UNIVERSITY OF SOUTHAMPTON

FACULTY OF SOCIAL AND HUMAN SCIENCES

<u>School of Education</u>

Introducing Music Therapy Techniques into Early Years Special Needs Education for Young Children with Autism in China

by

Li Hao

Thesis for the degree of Doctor of Philosophy

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<u>ABSTRACT</u>

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INTRODUCING MUSIC THERAPY TECHNIQUES INTO EARLY YEARS SPECIAL NEEDS EDUCATION FOR YOUNG CHILDREN WITH AUTISM IN CHINA
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This research thesis explores the introduction of a musical intervention (Developing Communication Through Music, DCTM) for young children with autism in China. The intervention was designed to combine techniques from both music therapy and Intensive Interaction in order to support the development of children whose social communication and social abilities are impaired. There is evidence about the effectiveness of both these techniques in the UK and other countries, but no such evidence in China. This research therefore represents the first systematic exploration of an intervention combining music therapy with Intensive Interaction in the cultural context of China, where these techniques are rare and where teacher training for autism is under-developed. Using the established principles of action research this study aimed to explore how DCTM musical intervention could be implemented within the current educational system in one community centre.

The action focused on the introduction of DCTM in two cycles, first with the DCTM implemented by the researcher (a music therapist) and the second implemented by local staff. The goal was to improve understanding of how music can be used to help young children with autism in tandem with brining about beneficial change for young children and the adults communicating with and teaching them. There were multiple methods used when collecting data, the most important of which included video recordings, field notes and reflective journals regarding key children, which were all systematically analysed in relationship to the learning for the children and staff. Video recording and informal discussion were the main methods based on the merging principles of Nordoff- Robbins and Intensive Interaction.

The young children with autism responded differently to the methods and approach of DCTM in this project. In particular, the children responded better in cycle 1 than in cycle 2. Upbeat music had a particularly positive impact in terms of social communication and sharing attention. The researcher and local staff faced considerable challenges when incorporating the new techniques into their daily teaching. The findings indicate that participating teachers need more help to develop musical and intervention skills and make the necessary micro-adjustments needed to engage and hold the children's interest. Additionally, teacher training would need to incorporate relevant DCTM competencies. If this can be achieved, then more children with autism, or children with similar difficulties, could benefit from DCTM. The action research process, findings, and supporting data, suggest that the local educators may be positively influenced by this innovative method.

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Academic Thesis: Declaration Of Authorship

I, **Li Hao**

declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

Introducing Music Therapy Techniques into Early Years Special Needs Education for Young Children with Autism in China

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

Signed: ....

Date: ....

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Chapter 1: Introduction

1.1 A preliminary description of the research study and background

This study is an action research project aiming to explore the introduction of music therapy techniques in developing spontaneous communication social skills (imitation, initiation, turn-taking, social interaction) of young children (aged 4-7) with autism in the North Eastern region of China. Music therapy has been used previously with young children, exploring the calming effect of music to facilitate speech and language development (Marley 1984). Although there is a broad literature covering the application of music therapy in clinical practice, there is an absence of empirical research from special needs education settings in developing countries.

Music therapy has been reported to be beneficial in the development of social skills of children with autism (Bunt 1994). It has, therefore, been the aim of this project to examine the specific role played by music therapy in the special educational teaching process in a setting where special education for children with autism is relatively new (Cassity and Cassity 2006). The impact of music therapy on communication building for children with autism is thought to be stronger than other musical interventions, such as Orff, musical education (Brusica 2005). For example, in order to communicate, during the sessions, music therapy routinely sets up an environment in which there is always something to communicate for and with, that does not divorce language from valued and meaningful contexts. However, given the lack of music therapists in China, an additional challenge is that non-music therapy professionals would need to adapt the music therapy techniques in special education settings, to match the needs of young children with autism. Therefore, the feasibility of reframing music therapy as an intervention to be implemented by personnel not trained in music therapy needed to be explored.

In this introduction I provide some core context in relation to autism, music therapy and special needs education, as these are important for this study. I clarify how each is conceptualised both generally and specifically in special education in China. Within the western academic literature, autism is generally defined as a developmental disorder characterized by impaired social and communicative development and restricted interests and activities (Lisa 2008). However, Donna Williams (2007), writing as an insider, argues

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autism is not one condition and hence there is no one-size-fits-all approach which will best fit all people diagnosed with autism or ASD. As an autistic person, she argues that autism is an umbrella term, which covers on-going collection of autistic responses. The National Autistic Society in the UK (NAS 2003) describes autism spectrum disorder as a lifelong development disability that affects how a person communicates with and relates to other people. It also affects how they make sense of the world around them. In China, autism has been recognised officially for fewer than five years. Some doctors defined autism as 'zi bi zheng', which means lonely syndrome (Office of China's Disability Union and National Statistics Institute 2008). General education teachers in China have been reluctant to include children with autism in their classrooms because of their lack of knowledge regarding such students' characteristics and learning styles (Xu 1995).

Music therapists, Nordoff and Robbins (2007), believe that people with autism spectrum struggle to make sense of the world and people, so that relating with them often means suffering anxiety and it is difficult to build and maintain social relationships. Looking to music to help, Trevarthen and Schögler (2007) found benefits in engaging in music making, particularly via the musical interaction. Using music is all about communicating, but not with words, to match the nonverbal communication needs of people with autism.

In the field of music therapy, research literature and research on clinical case studies have reported that the use of improvised music in a 'client-centred' (Rogers, 2003) individual treatment setting has a wide set of therapeutic effects on individuals with autism. While engaged in improvisational techniques with the therapist, individuals with autism respond to music often with increased attention, motivation and affective expression and children engage themselves in structured interpersonal activity more steadily through the musical forms (Alvin, 1978; Nordoff& Robbins, 1971; 1977). Furthermore, music therapy in early intervention involves setting specific goals for each target child. Because of predictable routines, structured teaching and visual cues, this is an effective ways of allowing children with disabilities to improve their skills and use their strength to act independently in the childcare/pre-school programme, particularly children with autism.

The subject of music therapy is relatively unknown in the area of special education in China. Therefore it is hard to find out the views of Chinese music therapists about autism. As a rare Chinese professional music therapist, based on my professional experience, I believe that

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children with autism present challenges to work with universally and even more so in China currently. This is because of issues of cultural background, social recognition, professional trainings as well as lack of knowledge on music therapy and autism in general. In this study, the main challenge was adapting music therapy for children with autism in early special education in China. In summary, there was an obvious role for me to explore applying music therapy techniques in special education in China. Music therapy is recognised as an approach in teaching children with autism worldwide. Music and music therapy can encourage people to embark on new actions and therefore, it is an important factor in social change. This is also a crucial perspective of music that it is not bound to a specific culture; instead music therapy can support various forms of music improvising projects and the use of music in many different cultural settings (Kim et al. 2008). Therefore, I saw the importance of researching how music therapy techniques can be introduced to benefit the communication development and educational experiences of younger children with autism in my home region of North-Eastern China. Furthermore, it would be important to find user-friendly music therapy techniques and approaches for non-music therapist and professionals to use in the context of early special education in China.

In particular, I have been interested in applying ideas from the Nordoff-Robbins music therapy approach for the purposes of this research study. Nordoff-Robbins has been defined as an approach to creative music therapy based upon the belief that an inborn musicality resides in every human being that can be activated in the service of personal growth and development. This music therapy approach was originally designed for handicapped children (sic) (Nordoff and Robbins 2007). Music therapy is a type of treatment for all ages and all types of clients (its term used in music therapy) that uses musical methods or activities to meet non-musical goals in general. Nordoff-Robbins music therapy has been used successfully worldwide, including their unique music and techniques (Wigram et al. 2002). In this form of co-creative endeavour, clients (as music therapists call them) take an active role in creating music together with their therapists on a variety of standard and specialized instruments. Because instruments can be chosen which are expressively gratifying yet do not require special skills to play, no prior experience or training in music is required of the client. It worthwhile mentions that the principle of Intensive Interaction approach is child centred and children or adults do not need any special skills to interact with the Intensive Interaction practitioners.

To complete the background picture, I need to highlight that great attention has been paid in China to the development of Chinese special education within the last thirty years. After 1949 when the People's Republic of China was established, Chinese education started from the ground, but it was not until the late 1970s that people started to pay attention to special education (Zhang 1993; Zhao et al. 1997). In the 1990s, the most important educational laws, the Compulsory of 9 years education law was announced and different types of educational programmes for children with disabilities were encouraged. This legislation was a milestone in China's special education development (Deng and Manset 2000). In accordance with this law, the Chinese education department tried to provide educational opportunity for all students with disabilities. However, children with autism are not explicitly included it (Ministry of Education 2001). Similarly, music therapy does not appear in any documentation as of yet.

My concern in this doctoral study has been how I could introduce music therapy to special education in China and whether the Nordoff-Robbins approach, that includes songs, techniques and music therapy frameworks, would work as effectively for children with autism in China as they do for children with autism in western countries. Combining with the Intensive Interaction parameters may be the better way for introducing these techniques.

1.2 Personal and professional context of the researcher

As a classically trained musician and University teacher, I am very interested in helping people with special needs through music. I wanted to learn how to use music as an enabling tool or treatment, especially how musical elements could work for children with autism. Would musical elements work for everyone in the world?

My journey searching for the answers started in 2007. I first discovered music therapy when my professional training began in England. It was a beautiful autumn day, and my friend and I were hiking while listening to the radio. Suddenly, there was a news story that stopped me from walking. The BBC reporter said something like: "A seven year old autistic boy's life has been dramatically changed in a positive way, after half a year's music therapy treatments in Cambridgeshire." All the family members who spoke were in tears. His mother was relating this along the lines of "My boy is a gift for the family and he was verbal and talented with art, but everything suddenly stopped when he was four and half years old. I was frustrated by his non-responding behaviours with calling his name and lack of conversation with family

members. We took him around seeking help until we found a research centre in Cambridgeshire. Amazingly after half a year of music therapy treatment, my boy was back, he started to respond." This became a big question in my mind: "What is music therapy?" Since this day, I have paid a great deal of attention to research articles related to music therapy and autism and have kept myself up-to-date with the progress of music therapy in western countries. Very often I thought children are lucky because they are born in western countries, as these countries have superior treatment available for children with conditions such as autism. Currently, music therapy in China is still a relatively unknown area. Even many medical professionals and special educators are unaware of music therapy.

In 2009, when I began the music therapist training on which this research is based, I was confronted with my past professional work, which started in 2000 after I graduated from the Conservatory of Music, Shenyang, China and became a qualified music teacher. I started to ask myself some questions and one of them was what had I been doing all those years. Was I doing a music therapists job with my music teacher's hat on? Did I understand the distinction between music therapy and music education? Did I need to make a change or to continue on the same track? If a change was needed, what kind of change would most benefit me and others?

There were feelings evoked after I took music therapist professional training. For example, in the music therapy session with the boy who, when playing the drum with his struggling arms said, 'this music doesn't fit into me', or my friend who, when struggling with note reading, declared, 'the keys are blocked.' I recalled the little three-year-old who said, 'when I feel sad and I hear raindrop sound I want to cry. When I feel good and I hear this it is like God is sending it to me.' There were many more. The most significant, eye-opening moment was learning of a phenomenal story from Australia of a four-year-old boy who, it was said, had successfully controlled his autistic behaviours and managed to do mainstream pre-school tasks perfectly (2009 leaflet). The boy was diagnosed at two-and a-half years old, his parents were frustrated by his behaviours of hiding himself at the back of the door, underneath the table or curling up behind the piano with non-verbal responding. When he was referred to the Golden Stave Music Therapy centre at the age of three, he was not interested in any of the instruments, which were displayed on the shelf, but he preferred to huddle up behind the piano. As soon as he felt the vibrations when the piano was played, he started to look around. At first, therapists were not very successful in finding a way of connecting with him.

