ‘improvisatory’ and engaging in order to sustain the attention of the child.

Research previously carried out with children with ASD which appears to be most similar to the concepts behind my approach to verbal development in children is that of Lim (2012). The descriptions Lim gives of the way in which she uses these songs is very similar to the way in which I have used songs in my sessions; for example, repeatedly leaving out the last word in a song phrase so that the child can fill it in, which can be an effective way of extending children’s speech development. Once the children are secure in filling in one word, they can then be encouraged to contribute more as their confidence increases. This coupled with free expressive vocalising as part of improvisatory exploration, enhances the potential for vocal and verbal development.

The difference between the type of song structures that I was using in my research project and the musical material that Lim (2012) used in her project is striking. Lim used rhythmically and melodically complex song structures with particular linguistic content that she wanted the children to learn to sing, whereas I used simple and familiar tunes that I felt were accessible to the children. I found that the most effective musical material for supporting language development was simple predictable songs which were familiar. It is notable that both Lim’s use of complex song structures and my use of simpler song material proved effective in facilitating language development in both research investigations.

Kalas (2012) looked into the use of simple versus complex musical material with children with ASD, and found that children diagnosed with severe ASD responded best to simple musical material, and that children with a moderate disability were more responsive to complex musical structures. Consequently predictable harmonic structures and ‘even blocked chords’ could provide easily accessible music for severely disabled children, and music with varying styles, complex rhythmical patterns and syncopation could keep the more able children engaged. This concept would seem to fit with my research in which the children were all at the severe end of the autism spectrum, or had very limited communicative skills relating to profound disabilities.

One very rewarding aspect of music therapy work is in facilitating increased communication in children, and particularly through the sense of releasing verbal and vocal expression. This study quantifies the potential for musical interaction to support language development, as well as providing qualitative evidence to support the data. As noted by Wheeler (2000), there can be a feeling of exhilaration in sessions with young children with special needs when they are clearly developing communicative and social skills. Hearing a child utter their first few recognisable words can be an exciting experience, and the development of verbal skills can be crucial to successful social interaction for the individual.

At the point that I chose the topic of vocal development I had not previously considered just how much I use my own voice in music therapy sessions. As a result of the video analysis I made the same discovery that Oldfield (2006a) made, in that I could see that I was using my voice for a large proportion of each session. There has recently been a surge of literature in relation to the topic of songwriting in music therapy (for example, Baker and Wigram 2005, Baker and Uhlig 2011, Baker 2015), and the effect of the client exploring their voice from a social and emotional perspective, as well as the power of the therapist’s voice in affecting positive change.

During my research I had the expectation that the TAs would instinctively use their voices confidently in their own sessions with the children, without questioning whether they would have the capacity to do this. In reality the TAs were generally able to do this very effectively and naturally, although one TA unsurprisingly seemed to feel quite inhibited when being filmed. The TAs capacity to use their voices and stimulate verbal and singing interaction in their music sessions was instrumental to the development of the children's verbal skills.

#### **7.4 Reflections on the success of the collaborative approach**

There were many advantages to collaborative working between therapist and TAs, which led to the children developing more effective vocal skills during the research period. In my experience TAs were able to successfully carry out singing activities and musical exchanges in their music sessions, although the more complex instrumental interaction was difficult to duplicate (except where the TA had specific musical abilities, as was the case with Joy, Elliot's TA). Although I was not necessarily intending the TAs to work in exactly the same way as me, the TA music sessions could become slightly repetitive without the creative freedom of instrumental improvisation. In the situation when the TA did not have musical skills, it was still possible for them to keep the attention of the child for the majority of the session through singing and basic rhythmic and melodic exchanges, and this facilitated the development of social and verbal skills. The success of these interactive musical techniques implies that TAs should be trained in these types of exchanges in order to support verbal development in children in schools.

Several aspects of the collaborative approach will now be considered.



#### **7.4.1 Sharing of information about children's behaviours in class and therapy setting, and awareness of the transfer of skills**

Hearing about the children's behaviours in the class setting was one of the benefits of collaborative working with the TAs; I was able to put the children's behaviour in the therapy setting into the context of behaviour in the wider setting. For example, with Remiel, Nina (TA) informed me that he had been playing with a jigsaw one day in class alongside Nina. He had been absorbed into the activity, but suddenly looked up and started singing one of the nursery rhymes that we had been singing in music therapy. As it was unusual for Remiel to use his voice in the class setting, this was positive evidence that the singing we were doing in music therapy was transferring to the class setting. This information was communicated during one of our follow-up meetings, when Nina was reflecting on her own experiences of carrying out music sessions with Remiel, so I might not ordinarily have become aware of his singing in the class context without this co-working.