The first breakthrough was when the boy blew the reed horn with a loud sound. The therapists then played another reed horn, sang the beats while the boy blew the reed horn. After doing this for a short while he suddenly stopped, looked up and laughed - a vocal production. At the following session he was humming to accompany therapists playing. After ten session's therapists found that he could sing spontaneously with therapists playing the gaps, thus he had a further musical choice in his small repertoire – singing or playing. The music therapist was well prepared and invited him to play naturally, this along with flexible therapy techniques and appropriate entrance music engaged and enthused the boy. Music and creative musical communication filled a gap for him. This showed me that music therapy's most important feature is the central position of music for the quality of relationship development between children with autism and therapists.

1.3 Purpose, aims and research question

The purpose of this study was to explore the impact of music therapy on early special needs education in China for young children with autism. I chose action research for this study as it is a powerful tool for change and improvement (McIntosh 2010). The process of identifying a problem, planning an intervention and evaluating the outcomes (McNiff and Whitehead 2006; 2010) allows for ownership of both the process and changes. This research action would focus on the introduction of music therapy techniques and the research goal was to bring about an improved understanding of how music therapy can be used to help young children with autism in tandem with bringing about beneficial change for the young children and the adults communicating with them and teaching them. Thus, I would need to explore ways to bridge the gap between the actual needs of children with autism and the special education curriculum limitations using music therapy techniques as modelled by (Corke 2002). I began from the position that this project was very likely to impact on the spontaneous communication and competence in social interactions of children with autism if I was successful in managing to combine music therapy, Intensive Interaction principles, and other musical interventions to develop new teaching approaches. In addition, I hope that the educational values of music therapy, be integrated into the local special needs schools provision, planning and reporting systems with internal training for staff (as advocated by Oldfield,2006).

This action research project was worth embarking on because I saw that it could facilitate insight and inspiration for practitioners in the special education field. In addition, as

researcher and practitioners allies we could gain an increased understanding of whether and how music therapy can effectively address the needs of Chinese children diagnosed with autism. As autism has been recognised by the Chinese government only very recently, this study had potential to affect government agencies and civil society organizations in terms of social response. I need to design the study to help show how the educational opportunities for young children with autism in China could be enhanced, and what benefits and challenges might arise in adapting music therapy techniques for use in the classroom. While this was daunting, I saw the potential benefits as justifying the effort required.

All intervention programmes emphasise the most important goal of their programme, in this case, to teach children with autism how to communicate via music and musical activities, in order to improve their social and communication ability. Action research would provide greater flexibility to refine my practice in an on-going way responsive to educational needs and findings. This study was to be conducted within an educational setting, with music sessions introduced within a local special school, and involve individual children with autism and special school teachers. I wanted people, including myself, to understand and explore the impact of music therapy techniques on the social and communication development of young children with autism in China. By applying improvised music techniques the focus would be on the connection between the techniques and the behaviour of spontaneous communications. My intention was to examine the impact we could have on the ability of children with autism to communicate and how this contributes to the improvement of special education for both the educational institute and children with autism.

The core aim of this research was to explore how music therapy techniques could be introduced in the educational settings for young children with autism in China to enhance their social communication development and enrich their programme of education. I set out:

1. To explore how young children with autism in China respond to the introduction of music therapy techniques in an intervention I designed – Developing Communication Through Music (DCTM)

2. To experiment with the use of those improvisational techniques to identify the musical components showing most promise for enhancing their communication abilities and general educational development; and

3. To engage music/education professionals in China in the task of developing an effective set of music techniques that they could use and from which young

children with autism could benefit.

My research question was:

How can music therapy techniques be introduced to benefit the social and communication development and educational experiences of young children with autism in China?

I had not worked and conducted research at this academic level before. In that respect, I was researching as a beginner rather than as an experienced therapist. I carried with me the hope that music improvising, as an empathetic and a supportive relationship, would benefit children with autism in this study and that I would be able to effectively combine the roles of researchers, music therapist and music teacher in exploring an intervention. My personal experience is that, even when I wear my music teacher hat, I approach my lessons as a therapist, both in planning and practice.

My intention upon the completion of the research training was to return to China and develop a teaching programme in a music therapy department of Shenyang Conservatory, perhaps using and adapting elements of Nordoff-Robbins Creative Music Therapy depending on how they crossed cultures in this study.

2. Overview of the thesis

Structuring the thesis following action research is difficult and a traditional research reporting structure may not be reflect the reality of the research cycles with their intertwined data collection, analysis, and reflection within iterative development. Therefore, this thesis is structured in the following way:

Chapter 2 provides a review of the relevant literature to give a theoretical framework upon which this study became based. It begins with the literature on music therapy and different models of music therapy approach particularly Nordoff-Robbins music therapy. The review then focuses on selected relevant studies from the wide field of music and communication, Intensive Interaction, music and autism intervention, focusing in on music techniques and core learning needs of young children with autism. Finally, using a case study I look at the benefit and potential for using music therapy in educational settings in China, which therefore provides the foundations for the research question postulated for this study.

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Chapters 3, 4 & 5 give the details about the action research methodology employed in this study as a research strategy for meeting the research aims and answering the research questions. Chapter 3 reviews the relevant literature and rationale for adopting action research as the best choice for my research study. Chapters 4 & 5 focus on different strands of action cycle stages in the design. In chapter 4, I discuss implementing and summarising the outcomes of the first action cycle including action plans, data collection and analysis. In chapter 5 I discuss the second of the action cycles including re-planning the strategy and intervention with new music therapy techniques for use by local practitioners in the special educational settings.

Finally, Chapter 6 provides discussion and recommendations for further research in the area. This includes me as an action researcher questioning myself about what has been learned about the relevance of the techniques for young children with autism in China and what has been learned about implementing a new approach. The conclusion summarises the thesis and synthesises the key learning and recommendations.

Chapter 2: Literature Review

2.1 Purpose, scope and structure of the literature review

The purpose of this literature review is to orientate the scope and focus of the research. Reviewing the literature exerts a profound influence on the researcher's practical work, in large part determining the boundary of the research area, the scope of research subject and setting the research in context. In the body of literature, there is a wealth of research in western history for music therapy and special needs education; however, I mainly focused on how the interventions for children with autism in young children in the UK and China. The literature review chapter includes autism and interventions, music therapy, the relationship of music and communication, music techniques and core learning needs for young children with autism, autism and special education as well as the benefit and potential for using music therapy.

2.2 Introduction to Music Therapy

First, I introduce the literature on what music therapy entails. Bruscia (1998, p.7) points out that 'music therapy does not belong to any one culture, race, country or ethnic tradition: it is global in its conception and manifestation'. The most important idea of music therapy is that of using music as a tool or healing method and this has appeared for centuries and in many different cultures (Reschke-Hernade 2011). Music therapy is a music-based tool applied in clinical settings and developmental conditions in education, including profound learning disabilities and autism (Bruscia 1998; Aigen 1995). Music therapy consists of sessions of live musical experiences targeted at social engagement, improving behavioural problems and reinforcing creative music making (Alvin 1996 and Aldridge 2006). It is a well-established intervention which is music-based within a therapeutic relationship to address physical, emotional, cognitive and social needs of individuals (Nordoff and Robbins 2007; Brusica 2012).

Music therapy in western countries has developed over seventy years. In the UK, it has been well established by the Society for Music Therapy, later renamed the British Society for Music Therapy in 1958 (British Society for Music Therapy 2010); The British Journal of Music Therapy was first published in 1968. Tony Wigram has been a leader in this area for last

thirty years and he has presented his work extensively worldwide (Wigram and Sutton 2011). From his perspective, the music therapy profession in the UK has flourished and changed in three phases over the last thirty years or more: 1975-1986, 1987-1997 and 1997 onward (Wigram and Gold 2009). During the early period, much of the literature indicating the use of music for children with autism addressed their musical ability and interests in music (Reschke-Hernande 2011). Even earlier, in the 1960s Nordoff and Robbins (1971), pioneers in improvisational music therapy for children with autism, provided an optional explanation for this perceived musicality. In Britain, there has been a long history of music therapy work for children with special needs and approximately 25 percent of music therapists are employed within school or educational settings (Association of Professional Music Therapists 2007). One of the very first music therapy text books in special education in the UK, Music Therapy in Special Education, was written by Paul Nordoff and Clive Robbins in 1971.

In spite of the American pioneering by music therapists treating children with autism through the mid-1960s, critics pointed out that there were only three music therapy studies of children with autism using evidence-based comparative measurement from 1959-1989 in the US (Reschke-Hernande 2011). Only one article on music therapy and children with autism was published in the British music therapy journals from 1975 until 1982. Music therapy did not appear in China until 1986 and the first formal training courses emerged in 2003 at the Central Conservatory of Music, China (Xinhua News). In China, music therapy development is still at a very early stage and there is a shortage of therapy resources within special needs education (Hao, 2012; Li 2013). I discuss music therapy research and special needs education in China in more detail in section 2.5

2.2.1 Defining music therapy

A universal definition of music therapy is hard to find because different music therapists use the term in different ways (Bruscia 1989). Most music therapy associations have created an official definition that reflects their concepts and practices (Bruscia 1998). For example, the Association for Professional Music Therapists in Great Britain state that music therapy is a treatment form which focuses on the trust relationship between client and therapist (Wigram 2005). Music therapists work with a range of clients who may be emotionally, mentally, physically and psychologically impaired (Nordoff and Robbins 2004). By applying music creatively in different settings, the therapist tries to connect between therapeutic

goals and well established interaction based on the patient's (sic) symptoms (Career in Music Therapy 1978). In the 1980s, the National Association of American Music Therapy (NAMT) stated:

> Music therapy is the use of music in the accomplishment of therapeutic aims: the restoration, maintenance and improvement of mental and physical health. It is the systematic application of music, as directed by the music therapist in a therapeutic environment, to bring about desirable changes in behaviour. Such changes enable the individual undergoing therapy to experience a greater understanding of himself and the world about him, thereby achieving a more appropriate adjustment to society.

Since the 1980s, the music therapy profession has continued to evolve as new knowledge and new health care practices have emerged in western countries. Most recently, the Australia Music Therapy Association (AMTA) offered the following definition:

> Music therapy is an established healthcare profession that uses music to address physical, emotional, cognitive and social needs of individuals of all ages. Music therapy improves the quality of life for persons who are well and meet the needs of children and adults with disabilities or illnesses. Music intervention can be designed to: promote wellness, manage stress, alleviate pain, express feelings, enhance memory, improve communication and promote physical rehabilitation (AMTA 2008).

Each conception of music therapy is summarised by the therapists' values, philosophy, training, clinical setting and cultural background (Davis et al. 2008). Individual therapists have different perspectives, views and interpretation for music therapy that reflect upon their individual practices (Bruscia 1989). From my perspective as music therapist, based on my clinical and educational working experiences, music therapy occurs when music elements, music activities, or different form of music help individuals/groups with their needs.

2.2.2 Different models of music therapy and music education

Over the last fifty years, music therapy has become a professional discipline formed from a variety of professional disciplines in different countries (Wigram et al. 2002). Some important questions for understanding music therapy in professional practice internationally include: how a music therapy models can be defined, when has music therapy been evaluated as a legitimate form of therapy and how many types of music therapy are currently being used. Maranto's (1993) comprehensive anthology on music therapy in 38 invited countries from all continents showed the variety of ways to practice and understand music therapy including fourteen models and more than a hundred different techniques documented in the USA alone.

There are mainly five different therapy models that have been well established during the last fifty years in western countries (Wigram et al. 2002).

Table 2.1 shows these and how their systems are categorized and practiced (Wigram et al. 2002). These five types of music therapies clearly show a common area related to how music is used in a therapeutic way with different techniques and characters.

Guided Imagery and Music (GIM)	Music centred investigation of consciousness (Association of Music and Imagery 1999); GIM is a process where imagery is evoked during music listening (Bonny 1990)
Analytically Oriented Music Therapy (AOM)	The Priestley Model, AOM is the name that 'has prevailed for the analytically Informed symbolic use of improvised music by music therapist and clients. It's used as a creative tool with which to explore the clients inner life so as to provide the way forward for growth and greater self-knowledge' (Priestley 1994. p.3).
Free Improvisation (FI)	The controlled use of music in the treatment, rehabilitation of adults and children suffering from physical, mental or emotional disorders (sic) (Alvin 1975)
Behavioural Music Therapy (BMT)	'The use of music is as contingent reinforcement or stimulus cue to increase or modify adaptive behaviours and extinguish maladaptive behaviours'. (Bruscia 1998, cited by Wigram et al. 2002, p.135)
Creative Music Therapy (CMT)	Creative Music Therapy is based upon the belief that there is an inborn musicality residing in every human being that can be activated in the service of personal growth and development (Nordoff-Robbins 1977, p.196).

Table 2.1 Type of music therapy & definitions

Table 2.2 shows where the different types are practised

Guided Imagery and Music	The most international renowned model used in North and South America, Oceania and ten European countries.
Analytically Oriented Music Therapy	AOM use extends all over Europe and has been growing in the USA over the last decade
Free Improvisation	Worldwide
Behavioural Music therapy	USA
Creative Music Therapy	1959-1996 Nordoff-Robbins has been taught in several countries, including Great Britain, Germany, USA, Australia, South Africa, Canada and Norway. After 2000, it was also taught and used in Asia including South Korea, Japan and Taiwan.

Table 2.2 Usage Coverage

Table 2.3 shows the evaluation of the five types

Guided Imagery and Music	In the 1960s Helen Bonny was trained as a music therapist and in the behavioural tradition and gradually developed GIM within psychiatric practice. A classical GIM session is 90-120 minutes; the client must be able to distinguish between imagery and reality (Wigram et al. 2002).
Analytically Oriented Music Therapy	The English professional violist Mary Priestley founded AOM at the start of the 1970s (Priestley 1975, 1994). AOM developed in work with psychiatric clients and in her counselling work with private clients. The session normally ends with a music improvisation where the material brought up in the session is absorbed as much as possible. With all kinds of clients, the focus is on the clients self-healing forces and mental resources (Wigram et al. 2002).
Free Improvisation	The pioneer of FI Juliette Alvin developed a foundation module for improvisational music therapy between 1950 and 1980. In 1959, Alvin formed the British Society for Music Therapy and subsequently formed the postgraduate course of music therapy; she convinced that music therapists must be highly trained and experienced musicians. Free Improvisation music therapy mainly worked in psychiatry. Her focus was on children, especially intellectually and physically impaired children (Wigram et al. 2002).

Behavioural Music Therapy	BMT developed in the USA, with the objective to control many different types of behaviour including physiological, motor, psychological, emotional, cognitive, perceptual, autonomic behaviour (Wigram et al. 2002).
Creative Music Therapy	CMT was developed 1959 - 1976 by Paul Nordoff and Clive Robbins. In 1976, Paul Nordoff died and Clive Robbins further developed his work with his wife Carol Robbins, introducing the approach to children with hearing-impairment, while maintaining the focus on children with intellectual impairment. Working with individual clients is central to this style of therapy with the therapists working pairs. Most importantly, the therapists use creative improvising and create an engaging musical atmosphere from the moment the client enters and the moment client leaves. Nordoff and Robbins approach originated in the education of children with special needs in 1953, in Sunfield Children's Homes, England and particularly approached children with autism in their descriptive research on music therapy in the 1960s and 1970s (Aitken et al. 1998).

Table 2.3 Historical Development & Clinical Applications

Nordoff - Robbins Creative Music Therapy may be the closest intervention match to the needs of young autistic children in China. This is because the Nordoff - Robbins approach has worked with children with autism for decades involving expanding and refining interventions to maximize each child's communication and social skills within the core of the improvisational musical experience method (Guerrero and Turry 2013). This is vital for my research as I focus on improving the communication skills of young children with autism and maximising their learning within the accessible improvisational musical techniques.

From a musical perspective, Nordoff and Robbins (1977) refer to interval concepts in their teaching. They are particularly interested in ancient music, such as, Chinese pentatonic scales (Nordoff and Robbins 2006), thus, their music may have a cultural impact that may make it possible to branch out into new techniques for teaching children with autism in China. Besides, the Nordoff - Robbins approach has recently been widely applied to Asian countries.

Turning to music education, this became established by the middle of the twentieth century and seen to successfully serve the population with special needs in western countries (Warwick 1993). Therefore, professionals and researchers became interested in finding new methods or approaches, which would help people with special needs, improve their physical and mental conditions with non-musical goals (Warwick 1995).

Music therapy and music (special) music education can be understood as poles in a continuum. Differences are important, but so too are similarities and common goals and problems. Robertson (2000) suggests the following comparison (Table2.4):

Clinical Music Therapy	Educational Music Therapy
1. Surviving 2. Coping 3. Functioning 4. Reacting	1. Subconscious Learning 2. Contributing 3. Growing 4. Responding (aesthetic)
Music Education	Music Profession
1. Conscious Learning 2. Refining 3. Focusing 4. Responding (artistic)	1. Training 2. Working 3. Informing 4. Performing

Table 2.4 A comparison of music therapy, music education and the profession of music

As shown in the table, Robertson (2000) recognises that music therapy would more effectively help people with special needs to increase their physical abilities and cognitive functioning than music education.

2.2.3 Nordoff-Robbins Approach

Currently, Nordoff-Robbins creative music therapy is the most used internationally improvisational music therapy approach, including use in Asia, especially in Japan and South Korea (Wigram et al. 2002). Nordoff-Robbins Music Therapy is an improvisational and compositional approach to individual and group music therapy (Howat 1995). Innate creativity is used to overcome emotional, physical and cognitive difficulties (Robbins and Robbins 1991).

Essentially, Nordoff and Robbins (1971, p.144) recommend a number of features through their most detailed descriptions of the practice in clinical musical improvisation with autistic children:

> The flexibility of the therapist's playing searches out the region of contact for that child creates the emotional substance of the contact and sets the musical ground for interactivity. The timing of his playing – the tempo, its rhythms and pauses – attentively follows, leads and follows the child's activity, supporting the experience it carries; his capacity for musical expressiveness in his playing and his singing is at the service of the child's involvement….his improvising is free of any restrictions of conventional musical form for it must constantly meet the changing forms of the child's response.

> The methodology of the approach has been developed for nearly thirty years with children and extended with adolescents. At the core of the training is the development of clinical musicianship and the release of creativity in the student (Nordoff and Robbins 2004).

Developing the description of how Nordoff- Robbins music therapy works, Turry (2006) gives a very comprehensive definition:

> The Nordoff-Robbins music therapy approach is based on music –centred and primary vehicles of change represents the musical processes. Robbins has no hesitation in identifying Nordoff-Robins music therapy as a form of music psychotherapy and calling it as psychotherapy in music. He deliberately uses this term as opposed to music psychotherapy to emphasize that the psychological elements lie within the overarching experience of music making rather than placing music within the psychological domain. This is similar to saying that process is music as therapy opposed to music in therapy in that significant changes occur as a result of the musical process(p.48).

The Nordoff-Robbins approach was deeply influenced by anthroposophist, Herbert Geuter, the environment of the Sunfield Children's Home and humanistic psychology (Simpson 2008). This approach was not derived from any other existing practice or theory (Nordoff and Robbins 1977). The key concepts of Nordoff-Robbins are: a collaborative process between therapist and client (Bunt 1994; Nordoff and Robbins 1977, 2004); music is created

co-actively in the facilitation of expression, communication and self-actualization (Simpson 2008); a valuing of sensitive improvement of clients' musical responses (Nordoff and Robbins 1977, 2004, 2007). Strategies are summed up by Bruscia (1987) as: connect the child in music, then encourage and develop child's musical responding and skills, leading to how to guide the child to express them-self freely and evoke their inter-responsiveness.

A Nordoff-Robbins music therapy session is unique and often easily recognisable (Nordoff and Robbins 1971, 1977, 2004; Simpson 2008). During individual therapy, the clients are mainly offered use of a cymbal and drum and the therapist strongly encourages them to use their voice (Simpson and Keen 2011). In group work, there are more instruments involved, such as, pitched percussion, reed horns, wind instrument and various string instruments (Nordoff and Robbins 1971). Generally speaking, children/clients are brought into the therapy room while a greeting song/music is being played by one therapist on the piano/guitar and at the end of the session they leave the room to music (Aitken et al. 1998). Therefore, a Nordoff-Robbins therapy session's starting point is music making with children (Alvin and Warwick 1991). Nordoff and Robbins composed a number of significant play songs, which showed how music can be used in music therapy (Simpson 2008). Nordoff-Robbins' songs are mostly tonal in style and have formed one of the foundational elements of musical engagement (Aigen 2005; Aldridge and Aldridge 2008). Also unique is the style of improvising that is evident in the play song books for children (Nordoff and Robbins 1962).

Nordoff-Robbins' early research in individual therapy focused on the impact of a long-term music therapy programme on the development of autistic children (Aitken et al. 1998; Bunt 2003). The starting point in each case was determined by the child's condition and the course was influenced by both general and musical behaviour (Nordoff and Robbins 2004). In their practice vocal responses linked children who had no speech, and in many case studies, most crying and screaming became crying singing, and then became singing (Nordoff and Robbins 1975; Bunt 1994; Aitken et al. 1998). Some case studies showed how autistic children, through the Nordoff-Robbins songs, learned to communicate and even learned to tie their shoes in two sessions, things which the child was unable to learn in nine months in his normal life (Bruscia 1987; Nordoff and Robbins 2004).

Music can be a valuable tool not only for reaching children with autism but also for working with children of similar pathological conditions in language (Lim 2010). Over recent decades,

music therapists have created ways of communicating with individuals who have profound language disabilities (Meadow 2011). Nordoff and Robbins (1971) suggested specific guiding in different areas, such as, intonation, rhythm, range and tempo. In selected songs, melodic intonation would closely match the intonation patterns of actual speech (Nordoff and Robbins 1962). Similarly, Lim (2007) suggested that the rhythm of melody should be equivalent to the rhythm of speech. For example, a syllable stressed in speech should be addressed on a strong beat in a measure of music (Lim 2007). Because many children with autism have language impairment and are unable to sing high-pitched notes, melodies ranging from B above middle C and below G have been argued to be best (Nordoff and Robbins 1997; Wigram 2004; Lim 2007). The tempo should be slow enough so that the words could be better understood (Lim 2007). Songs with repeated lyrics most easily enable children/clients to practice language and speech as well as comprehend the messages (Baker et.al 2009). While more evidence is needed to comprehend the process of music therapy, there is a significant quantity of clinical documentation presenting how autistic children achieve in communication and social interaction via the use of either structured or more freely creative musical techniques. Some influential case studies provide detailed data that music therapy can have greatly beneficial effects on motivation (see Alvin and Warwick 1991, Muller and Warwick 1993, Edgerton 1994, Nordoff and Robbins 1971; 1977).

2.2.4 Case study of music therapy with young autistic children

Research concerning music therapy and autism has developed convincingly during the last forty years (Edgerton 1994). A controlled research study by Edgerton (1994) reinforces the notion that improvisational music therapy can increase autistic children's communicative behaviours. Edgerton chose to measure musical and non-musical communicative behaviour during one-to-one music therapy sessions with children with autism and results show that improving music therapy techniques is effective in incrementally improving their communicative behaviours over a period of ten sessions. Music therapy was carried out on a one-to-one basis using Nordoff-Robbins methods and evaluation scales (Aigen 2005; Meadow 2011). When music therapy was withdrawn for one session there was an obvious decrease in communicative behaviour in all selected goals (Edgerton 1994).