The other important aspect of shared working was that I sometimes became aware of the child responding differently in the TAs music session, and this gave me ideas to incorporate into my own therapy sessions. For example, I realised that Joy was limiting the number of musical instruments that she made available to Elliot in his music session, and that this made him focus better on the interactive play as he was not distracted by the range of instruments available (5.2.4).

Nina used a microphone in sessions, which made Remiel feel excited about exploring a range of vocal sounds and this gave me ideas of activities to carry out in our sessions. On observing Nina's sessions with Remiel through video material, I recognised that because of Remiel's established relationship with Nina, he was initially more confident about using his voice in her sessions. Once I had seen Remiel's capability for using his voice in Nina's sessions, I was

able, over time, to encourage him to do the same in my sessions. This led to increasing vocal and verbal progression as the intervention went on.

These examples of the collaborative approach clearly demonstrate the ways in which information can be shared between staff in the class context and the therapist, and the benefits of team working in this way. Through the TAs raising awareness of the children's behaviour in the class setting, the therapist can work with a clearer picture of the child's overall development, rather than based just on what is occurring in music therapy sessions. Similarly, the therapist relaying information to the TAs about the child's behaviour in the music therapy setting enabled the TAs to follow up and reinforce ideas in the classroom.

#### **7.4.2 Therapy work becomes more integrated as part of the child's general school experience**

A more cohesive approach between TAs and therapists can lead to the therapy session feeling more integrated for the child. For example, if the therapist and TA are taking a similar approach to responding to certain behaviours, the child will experience this as more consistent and gain a sense of security. Collaboration between therapists and TAs (and teachers) can enable this to happen in a constructive way, with a two-way exchange of ideas, which meet the child's individual needs at each stage of development.

In addition to this, collaborative work can strengthen the role of the music therapist in the school setting, which has been evidenced by the fact that the music therapy post at Castle School and Green Hedges School (which Castle School evolved from), has been established for twenty years. As a result of this investigation it could be argued that music therapy training courses should prepare students for the concept of collaborative working in a range of work settings, in order to maintain their employment and work most effectively and in the best interests of their clients.

#### **7.4.3 The therapist feels more involved in the general life of the school and is working towards shared objectives**

My experience of close working with the TAs was that it resulted in me feeling more involved in the general life of the school, as I was better informed about the children's progress in other areas. Information that was discussed with TAs was fed back to class teachers, so there was greater coherence. One of the additional positive consequences for the music therapist taking this approach is that they feel more attached to the working environment and colleagues, which can lead to less risk of professional isolation. When a therapist is working for a short period of time in a school setting, for example, a few hours or one day, it is easy to feel isolated within the staff team. This type of collaborative work can provide an effective way of reducing this sense of separateness from the team, and create a shared sense of purpose, where the children's needs are the central focus.

#### **7.4.4 TAs and therapists can pool resources and ideas**

The TAs and I used similar song material in sessions and this provided continuity for the children in supporting their language development. I would imagine that in the longer term, with this type of liaising, other resources and ideas could be used simultaneously in the class and therapy environments. After liaising with class staff I have often previously used PECS boards in sessions, which can support children in confidently communicating choice making.

The TAs who took part in the project reported that it was an enjoyable and constructive process, and one TA informed me that she had continued to use the musical interaction concepts in the class following the conclusion of the research.

#### **7.4.5 Regularity of communication between TAs and therapist**

Whereas officially I would generally discuss children's behaviour in scheduled meetings with teachers and TAs, in reality due to the time constraints of teachers and TAs these meetings can take place on a more random basis, according to whom I have access during the day. The research project formalised this interaction and regular weekly meetings with the TAs were established. The positive analysis results of the children's verbal development due to the collaboration between therapist and TAs demonstrated that this type of liaising can be valuable and productive.

#### **7.5 Limitations of the study**

There were a variety of factors which limited the scope and reliability of the research, and I shall now reflect on these limitations within different categories.

##### **7.5.1 Small scale**

The funding for this project allowed for one day a week of music therapy for the duration of one academic year, which meant that the research work had to be carried out within this time frame. This limited the scale of the project and meant that I could only incorporate a small number of children in the research. However, this was in some ways compensated for by using boot-strapping techniques in the statistical analysis of the video analysis data, which produced probability values of similar work with a larger number of children.

##### **7.5.2 Additional in-put for children during the research period was unknown**

Another aspect of the research which limited the reliability of the results was that each of the children had variable amounts of additional intervention at the school, so that it was difficult to isolate the verbal progress the children made and relate it entirely to music therapy and TA intervention. It would have been unethical to limit the children's access to these other forms

of intervention during the research process. However, the qualitative findings from the research seemed to support the quantitative evidence that the children's vocal development was linked with the music therapy and TA intervention.