Additional research evidence shows that autistic children have musical sensitivity and a perceptual preference for music (Thaut 1998), thus guiding their attention to musical stimuli

(Kim, Wigram and Gold 2008). Music therapy goals are determined during music therapy intervention assessment and each music therapy session is unique as every child taking part in the session is also unique (Kalas 2010). One influential case study describes how home-based musical methods used by mothers with their autistic children (Muller and Warwick 1993) give rise to increases in turn-taking and in musical activity while also reducing characteristic behaviours in these children. Alvin and Warwick (1991) advocate free improvisational music therapy for initiating a trust relationship and social interaction for children with autism. They highlight the quality of musical sound and silence, whereby autistic children may gain a new experience from silence and space therapeutically. Most importantly, in the 1960s and 1970s, Nordoff - Robbins used improvised and pre-composed music in group music therapy settings as well as an individual setting. In terms of music therapy's ability to empower an awareness of autistic children's interpersonal communication, both physically and verbally, a case study from Nordoff and Robbins (1968) is of particular interest. They present a six-year-old, very remote autistic girl, who they engaged by carefully improvised music, which met her mood. This music induced foot tapping and helped her to evoke interpersonal communication physically with her body movement. In addition, therapists' musical harmonisation of an autistic boy's screaming, led to singing-crying responses, thus showing features of musical connections in pitch and in melodic and rhythmic patterns verbally.

Overall, the case studies show how the effects of music can be gained measured and researched (Nordoff and Robbins 1968, 1971; Alvin and Warwick 1993; Muller and Warwick 1994; Edgerton 1994; Wigram 2004), which is useful for my own study. Furthermore, these case studies were based on Nordoff and Robbins' belief that structured and flexible improvisation provokes attention in autistic children and stimulates interactive communication. By contrast, my research is more concerned with exploring whether or not Nordoff - Robbins' music can help young children with autism in China to use communication spontaneously via imitating, initiating and turn-taking, by applying the techniques combined with highly compatible Intensive Interaction principle. Another note worthy concern is time. Edgerton's study spanned only ten weeks, thereby suggesting that even with constrained time as in my own research project, there is potential to see rapid change.

Chapter 2: Literature Review

Nordoff and Robbins (2004) argue that music is the spirit that underpins music therapy theory. Music conveys meaning (Ockelford 2013). Lim (2010) uses music as a positive effectiveness tool to enhance communicative behaviour, which can be used as an indicator of verbal or nonverbal communicative responses. There are different forms of engagement in music, all of which are separate but interrelated, such as the elements of: musical form, melody, rhythm, and phrase. These are organized into patterns and are perceived as a whole as 'music' (Berger 2002). In fact, music is very similar to spoken language, which can help an autistic child to communicate (Taylor 2012). Research has shown that the brain has a preference for this musical structure when receiving messages (Thaut 2008). Communication is also widely considered in music therapy literature (Lim 2010), including how music helps autistic children's dysfunctional sensory system to organise the input and make sense of what they are receiving (Berger 2002; Thaut 2008). In other words, music therapy provides communication where mere words cannot reach. Harding and Ballard (1982) used songs and singing to reinforce spontaneous speech and found that musical interactivity also led to an increase in verbal behaviours.

In order to understand the potential of using music to maximize learning and communicating in depth it is fitting to consult relevant literature on music as a language and the sophisticated components of communication, such as, melody, timbre, accent, rhythm, pitch, which play important roles in speech and language (Lim 2010). Because of this, musical stimuli increase the attention span, thus, music therapy interventions can be an encouraging vehicle for tackling various non-musical domains (including social communications) (Kalas 2010). Music engages with every single sense (Simpson 2008). Originally thought of as an auditory form, it also correlates visual and other sensory stimulation and, most importantly, provides opportunities to facilitate communication through these channels (Bruscia 2005). The variety of styles and musical parameters, structural characteristics and form of engagement are features of music that helps its therapeutic effectiveness (Thaut et.al 2008). It produces a means by which individuals can share emotions, intentions and meanings. Music can utilize powerful behavioural effects and can produce deep and profound emotions within people (Ott 2011). In light of this, additional research on musical structure and musical elements are essential.

In music, melody is defined by pitch sequencings; harmony is defined by simultaneous combination of pitch (Warwick 1993). Similarly, in speech, rising and falling pitch contours

help prosody defining language tones, for example Mandarin pitch contours help define the meaning of words (Oxenham 2012); the timbre provides perceptual sensory priming from a musical instrument or singing voice because that activation of the senses by musical stimuli prepares the brain to take in new information (Morton, Kershner& Siegel 1990). Through the processing of auditory information, the timbre of a musical instrument or singing voice also provides auditory stimulation to effectively establish and maintain attention to a therapeutic experience over time (Lim 2007). Indeed, the auditory and tactile stimulation from the musical instrument provides pleasing feedback, thus further facilitating client engagement and encouraging participation in a therapeutic experience (Thaut and McIntosh 2010).

Structurally speaking, music is typically composed of Gestalts, which are well-organized rhythmic, melodic and harmonic patterns that can enhance the perceptual process (Petra et.al 2013). Form refers to the overall structure of a piece of music and induces cognitive processes for planning and organization (Berger 2002). Perception of form in a musical piece relies on the perception of a multitude of musical elements and the anticipation of upcoming patterns within a specific time frame (Lim 2012). The melody of a piece of music represents another type of auditory pattern (Campbell 2010). Melody is a succession of musical notes that are perceived as a single entity (Hargraves et.al 2005) and rhythmic patterns have a steady and repetitive nature that serves to focus brain activation (Jakobson, Cuddy, &Kilgour 2003). The brain attends to and responds to the repetitive nature of a rhythmic pulse (Thaut 2005). Moreover, rhythmic structure can be used to direct attention to other non-musical elements. Rhythm patterns also can increase the memory and focus of autistic children (Taylor 2012). For example, rhythmically accenting certain words or sounds that are being addressed can direct attention to those elements (Trevarthen and Malloch 2009). Therefore, rhythm becomes an influential stimulus in communicating sensory and cognitive-perceptual information to the brain (Merzenich et al. 1996). According to the literature, music and speech/language have such similarities (Freyman et al. 2012) which are essential to my research into music and music therapy's potential to help autistic children improve their communication abilities.

Music is cultural and plays an important role in society; it is a vehicle for expression of ideas and emotions (Juslin and Sloboda 2011). Additionally, music also provides identification with other like-minded peers (North and Hargarves 2008). However, it is important to note here, the argument that music is not a universal language the music from one culture may not be

understood or even tolerated by people from another culture (Wheeler 2005). However, music is considered a universal phenomenon; all cultures have music as an art form (Clair 1996) with style differing across cultures. For example, there is a sharp contrast in musical style between ordinary Chinese people who affiliate with the Peking opera and traditional British people from classical musical backgrounds who appreciate Handel; different types of music have different impacts on certain groups of people. Songs inform society members about behaviour preference directly or indirectly, thus enforcing conformity to social norms (Ockelford 2013).

Indeed, the value and meaning that we attribute to any given musical selection will be filtered through our own cultural context (Thaut et al. 2008). As such, the selection of musical stimuli for any music therapy intervention should take into account the cultural traditions of the clients involved (Robbins 2005). For example, a Chinese therapist may find that clients/children from remote mountainous regions are more comfortable with folk music than pop songs in general. Moreover, no single style of music will be valued by all people (Matson 2009). During my research, care and attention would need to be paid to the culture as well as the form of music used for the intervention.

The literature is informative when it comes to the therapeutic use of music in attempts to facilitate speech and communication acquisition with children who, to varying degrees, are inaccessible (Silverman 2008). Hoskins (1988) demonstrated how musical patterns integrate with speech. According to his case studies, musical singing may enhance language abilities. In some instances, music is considered a form of communication; like speech it is made up of a system of symbols with specific rules of organisation through which people can express themselves (Gfeller 2002). Music and speech as forms of communication share certain characteristics (Lim 2012). However, they are also different in important ways (Ockelford 2013), for example, in processing and conveying different kinds of information. Moreover, music has the very powerful quality of being able to evoke moods and emotions (Gfeller 2002). To sum up, in using music in therapeutic or educational settings, music therapists or professionals need to understand what music is and what it is not, how to conceptualize music therapy (Bruscia 1998) and how to facilitate communication, too.

Research on the components of communication has directed attention to the area of interaction via music (Trevarthen 2002). Kempton (1980) studied the interactions of infants

and parents via microanalysis of film and audio footage; results show the use of rhythmical patterning in their communicative interactions. Infants are able to predict patterns in rhythmically structured behaviour and to synchronize their expressions with the rhythms of an adult (Trevarthen 2002). This synchrony confirms the communicative functions of rhythmical interactions (Reitment et al. 2010). Holck (2002, p.184) indicates that 'music is made up of the same elements that form the communicative bond between parents and infants. Similarly with the Intensive Interaction that using body language communicate between interactive partners. She suggests the term 'commusical interplay,' which involves combining the words 'communication and musical' to describe the interaction in music therapy (Holck 2004). She discusses 'response-evoking techniques' which are used by music therapists and other professionals, including imitation and turn-taking (Holck 2006). Furthermore, Trevarthen (2002) introduces the term 'communicative musicality' to explain using music to convey emotion to others. For Trevarthen and Malloch (2009) the music relationship observed between parent and infant reveals the raw materials that are utilized in music therapy. Most important is the observation that communicative musicality is vital for companionable parent/infant communication (Trevarthen and Malloch 2009). Wigram and Elefant (2008) state that communicative musicality is the principle of human motivation. They refer to the fact that the therapist uses different musical techniques to support the natural motives of communicative musicality, which is an essential component in the development of all children.

Aigen (2005) and Robbins (2007) maintain that music therapy as a medium provides a nonverbal means to communicate. A music therapist uses music experiences as a means of communication and for creating different relationships, while using this relationship/companionship as a dynamic force of change (Bruscia 1987). Nordoff and Robbins (1977), through their model of creative music therapy, state that every child, regardless of handicap (sic), has an innate musicality, a part of the inner self which responds freely and openly to music experiences, finding it meaningful and engaging (Nordoff and Robbins 1977, 2004, 2007), which all can be reached by music therapy. Wigram et al. (2002) argue that music-making involves taking-turns, sharing, reciprocal interaction, and inter-subjectivity and vocal/verbal expressions. In addition, music-making or music therapy is also using the elements of music to create communicative motives. Elefant et al. (2012) further argue that music therapy may increase responsiveness and enhance choice-making opportunities.

In terms of the evidence base, various studies demonstrate that music therapy has a positive effect on children's social and preverbal skills such as response, initiative, imitation, vocalization, sharing attention and turn-taking (Alvin and Warwick 1991; Muller and Warwick 1993; Aldridge2005; Holck 2004). After conducting what became known as the Hackney project-case studies, Bunt (1994) reported that music therapy significantly increased visual attention as well as increased frequency and duration of turn-taking activities in children with autistic spectrum disorder living in a poor area of London. Oldfield (2006) indicates that the therapeutic goals address social communication, speech and language, the activities of imitation and sharing attention in musical singing and instrumental playing are vital. However, Caldwell (2010) warns that sensory overload can be a problem for children with complex learning disabilities, particularly children with autism. As such, I focus more on the topic of music therapy, autism and special education for children with autism in Section 2.4.

2.3 Autism and Interventions

My research concerns music as an intervention for young children with autism in China and in this section I review the literature on autism pertaining to this. Early intervention for children with autism is, at present, an ethically and technically complex topic worldwide (Rogers and Vismara 2010). During recent decades, research concerning autism and interventions for individuals with autism has been broadly focused in Europe, America and more recently emerging in China. To identify effective and appropriate interventions for young children with autism, professionals often work together to address the wide range of challenges experienced (Reitman et al. 2011). The body of literature shows there are varying categories of interventions used with children with autism, which include behavioural strategies, traditional therapies, communication methods and alternative methods (Reitman et al. 2011).

Jordan (1996) provided an on overview of educational intervention types for autism in the UK in the 1990s and divided these into eight categories of intervention approaches: Integration Approaches, Interactive Approaches, Approaches to Communication, Walden pre-school programme, Division of Treatment and Education of Autistic and related Communication Handicapped Children (TEACCH), Daily Life Therapy, Behavioural approaches and Lovaas. More recently, Humphrey and Parkison (2006) suggest that the most commonly

used approaches in the UK were early behaviour interventions, which include TEACCH and Lovaas. Other approaches, such as Daily Life Therapy are not widely used in the UK and are weakly based on empirical studies (Mcloughlin and Lewi 2008). In reviewing the literature, I have only selected the approaches used for early interventions and which are relevant to meet with complex educational needs of young children with autism, such as, communication and behaviour problems. The list is not comprehensive, but it is indicative of the range of approaches being used. Comparative information about interventions meeting these criteria is provided across five categories in Table 2.5. Those include type of interventions, salient features, and domains of development, core skills and usages and evidence of effectiveness. In terms of types of intervention the categories passive and active refer to the child or clients' position and contour of the session as I understand them from the literature.

Type of interventions	
Adult-led	TEACCH-Treatment and Education of Autistic and related Communication Handicapped Children.
Adult-led	LOVAAS- A specific type of Applied Behaviour Analysis
Adult-led	PECS-Picture Exchange Communication System
Therapist-led/child-led	IMT-Improvisational Music Therapy
Child – led	II-Intensive Interaction
Salient Features	
TEACCH	Structured teaching; communication training; social skills support & stress reduction from the structured environment (Scholper et al. 1989)
LOVAAS	Structured teaching of essentials using behavioural principles (Lovaas 1987)
PECS	Using picture cards, to communicate needs, desires, even ideas without need for spoken language or words (Bondy and Frost 1998).
IMT	Music-making, music improvising, creativity, goal-directed with client domain or therapist domain (Bruscia 1987, 2005)
Intensive Interaction	Use of interactive games which are learner-led, involving practitioners in playfulness, reflection and sensitive contingent responding (Nind and Hewett 2005)
Domains for development	
TEACCH	Behaviour; functional communication using visually mediated instruction and structured environment
LOVAAS	Behaviour using behavioural analysis
PECS	Functional communication using pictures
IMT	Social; communication; emotion; transformation using pre-composed music or improvised musical techniques

Intensive Interaction	Social abilities/fundamental communication abilities/cognitive abilities/emotional well-being using interaction (Nind and Hewett 2005)
Core skills and usages	
TEACCH	Improved adaptation; parent-professional collaboration; structured teaching with young children with autism and throughout lifespan (Schopler and Mesibov 2005)
LOVAAS	Teaching new skills particularly to children with autism aged 2-4 years (Lovaas 1987, 1993)
PECS	Initial focus on the requesting function of communication using a picture and does not require developing verbal language. Applied to people with autism of all ages (Bondy and Frost 1998).
IMT	Imitation; turn-taking; spontaneous joint attention; behavioural compliance and positive affect in children with autism in different-settings and throughout lifespan. (Kim et al. 2008; Thaut 2005; Nordoff-Robbins 1971, 1977, 2004).
Intensive Interaction	Primarily social and communication abilities for people with complex learning disabilities of all ages including those with autism (Nind and Hewett 2005).
Evidence of effectiveness	
TEACCH	Schopler et al. (1971) showed that children with autism greatly improved their language, cognitive and social/self-abilities in a structured learning environment; quasi-experimental research with 8 children with autism showed significant changes in imitation, perception, hand-eye coordination after a year (Humphrey and Parkinson 2006).
LOVAAS	Lovaas and colleagues published articles which describe the group of very young autistic children supported intensively with applied behavioural analysis and almost 50% of children 'recovered' (Lovaas, 1987; McEachin, Smith &Lovaas 1993).
PECS	Individual case studies with young children demonstrated PECS was successfully utilized to teach a variety of communication behaviours to non-verbal children with developmental disabilities (Paul 2008)
IMT	Wigram et al. (2008) measured the effectiveness of individual IMT with autistic children of 4-11 years old in a pilot project. Children achieved great improvement in relationship, attention, the development of reciprocal, interactive communication and engagement. Many case studies measuring effectiveness of IMT on autistic children's involvement. (Turry 2013; Geretsegger et al. 2014).

Intensive Interaction	Kellett (2008) provides data from an individual case study of a young boy with autism and severe cognitive impairment who learned seven words in sign language from scratch after participation in Intensive Interaction. Zeedyk (2008) has been successfully using Nind (1999) Intensive Interaction techniques for several years and applying to a wide range of individuals with communicative impairments both within the UK and abroad.

Table 2.5 Characteristics of five important interventions

It is necessary to explore how music therapy techniques can be used in an effective intervention for young autistic children in China, particularly focusing on the responses among local professionals who experienced adapting music therapy techniques, often from the West, for educational settings in the East. Influenced by the literature, my potential intervention would need to improve the communication ability of pre-school children, so they may be able to share more activities of imitation, initiation, turn-taking and joint attention during music-based interventions, supporting them to learn in other contexts.

In this chapter, I also discuss interventions to gain a better understanding of the relationship between children with autism and interventions and their components. I select three approaches, TEACCH, Improvisational Music Therapy (Nordoff-Robbins and Orff-Schulwerk-approaches) and Intensive Interaction to discuss in detail, as each chosen intervention has a unique perspective and philosophy regarding the underlying issues in helping communication development in children with autism. Moreover, these interventions have all been shown in the literature to be used with younger children in clinical and educational settings.

2.3.1 TEACCH

The TEACCH approach was designed for people with autism of all ages and it has been widely adopted into school systems (Mesibov et al. 2004). TEACCH is widely used in the UK, where instead of focusing on involving parents, as in the original University of North Carolina version, it is adapted mainly for use in schools (Cambell 2011). It is used by teachers in classroom settings and for delivery by language specialists (Scholper and Mesibov 2004). The theoretical rationale for the TEACCH approach is 'structured teaching' (Scholper 1989 p.33). It is based on evidence and observation that individuals with autism share a pattern of

neuropsychological deficits and strengths that Scholper (1989 p.19) refers to as the 'Culture of autism'. Most importantly, combines behavioural and psycholinguistic approaches. The impact of the behavioural approach is emphasis on structure, and the psycholinguistic approaches emphasise choosing aims that developmentally match an individual student's needs, which also involves pragmatics (Ramberg et al. 1996). The emphasis in TEACCH is on 'teaching the student to communicate more meanings for more purposes in more situations prior to teaching communication with more complex forms' (Scholper 1989 p.9).

Several studies have investigated the effects of TEACCH on functional behaviours commonly addressed in children with autism (Panerai, Ferrante&Zingale 2002). The results show that TEACCH-based home programming is effective (Panerai et al., 2002; Butler 2007). Other case studies conducted in Troina, Italy, have sought to evaluate the TEACCH programme as a whole and to explore its generalizability (Panerai et al., 2002). However, due to the significant differences in the groups, it is difficult to state that the TEACCH is highly effective in general (Peeremboom2003). Based on the evidence, Cambell (2003) argues that TEACCH has reasonable potential to be a very effective program in highly structuring environments for children with autism; moreover Cambell (2003) notes that its implementation has not been shown to be harmful either physically or mentally for the children involved.

For the purpose of my research, I needed to consider how structure could be incorporated within the intervention. It may be that IMT techniques do need to be set within a 'structured teaching' framework, but this may sit uncomfortably with it being flexible and child-centred. The TEACCH approach requires a high volume of staff involvement and environmental features (Butler 2007) which make it potentially unsuitable for the Chinese educational setting which is characterised not just by mechanistic style and inflexibility, but by funding shortage in special needs.

2.3.2 Orff-Schulwerk IMT

Orff-Schulwerk models are one type of IMT widely used in school settings originally in Germany (Voigt 2013). The Orff-Schulwerk approach was designed only for music teaching programmes in classrooms setting in the early 1930s and Brusica (1998) identified a few intervention models based on the Orff-Schulwerk approach, developed by Carl Orff. There are three leading advocates of Orff music therapy models (Bruscia 1998). Gertrude Orff has been influential in Orff models becoming an integral part of the therapeutic programme

after amending the foundation of the models from the early 1970s in Germany (Gooding et al. 2013). The core concept is 'element music', which is at the foundation of all Orff based models (Bruscia 1987 p.219) and involves making music spontaneously, using the natural rhythms of movement and speech as the universal and original tendency for human beings (Bruscia 1998a). Orff models involve multi-modal expressive media, including dance, drama and art, to facilitate joint attention with autistic children (Goodwing et.al 2013). Thus, the multisensory dimension is the crucial nature of the Orff-Schulwerk approach (Darrow 2004; Plahl 2013). The general goals are to encourage children to express and experience themselves as a person and making music exchangeable (Nordoff and Robbins 1975, 1977).

Later, Gertrude Orff identified her approach as 'multisensory aspects of music' used within a social context (Darrow 2004). She was convinced that a multimodal approach produced a means of meeting the needs of individuals reaching those with sensory deficits or reaching individuals who were not yet ready to play musically (Goodwing et.al 2013). In working with disabled children, the approach reflects the idea that combining modalities of visual, musical or tactile stimuli enable the possibilities of musical expression (Bruscia 1987). More importantly, Gertrude Orff wrote about the possibilities of using call and response improvisation as a way to engage autistic children with others (Murray et.al 1976). She developed Orff music therapy and a prescribed sequence for its use with children with autism.

In terms of the strong evidence base, Voigt (2002, 2003) argues that the Gertrude Orff method has positive impact on rhythmic speech and body movement for toddlers. In a case study, a severely motor disabled boy of eleven months played instruments to accompany a therapist's rhythmic speech or situation songs after just six months of weekly sessions (Voigt 2003; Darrow 2004). Professionals also included the Orff-Schulwerk approach in the autistic children's program at Napa State hospital in the United States (Voigt 2003). Effectiveness of Orff models for children with autism is also evident from Voigt's (2003) implementation of the approach with a three-year-old boy with severe autism. The boy who initially did not use eye contact or engage in a variety musical activities (such as playing a drum, singing or dancing) later developed to engage in turn-taking, playing on the piano with the therapist, and making eye contact between musical episodes. Ladan Dezfoolian et al. through the case studies (2013) explored the effectiveness of Orff music therapy on the social interaction, verbal communication and repetitive behaviour of autistic children in the USA, reporting

significant improvement on social interaction and verbal communication of all participants plus reduction in repetitive behaviours. Bolourian et al. (2012) studied the role and influence of the Orff Schelwerk based music education in a specialised day school program for children with autism, USA, similarly reporting a positive influence on repetitive behaviour fostering social interactions in autism.

Teachers who used Orff approaches have been positive about the social and cognitive progress achieved (Filianou and Stamatopoulou 2013). Orff is one of the approaches adapted from music education, making it compatible with the teaching curriculum and other therapeutic purposes (Darrow 2004). The literature led me to consider that the focus of turn-taking/call-response improvisation techniques in Orff models and the idea of multisensory approaches that combine modalities of visual and musical stimuli to fit the needs of language and behaviours problems for autism as appealing when considering the intervention I would introduce in China.

2.3.3 Nordoff-Robbins IMT

The Nordoff-Robbins approach has been widely employed in clinical and some educational settings in the UK and Korea (Nordoff and Robbins 1997; Kim, Gold and Wigram 2010). It has been successfully utilized to develop a variety of communication abilities among children with autism (Simpson and Keen 2009). The clinical application of the Nordoff-Robbins approach has been wide-ranging and the method has been extremely well developed through research and extension of applications (Ansdell 1995; Pavlicevic 1997; Aigen 1998; Neugebauer and Aldrideg 1998; Streeter 1999a; Lee 2000). Most importantly, therapists use improvising techniques and create an engaging musical atmosphere from the moment the children enter the session (Ansdell 1995). Etkin (1999) describes a method of improvisation called 'Singspiel', which features strongly in piano-based improvisation sessions (cited by Kreutz et al. 2012). In addition, Alan Turry developed jazz and Blues guitar improvisation styles, which are more culturally effective with certain populations in the USA (Wigram 2004). Numerous studies have concluded that this music therapy treatment has led to improved social behaviour (Wigram and Gold 2005; Smeijsters 2011) and improved language and communication skills (Seybold 1971; Cohen 1994).