### **7.5.3 Interview process**

I carried out all of the interviews with the parents and TAs myself, which could be perceived as a weakness of the study as the parents might have felt that they should respond in a particular way. However, I felt that despite carrying out the interviews myself, the parents gave honest and reliable responses to the questions.

### **7.5.4 Staff changes**

Complicated logistical issues for teachers led to staff changes during the course of the research, which meant that some children worked consistently with one TA and others had changes of TAs. Fortunately the staff changes occurred more during the first few weeks of the project, and the TAs who took over consequently had a good length of time working with their children.

### **7.5.5 The range of diagnostic groups**

Most music therapy research work has been carried out with children from one particular diagnostic group, for example, autism or cerebral palsy (eg. Oldfield 2006a, Kwak 2007, McFerran and Stephenson 2010). Selecting children from a particular age range in a special school where academic and social abilities were extremely wide-ranging, meant that the particular needs of the children were highly individual and variable. It was still possible to quantify social development in relation to their individual needs, but the amalgamation of verbal contributions pre- and post-intervention would possibly have been more conclusive

with children from the same diagnostic groupings or within the same communicative ability level.

#### **7.5.6 Quantitative results were based purely on vocal scores rather than overall social development**

The statistical analysis of the video data was based purely on the children's vocal scores, so that although social development in other areas in relation to objectives for sessions was measured, these results were not included in the analysis. Further analysis of development in other social areas could be carried out in the future.

#### **7.6 Modifications to my approach based on the data and future research plans**

The outcome of the research provided impetus for future modifications to my music therapy approach, and also creates implications for other music therapists working in schools and trainee therapists. During my research I valued the contact that I had with the parents pre- and post-intervention, and it made me reflect on the importance of including families in the music therapy work (even though they were not attending sessions). I found the transcription and analysis of the parent interview material (6.2) very enlightening, and I feel that this will shape my practice in the future. The concept of accumulating an overall picture of the child's behaviour based on parental feedback at the start of therapy was different to the way in which I had worked prior to the research, and retrospectively seemed essential to the way in which I view the child's behaviour and communication patterns. In addition to this I have become aware of the potential positive impact of parents following up music and singing activities in the home environment.

Carrying out this research has made me reflect on the musical content of my sessions and has fuelled my interest in examining the types of music that I use with the intention of extending

verbal skills. Exploring music therapy literature on the topic of the use of rap music (Uhlir 2011) and teenage centred music (Derrington 2012) has made me reflect on the type of songs I use in music therapy sessions, and their relevance to my particular client groups. Although I have not focused on the musical content of my therapy sessions as part of this research, it is an area I would like to explore in the future. Although there is some music therapy research and literature focusing on the analysis of improvised music (for example, Lee 1990, 2000), there is less research focusing on musical material used for children with special needs and the potential for combining composed songs with improvisation. There is therefore a general need for music therapists to create more literature and carry out research in relation to this topic.

Furthermore, I have not previously investigated in detail the impact of the different musical components within the songs which I was using. Buday (1995) explored the effect of rhythmic and melodic components on speech development, finding that using purely rhythmic support for children developing language skills was less effective than using complete musical intervention. Although the rhythmic component of song is clearly essential, during my research I noted that the melodic line, with the possibility of anticipation, build-up and flow is what provided the encouragement for the children to respond vocally to songs. Ideally both rhythmic and melodic components should be used and it is challenging to separate out the effectiveness of individual musical characteristics, however, I would be interested to conduct a further study into examining these two components.

An analysis of song material which could potentially be used with young children in order to promote verbal development could also be a useful further study, which would provide accessible material for use by TAs, teachers and therapists during collaborative work.

This research has provided a possible model for further investigations which could be carried out on a larger scale. This would provide more conclusive evidence of the potential impact of music therapists working collaboratively with teaching assistants. Similar research could also be carried out in other environments, for example, children's centres or residential homes, with children and adults in a variety of diagnostic groups.

As I have also worked alongside TAs running music therapy groups over the last twenty years, it would be useful to further explore collaborative working and skill sharing in this context, and investigate how joint working can support children in their social development with a transfer of skills to the class context.

I plan to carry out further writing and publications in the future, about the use of vocalising and singing to promote verbal development in children with special needs, and in relation to collaborative working in schools.

My research has been presented at UK and international conferences, as well as locally to staff at the special school and music therapy students. There has already been interest in developing a larger research network in relation to future investigations into collaborative work and verbal development, arising from the European Congress in Austria in July 2016.

In addition to this it may be possible to establish a research network within the music therapy team at Cambridgeshire Music and in conjunction with Anglia Ruskin University. The positive results from this investigation into the effects of collaborative working in schools have inspired me to carry out further research into this fascinating topic, and I look forward to generating more literature and discussion within the music therapy profession about the potential for this type of joint working.



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