Most importantly, the Nordoff-Robbins approach primarily focuses on development for children with disabilities in the early years (Nordoff and Robbins 1977), and also has potential advantages for impact on the relationship between child and therapist via music and musical response (Wigram 2002). The philosophical orientation and clinical application of Nordoff-Robbins have been discussed previously in section 2.2.Some studies examined the effectiveness of Nordoff-Robbins IMT, thus, here I have summarised the literature to support my interest in this approach as the intervention in my research, particularly the idea of improvisation techniques/styles in learning via music –based intervention in order to explore the effectiveness on young children with autism in China. Edwards (2016, p.120) also identified that 'music therapy evidence comes in various forms including randomized controlled trails, controlled studies, qualitative studies or case series, as well as expert opinion.'

2.3.4 Intensive Interaction

It is hard to find a perfect definition for Intensive Interaction (Firth, Berry & Irvine 2010). However, Nind (1996 p.50) argues it 'involves the use of an optimum interactive style and exploits the range of interactive games found in caregiver-infant interaction. These interactive games form the core of the curriculum and processes that are normally intuitive are given structure and developed as deliberate progression.' Nind and Hewett (1994) successfully used body language to communicate with people with severe intellectual disabilities in the approach they named Intensive Interaction. Caldwell and Horwood (2005, p.7) similarly suggest that Intensive Interaction uses 'body language to communicate with children and adults in a way to establishes attention and emotional engagement'. They advocate combining this with Sensory Integration, which uses physical sensations to focus attention, as the two interventions together create a powerful structure for engaging attention in a non-invasive way.

Originators of Intensive Interaction, Nind and Hewett (2001) illustrate a central principle that the content and the flow of the activity follow the lead of the learner through the practitioner's response to her/his behaviour. Central to this method is the process rather than the outcome of the sequences. In addition, Intensive Interaction is concerned with negotiation and participation as opposed to dominance and compliance. Evidence regarding efficacy from Nind (1999) and Caldwell (2006) provides quantitative and qualitative data to show that Intensive Interaction engages individuals and leads to them sharing very close eye

contact, while also smiling and laughing together. Indeed, Intensive Interaction has its own clarity and specific structure after gaining an in depth understanding (Nind and Powell 2000). Moreover, experienced practitioners, Firth et al. (2010) argue that Intensive Interaction is an uncomplicated approach to learn, as the basic elements are universal within us all. From their perspective on implementing Intensive interaction in schools, Kellett and Nind (2003) considered three steps: change, innovation and implementation, showing that teachers and support staff can successfully learn and use the approach.

The collective evidence on Intensive Interaction points to a practical approach supporting engagement in children and adults with autism in different stages of learning (Caldwell and Horwood 2008; Hewett and Nind 2013; Jordan 2013). Based on the evidence, I concluded that my research intervention would benefit from incorporating Intensive Interaction techniques in order to engage with autistic children at the initial pre-verbal stage, and to make the intervention easier for new practitioners to use. For example, practitioners may readily learn the mirroring and contingent responding techniques which engage the participants in interaction and joint focus developing process (Samuel et al. 2008). This would follow along a similar line to the approach to Communication through Music developed in the UK by Corke (2002). This focuses on working with pre-school children with complex learning disabilities, using music and principles from Intensive Interaction. Corke (2011) suggests that it is crucial for practitioners to use skills, empathy and openness to reach young children at their level. Having learned from the literature, I could see the similarity between Intensive Interaction and musical interventions, which share the naturalistic social interaction aspect, and particularly match the learning needs of children with autism (Nind and Powell 2000; Turry 2013). My informal expectation was that those accessible techniques may well fit into special needs education for autistic children in China.

2.4 Features of Autism

2.4.1 Definition of Autism Spectrum Disorders

NAS (2012a) states that '... autism is a lifelong developmental disability that affects how a person communicates with, and relates to, other people. Kern and Humpal (2013 p.25) explain autism as 'a group of lifelong developmental disabilities that share similar characteristics in various degrees of severity. It also affects how they make sense of the world around them'. Historically, psychiatrist Bleuler used the term autism to describe

children with schizophrenia (Milton 2012). Thirty years later, Leo Kanner (1943) identified and popularised the concept of autism as a distinctive set of behavioural abnormalities which were distinguishable from childhood schizophrenia through follow-up studies with a group of eleven autistic children (Kanner 1971). (The work of Asperger on a similar population in Germany was left undiscovered until the 1970s). Kanner described a group of children who were relatively normal (sic) in physical appearance but demonstrated profoundly disturbed behaviour patterns including the: 'extreme social aloneness; lack of emotional responsiveness; avoidance of eye contact; failure to respond to auditory or visual stimulation; lack of language development or failure to use language adequately for communication' (Boucher 2009, p.9). Kanner (1971) also considered language abnormalities to be central to autism at the time.

More recently, Baron-Cohen (2008) identified that classic autism and Asperger syndrome have two salient features in common - social communication difficulties and narrow interests and repetitive actions. Classic autism relates to a variety of levels of IQ with language delay, whereas Aspergers relates to average IQ without language delay. The first official definition of autism for diagnostic purposes was published in Diagnostic and Statistical Manual Disorders (DSM-III) in 1981 in, America; the most recent DSM-V replaces earlier distinctions between autism and Asperger syndrome with just the Autistic Spectrum Disorder. Lorna Wing's Camberwell study was an important, large milestone in the history of autism. Wing (2002) argued that all children who either fit into Kanner's or Asperger's descriptions or overlapped both had common deficits of social interaction, communication and development of imagination. This led to the definition of the autism spectrum as a 'triad of impairments' (Wing and Gould 1979). ASD is associated with the delay of childhood development and is characterised by specific typical behaviours patterns. The diagnosis is based on behaviour (Frith 1989) yet the more 'fundamental impairment of psychological function underlines the triad' (Wing 2002, p.25).

Milton (2013), one of an increasing number of commentators and researchers writing from an insider perspective, recommends that professionals and therapists should listen to 'autistic voices' and pay attention to the wider social construction of autism. Nonetheless, the bulk of the literature is from a professional perspective (Firth 1989; Wing 2002; Williams 2006; Boucher 2009; Milton 2013).

Boucher (2009) argues that perhaps the most obvious difficulty experienced by autistic children is communication. This may include both verbal and nonverbal, such as language expressed through speech or identifying pictures or gestures. A large proportion of autistic children have diminished language skills or remain mute (Powell and Jordan 2012). Another concern regarding children with autism relates to their diminished social skills, as evidenced by a lack of social awareness, limited or abnormal displays of emotion as well as limited empathy towards others (Simpson and Keen 2011). Autistic social behaviours heavily overlap with communication impairments (Schopler et al. 1989) and can disguise or present as intellectual impairments (Firth 2003). In summary, from a professional or medical perspective, a deficit in the communicative use of language is a defining feature of autism and it directly reflects the core developmental difficulties of children with autism (Thaut 1988). However, Milton (2012) has expressed that any problem of social functioning exists not solely within autistic individuals but in both autistic and non-autistic people who have difficulties understanding each other.

2.4.2 Characteristics of communication impairments

A crucial feature of interpersonal understanding is joint attention and various studies have examined joint attention deficits in children with autism (Reitman et al. 2011; Sheinkopf et al 2000; Sigman et al. 1986). Joint attention is an early-developing social skill that is a key indicator in the early diagnosis of autism, noticeable prior to the obtaining of language (Reitman et al. 2011). It is also a means of distinguishing autism from other childhood developmental disorders (Frith 2003).

According to the definition, children with autism demonstrate delays in acquisition of language that range from lack of communication to deficits in use of language for communication (Tager-Flusberg 2001). Wing (2002) argues that the language of autistic individuals may or may not be impaired; the problems are the way they are using language, using and understanding non-verbal communication, and also the ability of intonation and voice control (Lim 2010). Some autistic children are said to have no ability to communicate verbally or nonverbally with others or may have no interest in this (Davis et al. 2008).

One example of commonplace use of language among children with autism is echolalia (APA, 1994). Some autistic children have echolalia language, in which previously heard words or

phrases are repeated without derived meaning and understanding (Prizant&Rydell 1984). Lim (2012) argues that autistic children are more likely to echo or imitate things they do not understand than things they do understand. In addition, it is argued that at earlier development levels autistic children do not use objects appropriately. They do not engage in typical patterns of exploratory or imitative play (Roberts 1989). Instead their preference is highly repetitive activities (Siegel 2003).

Interventions have developed with communication deficits in mind. Wigram and Baker (2005) consider that music helps with intonation and voice control. Caldwell and Horwood (2008 p.9) state that 'communication is about our ability to share our lives with other people and that the most effective interventions for children or adults with autism with poor communication   establish a need to communicate, simple gestures and objects of reference'. In Intensive Interaction repetitive speech or behaviour can be a vehicle for establishing playful communication (Nind&Kellett 2002). The characteristics of communication impairments in autism are summarised as: a) 'lack of spontaneous social imitation; b) failure to use language correctly; c) limited vocabulary and semantic concepts, poor intonation patterns; d) lack of gesture or mime when trying to make needs known; e) difficulty understanding spoken language; f) failure to develop joint attention skills in preverbal children' (Davis et al. 2008 p.121).

2.4.3 Social interaction

Wing (2002) describes impairments of social interactions by grouping them into those held by four different types of autistic individuals, although there is no clear cut-off between them. These include: the aloof group which is the most common among young children with autism, the passive group, the 'active but odd' group, and the over-formal, stilted group.

In response to social interaction impairments characteristic of autism there are a range of interventions. Direct training is often regarded as essential in order to improve social skills for children with autism and help them to integrate better in a variety of setting (Baron-Cohen 2008). Communication skills offer the foundation for developing and maintaining social relationships (Cross 2004). As a result, autistic children need to develop communication ability along with social skills in order to reinforce interactive skills and increase inclusion in classrooms and social activities (Oldfield 2006). Consequently, Kerr

(2012) argues, children who are autistic will need training in memorizing the salient points of experiences and connecting them in a meaningful way to other experiences. Therefore, for children who are autistic, intervention to support social interaction is vital which includes social skills training and cognitive ability developing (Kerr et al 2012). It is also essential that people who are working with children with autism need to be educated too, as social interactions is reciprocal.

2.4.4 Sensory processing

Sensory processing is a core part of typical development as children sense the world around them (Davis et al. 2008). However, due to the sensory processing problems of autistic children, the environment may be confusing to them (Milton 2012). Some children with autism have sensory sensitivities which might make them easily distracted by surrounding people, either because of the other's unwanted touching, loud talking, or even overwhelming scents etc. (Sinclair 2010). Children with autism may process and respond to information at varying levels, often displaying aggressive or self-harming behaviours when struggling to understand a situation (Davis et al. 2008). Often this is exacerbated by their inability to use speech and language and expresses their confusion (Cigman 2006). Thuat (2008) also indicated behavioural issues are difficult to control in a variety of settings and environments, such as a classrooms or early years centres, though Wing (2002) reminds us that autistic children are unique, therefore, not all children demonstrate these behaviours in the same way. Caldwell and Horwood (2008) emphasise that individuals with autism experience the sensory world differently from typically developing individuals and process sensory input differently; Thaut (2008) too notes that sensory input can be overwhelming. Caldwell (2008) also suggests that therapists, educators or caregivers need to understand how autistic children and adult experience the world to avoid making behaviour judgements based on our own sensory experience.

2.5 Core Learning needs for young children with autism

The literature on autism includes discussion of the core learning needs of young children with autism in special needs educational settings. In earlier studies, Jordan (1998) identified that the nature of communication problems was an unresolved issue for young autistic children compared to other learning difficulties in the 1990s. Powell and Jordan (1993) argued that young children with autism have social communication problems in the

development of the experiencing self. According to Ingersoll (2008) these problems include speech and language, turn-taking and joint attention. Recent studies have shown that the primary learning needs of young autistic children in educational settings are coping with communication and linguistic difficulties (Jordan and Powell 2011). Powell and Jordan (1993) argued that language is a particularly critical medium for teaching and learning. This means that teachers or therapists in the class need to examine the level of language being used by students in schools to determine what can be understood and accepted by them (Schopler et al. 1989) to help pupils understand and 'learn how to learn' (Jordan and Powell 1995). Spontaneous social communication skills have become a major learning focus in educational settings (Schopler et al. 1989; Holck 2002).

Thaut et al. (2008) suggest that joint attention abilities, or difficulties, have a significant impact on the autism learning process and need to be a focus for teaching young children with autism. Several studies have found a close relationship between imitation and joint attention in autism (Ingersoll 2008). Abrahamsen and Mitchell (1990) found a high correlation between vocal imitation and joint attention during spontaneous communication with young children with autism. Thus, I consider imitation and joint attention to be essential for the learning process and crucial for the development of the music-based intervention in my research.

From the perspective of music therapists, the core learning needs of young children with autism are to develop positive relationships via music (Nordoff and Robinns 1977, 2004).As argued by Nind (1996), sharing attention is vital for human connectedness. Intensive interaction relies on and develops a sharing of attention in interaction (Caldwell 2008). The core learning needs for children with autism in early special education is further addressed in Section 2.4, so as to develop an understanding of how to promote autistic children's social communication and joint attention in social development in educational settings via music.

2.5.1 Communication development in children with autism

The United States, Joint Committee for the Communicative Needs of Persons with Severe Disabilities (1992, p.2) defined communication as:

Any act by which one person gives to or receives from person information about that person's needs, desires, perceptions, knowledge, or affective states. Communication may be intentional or unintentional, may involve conventional or unconventional signals, may take linguistic or non-linguistic forms and may occur through spoken or other modes.

Grove (1999) asserts that people with disabilities often have hearing, vision, physical difficulties that affect communication; good communication depends on how people hear, see, feel, attentive, understand, express and motivated, therefore, we need to use different ways of communicating. People with disabilities might take longer to process and respond to communications. Furthermore, communication includes interchange of information to facilitate social behaviours, such as facial expressions, gestures and movements (Rider 2003). In working with children with autism and developmental disabilities or speech and communication impairment the combined use of nonverbal behaviour and spoken communication is essential for satisfying relationships (Silverman 2008; Lim 2010). Misinterpretation of communication attempts is common (Ockelford 2013) and these affect the human relationship (Nordoff and Robbins 1977). Nonverbal communication signals can often be difficult to interpret, especially cross-culturally (Sue & Sue 2003). In essence, when it comes to the literature on communication for children with autism, the areas of importance include imitation, initiation, turn-taking and joint-attention, as I discuss next. Together with verbal, nonverbal, and musical communication these are a vital part of this research.

2.5.2 Imitation

In my study, I wanted to explore how imitation as part of DCTM could help young children with autism to improve their communication abilities. Imitation is a vital part of children's development (Holck 2006) and therefore imitation is the focus of a variety of therapeutic programs (Alvin 1991).

I divide imitation into vocal and physical imitation to discuss in detail. Imitation is the foundation to the development of the representation of language (Piaget 1951). Robbins and Robbins (1991) suggest that social engagement in children with autism is affected by imitation in the music therapy session, that is, by vocal imitation and instrumental imitation

(physical). Burnt (1994) discusses uses of vocal imitative play in his work with young autistic children, which is crucial for establishing contact with children at the beginning of music therapy work. The three most frequent vocal behaviours are imitated, which includes vowel-like sound, bangs and consonants. This was successful building the connection and communication bridge between the therapist and children (Burnt 1994). Yet, there are big differences between the English language and Chinese language in intonation and prosody. Thus, I would need to explore and examine whether those ideas and techniques would fit into Chinese special needs education for young children with autism. Perhaps in crossing cultures, the mixed teaching materials of Nordoff and Robbins' melody with Chinese lyrics could be used in my research practice in order to explore the impact on spontaneous communication for young children with autism in China.

Caldwell (2005) argues that Intensive Interaction uses body language to imitate and communicate with autistic children in order to protect them from sensory overload. Earlier, Nind (1996) notes Intensive Interaction recognises the nature of the pre-verbal learner and emphasises imitation in the development of sociability and communication to fit the children's needs. Intensive Interaction follows processes used in interactions between infants and their caregivers and according to Klinger and Dawson (1992), parents/caregivers are very often directly imitating the infants' body movements, facial expression and vocalizations during the first six months of life. Stern (2003) similarly notes that those early experiences are very likely to perform an essential role in the infant's developing awareness of the social environment. Moreover, Wengower (2010) maintains that children with autism benefit from use of mirroring and empathic reflection techniques in working to develop therapeutic relationship and enhance communication. Both music therapy and Intensive Interaction work on imitation in a similar way to engage children with autism so that connections are made. Gold et al. (2005) identify that imitating encourages promotion of social awareness in children with autism and self–actualisation may be evoked. Fundamentally, the imitation behaviours of both adults and children activate their awareness of the communicative power on each other (Trevarthen 2002). Hence, the process of imitation is vital in developing an understanding of others (Bremner 1988).

Evidence from Intensive Interaction practitioners (Zeedyk 2008) identifies imitation as one of many forms of communicative exchange affecting the ability to communicate. The role of imitation in the development of young children with autism is uncontested and I could see

that imitation skills have the potential for engaging children with autism whether for therapists, professionals, parents or educators (Horwood 2008). This would require firstly, a partner to interact with, and secondly, strong stimulation of emotional sharing (Trevarthen 2010). Thus, reciprocal vocal imitation is an important goal of communication interventions because it is interrelated with speech. There is a unity in the literature that children learn the habitual communication behaviours specific to their culture through imitation (Trevarthen 2009).

Bruscia (1987, p.535) defines imitation by therapists as 'echoing or reproducing a client's response after the response has been completed'. It can be processed through rhythm, interval, melody, body movement, verbalization, which are provided by the client. Bruscia suggests physically imitating selectively and carefully

> to focus the client's attention on his/her actions, to reinforce the client for reacting or communicating, to indicate to the client which aspects of his/her responses are relevant to the task or situation, to convey acceptance of the client's offering, to verify the client's intended message, to establish turn-taking as an interactional paradigm, to give the client an opportunity to lead and have control over the therapist, and to model imitative behaviour (p. 538).

The therapist may also mirror word-by-word what the client says (verbal imitating) (Bruscia 1987). However, Intensive Interaction provides a starting place with imitation activity without words. Intensive Interaction and Music Therapy approaches both consider that imitation is crucial in the development of social communication and work in similar ways. Intensive interaction is more focused on playful mirroring, adults support the child initially and might balance the interaction (Nind 2013). From the perspective of music therapists, Wigram et al. (2002) suggest that imitation is a call-responding technique. They claim that imitating a child's action often leads to a positive response from the individual. The music therapist can imitate the child's musical initiatives as well as the way that the child is playing (Wigram 2002). Child psychologist Ingersoll (2008) points out that imitation and play skills have a very close relationship in children with autism. There is a perfect example in musical interventions to demonstrate that imitation and initiation of musical exchange helped individuals and therapist to understand cause-and-effect and relationship within musical play through twenty-five sessions with a speech-delayed young boy (Meadow 2011). Simultaneously, IMT uses the same principle as Intensive Interaction of mirroring and

responding. My intervention would need to implement imitation activities, especially at the initiating stage of delivering the new musical techniques into classroom teaching with young children with autism via musical activities.

2.5.3 Initiation

Holck (2004) points out that the ability to interchange between initiation and imitation does not typically develop until the age of 30 months. McTear (1985) states that babies could show fairly clear purposeful initiations from about nine months, however, McTear (1985) found that the earliest strategic initiations in the ages of one month to five months indicate that the child attempts to get attention with something like a cry. The parents/caregiver, thus need to find the appropriate response (Trevarthen and Mallcon 2002). Reichle, Halle, and Johnston (1993) note that the terms initiation and spontaneity are used interchangeably in the literature.

Stern (2000) indicates also that the most straightforward and commonplace examples of communication are initial language forms of requesting. For example, the non-verbal child wants to play a drum, s/he may reach out a hand, point out towards the therapist or teacher while making grasping movements between the drum and the therapist. This series of body language indicates that the child shows an internal emotional state to manipulate the therapist, namely, comprehension of the child's wants and the capacity to intend to satisfy that wants and will (Trevarthen 2009). Mundy (1989) indicates the core learning difficulties in children with autism are achieving shared understanding with peers or others and initiating social interactions.

Initiation seems difficult for children with autism (Nordoff and Robbins 2004) who overly rely on others, such as teachers, therapists, caregivers and parents to activate them in all types of behaviours to varying degrees (Schopler 1989). In music therapy, musical interactions may raise opportunities during the purposeful musical activities for autistic children to initiate, vocally or instrumentally, or through body language (Holck 2004). It will help children to learn sharing and initiating via music (Holck 2002). In IMT music is purposefully improvised to engage the child's attention and encourage motivation (Nordoff and Robbins 1977, 2004).

Based on the literature, my intervention was based on the premise that the child would be motivated by certain music elements, instruments or musical activities to initiate and to communicate their wish. For example, the child may stretch out their hands to grip the tambourine when pre-composed or improvised music plays or interacts with them. Music therapists attempt to establish a meaningful relationship with the client through a shared, lived and meaningful music making process, which might encourage that client to initiate in the near future (Alvin and Warwick, 1991). Trevarthan (2009) describes the development of children's initiating strategies, including the use of gesture and vocalizations, as means of evoking responses. In order to explore the effects of improvisation music therapy on these developments for children with autism, employing music games to build up physical contact and social routines with imitation of child behaviour are essential (Meadow 2011). From my perspective, it also provides preverbal interaction as means of cultivating interpersonal contact, joint attention and understanding via musical elements. The playful aspects are highly motivating and it is not common in other approaches. Essentially, imitation of the child puts that child in the position of initiator, whether the child intended this or not, and the initiation of social contact is gradually developed by the child (Nind 1999).

Oldfield (1995) considers her approach as a music therapist trying to balance following and initiating during the sessions. She indicates that 'the actions of following and initiating are so closely intertwined that in many instances it is impossible to say who is the leader and who is the follower' (p.226). Oldfield also refers to receptive and interactive approaches for achieving therapeutic goals within the music therapy session (Oldfield et.al 2012). The questions she emphasises is whether the therapist suggests activities or waits for the child to initiate them, whether the therapist leads the musical improvisation in a particular direction or plainly mirrors what the child has initiated, and whether the therapist steers the session or lets it be led by the child (Warwick & Muller 1993; Oldfield 2006). In her work with children with autism, Oldfield is exceptionally directive for the beginning and the ending, but much less so for the rest of the session as she believes initiation is crucial.

In general, music therapists specifically deal continuously with the issue of balancing between following and initiating in their clinical work (Oldfield 2006). This issue is even more important when working with profoundly delayed, disordered or absent language development, where the client's initiation is crucial for communication development (Warwick & Muller, 1993; Holck, 2002; Oldfield, 2006; Oldfield et.al 2012). Holck (2002 p.183)

writes, 'For communicative development to take place, a child must have the desire, ability and possibility to influence the environment and be influenced by it. In this area of communication, music therapy particularly has the potential to help'. To summarise, encouragement for young autistic children to take the initiative is important in intervention for them.

2.5.4 Turn-Taking

To explore how musical techniques help social interaction and communication for children with autism, I searched the literature for accessible techniques and musical activities that could be applied in developing my intervention. Turn–taking is the principle structure of a dialogue and, in music therapy interplay, it is aimed at raising preverbal and social interactions (Holck 2004). Turn-taking is also a core tenet of Intensive Interaction (Nind & Hewett 1994). When language starts to develop, turn-taking is strongly tied with social life to 'allow for the orderly distribution of moves when people are engaged in social acts' (Gelber 2002, p.2). Gelber also stresses that turn-taking is crucial in conversation. When children use imitation in their social interaction, they can take turns, exchanges roles, share interests and apply traditional rules, thus they can communicate (Trevarthen 2000; Nadel 2002; Holck 2004).

Imitating is type of turn-taking which includes vocal imitating and physical imitating. At this level, children or individuals may not have much knowledge about the understanding of the content. Yet, children have different ways of interacting with partners; young children try to repeat their partner's sounds or actions while older children show more interrelated speeches (Holck 2004). In music therapy turn-taking describes the specific action where one of the partners takes a turn in music (Holck 2004). Holck (2005) notes that it is important to address the child's desire and ability to practice and to develop turn-taking behaviours in social 'interplay' (p.45), while working with children who have problem with reciprocal behaviour. Music therapists use turn-taking activities in singing and other musical parameters to help children in different ways to communicate. Wigram (2004, p.97) claims that 'music is a marvellous medium for engaging in different types of conversation or dialogue between two or more people'. He defines 'turn-taking dialogues' as 'making music together where the therapist or clients in a myriad of ways, musical or gestural can lead each other to take turns. Wigram (2004) points out this 'turn-taking style of dialogue requires one

or other to pause in their playing and give space to teach other (p.98)'. In summary, turn-taking is an indispensable element in the process of social interaction and communication for young children with autism. Thus, developing turn-taking skills as part of DCTM and finding techniques to do this would be a priority in my action research.

2.5.5. Joint attention

Gaining joint attention skills represents an essential stage in early development as the foundation of the development of language, communication and social interaction (Kim et al. 2008). So far, there are no quasi-experimental studies of IMT to examine whether joint attention has been improved (Kim et al. 2008). Thus, Kim et al. (2008) consider that potential techniques and approaches maintain primacy for achieving improvement of joint attention skills in young children with autism. Dawson et al. (2004) and Boucher (2007) agree thatdeficits in joint attention are noticeable prior to the acquisition of language in children with disability in language, particularly autism.

Joint attention is a fundamental developing social-communicative skill and absence of it is a key characteristic in the early diagnosis of autism (Reitment et al. 2011). It refers to the ability to 'coordinate attention between interactive social partners with respect to objects or events in order to share an awareness of the objects and events' (Mundy et al. 1986 p. 657). The ability for joint attention is one of the dimensions that distinguish autism from other developmental disabilities and childhood disorders (Mundy 1995; Holck 2006). Robertson et al. (1999) and Mundy &Sigman (2006) also argue that joint attention behaviour disturbance in the development of children with autism is a major characteristic to their social interactions.

There are two different opinions about the initial development of joint attention in childhood. Koegal (2004) and Reitment et al. (2011) suggest that there are two type of joint attention: initiating joint attention and responding to joint attention (Reitment et al. 2011). Children with autism can be taught to develop joint attention behaviours through specific interventions and communicating nonverbally with others is a primary function of joint attention (Boucher 2007). There are many interrelated factors playing a part in raising joint attention skills in children with autism (Landry and Bryson 2004), for instance, gaining of joint-attention through imitating the child's behaviour, which shows high level of

synchronization and correspondence during play interaction (Siller and Sigman 2002). Relate to the fact that Dawson et al. (2004) divide joint attention behaviours into sharing attention (eye contact), following the attention to another (follow pointing) and directing the attention of another, there is an assumption that specific musical activities and techniques should help to develop joint-attention in steps for young children with autism. Finally, according to Reitment et.al (2005) joint attention could be learned by the encouragement of verbal and nonverbal communication to a child, since joint attention is fundamental construction for communication, cognitive and social development (Kim 2006). Wigram (2002) states that sharing attention is vital and that sustaining joint attention is the most challenging aspect for children with autism in the music therapy process (Wigram and Gold 2006).

There is a randomized control study from Kim, Wigram and Gold (2008) that shows that compared with play IMT has positive effects on joint attention behaviours and nonverbal social communication skills in children with autism. Significant findings include that eye contact and turn-taking are significantly sustained in music therapy session via musical activities compared with in the playground. The results suggest that low levels of initiation of joint attention, responding to joint attention and social interaction are all affected. In particularly, eye contacts and turn-taking are the main characteristic in Intensive Interaction. Based also on the Kasari et al. (2008) finding that the language of pre-school autistic children significantly benefits from vigorous treatment in joint-attention intervention, I consider that joint-attention is one of the core learning needs for young children with autism in special needs education in China, and must be part of my intervention. I decided that the DCTM intervention would need to gain joint-attention in this study.

2.6 Music therapy, autism and special education

Special education in both mainstream and special needs schools in the UK currently provides multiple teaching choices for children with special requirements and has done since the early 1970s (Wigram 2009). To discuss music therapy in special needs schools, I need to consider the relationship between special needs education and the role of music therapy within special needs teaching and learning. Music therapists started to work formally in educational settings and have regularly worked in schools in the UK since the early 2000s (Oldfield 2012). Some professionals have assumed that music therapy has limited

applications in special education due to lack understanding about the nature of music therapy and how qualified music therapy work can be done (Daveson and Edwards 1998). On the other hand, professionals and practitioners could also use music therapy for maximizing learning, in order to meet special educational goals (Bruscia 1989).

2.6.1 Music therapy goals and autism in special needs education

Understanding how different techniques and goals of music therapy can be applied in special needs educations is essential in my research. Improvisational techniques entail the making of music between the individuals and therapists or students and teachers. Frequently, improvising goals are focused on increasing self-esteem, developing self-expression, and turn-taking (Daveson and Edwards 1998). Furthermore, receptive techniques may involve students/individuals with profound disabilities in the situation of listening to music or absorbing musical vibrations (Daveson and Edwards 1998). There has been a debate about the possibilities of music therapy for helping people with autism spectrum for a long time (Khetrapal 2009).

In this research, I sought to gather more evidence about how improvisational techniques can be applied to the needs of children with autism including how it works for children in one early years educational setting in China. Music therapy goals for children with autism focus primarily on improving communication, initiating and sustaining joint attention, social interactions and behaviour (Howat 1995). The improvisational music making provides a useful medium (Wigram&Gold 2005) because music provides a complex range of expressive qualities, active forms which facilitate forms of communication and social interaction that can be established to help obtain engagement, interaction and relationship (Wigram& Gold 2006). The benefits of using music in a special educational setting are extensive and unique for students with special needs (Daveson and Edwards 1998). For instance, in improvisational experiences, the children make up music while playing or singing, creating a melody to their abilities, rhythm, song or instrumental piece with professionals/therapists promotes (Holck 2012). Thus, they are improving their capacity of initiation and sharing attention via improvisational experiences. The goal of improvisation activities primarily refers to establishing a nonverbal channel of communication and a bridge to verbal communication (Brucia 2006). Robbins and Robbins (1991) found rhythmic entrainment helped in reducing problematic classroom behaviours. For example, musical interaction

provides a context and vehicle for development that ameliorates a lack of sharing attention and turn-taking in play (Holck 2004). Active music making promotes interest and motivation to a degree that leads to joint attention and tolerance of shared engagement and social interaction (Wigram et al. 2008).

Working with musical instruments in special needs teaching, it is vital that a wide variety of simple musical instruments can be easily accessed by children (Howat 1995). This gives teachers/therapists the chance to bring children into purposeful activity and to heighten their awareness in a teaching process (Nordoff and Robbins 1977, Oldfield et.al 2012). Via instrumental playing, children can perceive music, learn it, experience it and remember it (Daveson and Edwards 1998). More importantly, music therapy instrumental works are aimed to fulfil many learning requirements such as sustaining playing and sharing attention (Bruscia 2005; Nordoff and Robbins 2007). The different instrumental parts written for the children to play possess different emotional qualities (Paul 1971). As the work becomes established and the relationship becomes trusted, the therapist can move from a comfortable zone to one that is the more demanding or a higher capacities position (Nordoff and Robbins 1977, 2004, 2007). This process is generally how music therapy works in educational settings to help individuals to improve/transfer children's abilities into real contexts, and teachers to improve their teaching qualities or to make changes. All the explanations provide some evidence that musical activities, techniques, and improvisational experiences can be effectively used in special needs education for children with autism. In addition to the literature, my thinking was informed by my personal experience of observing UK practitioners work with music in special needs schools which showed that teachers can successfully apply musical elements or musical therapy techniques into classroom teaching. In summary, music therapy improvisational techniques are useful media in special needs education in order to help children with complex learning needs.

Other than improvisational music therapy techniques, the parts of rhythmic patterns and melodies have been found to be beneficial for aiding learning and memory in autism (Wigram and Gold 2006). Buday (1995) found that children with autism use songs to imitate signed and spoken language better than spoken texts in pictures or paper.

The literature confirmed that it would be worthwhile to examine and explore the effects of music and music therapy techniques on communicative behaviours development in children with autism in educational settings in China.

2.6.2 Children with autism as candidates to benefit from music

In my study, I assumed that children with autism would benefit from musical interventions based on the few studies that examined and explored IMT effectiveness on special needs learning. Gold et al. (2005) identified eleven studies that examined the effect of musical activities on cognitive, social and sensory development of children with autism. These studies emphasized the general effects of music on children with autism and also mentioned a strong beneficial effect of music on their speech and language development (Gold et.al 2010). Gold et al. (2004) analysed a number of quantitative studies and results show that all types of musical intervention, including singing, background music, musical stories set to music have been effective for children and adolescents with autism. Kaplan and Steele (2005) found that the primary goal areas in music therapy intervention for children with autism were communication and language problems, and the most frequently utilized interventions were interactive singing and instrumental playing. Children with autism were found to be able to transfer their skills and responses acquisition from music therapy session to non-music therapy environments over a two year project (Kaplan and Steele 2005) via musical interactions. According to the literature, there are many areas that children with autism benefit from (Nordoff and Robbins 1977, 2004; Baker and Wigram 2004; Kaplan and Steele 2005; Gold et al 2010). The Nordoff-Robbins approach is particularly associated with the effect of music on communication and language improvement in children with speech and language delays, including children with autism (Nordoff and Robbins 1977, 2004, 2007), especially the techniques of instrument playing, singing or action songs (Nordoff-Robbins 1997; Daveson and Edwards 1998). In more recent music and autism literature, similar results have been reported regarding the positive effect of music on communicative and language in children with autism (Gold et.al 2010). These findings suggest that autistic children, not only benefit from the positive effect on communication/language development, but also from the positive influence on the most pervasive developmental deficits with autism (Wigram 2000; Kaplan and Steele 2005; Gold et al 2006; Thaut 2008).

2.6.3 Challenges of introducing music therapy into special needs classroom teaching in China

Music therapy has been used specifically with children, exploiting the calming effect of music to facilitate speech and language development in the West (Marely 1989). Along with a number of other countries, the UK was one of the earliest countries to develop special needs education (Ministry of Education, China 2001). Despite being a leading country in the world of special needs education, in the UK, practitioners and families are keen on 'trying things out', partly because of ambiguity and many gaps in knowledge (Charman et al 2011, cited by Parsons et al. 2013). The consequence of a lack of clear guidance has made practitioners and other professionals think about, 'what kind of evidence is needed and how there can be greater uptake of evidence-based practices in supporting children's learning within schools, particularly children with autism' (Parsons et al. 2013, p.269). Judging by the perspectives of different researchers, more evidence based research is needed and motivated school-based practitioners are essential to delivering the research project or programme in schools (Parsons et al. 2013).

In comparison, China is lacking when it comes to special needs education and has many challenges to face. For example, since the 1907 development of special needs education in China by American missionaries, China has worked from scratch, developing in non-standard ways, and finally to form the regulated schools (Guo et al. 1997). It took until the 1980s for China to instate the first law for compulsory education which includes certain categories of disabilities (National People's Congress 1986, 1990). Consequently, the literature shows that the Chinese are lacking when it comes to the researching methods in the special education curriculum. Although there is broad and universally successful literature covering the application of music therapy in clinical practice, there remains a lack of theoretical literature dealing with understanding the communication mechanisms behind the improvement in China's adaptation (Lian 2012). Moreover, there is an absence of empirical research from the special needs education field, particularly in developing countries. Additionally, Li (2011) pointed out that the major researcher groups for special needs, particularly children with autism, are distributed across universities and medical organisations, with no core research centre or funded organisations (Li 2011; Lian 2012). A report based on the Chinese Journal Full-text Database (CJFD) regarding music therapy and special needs indicates that the

number of journals had dramatically increased, and especially journals on children with autism since 2009 (Li 2013).

Currently, pre-school education for children with special needs in China is identical to the education of typically developing children; there are is no special legislation applied by the Chinese government (Meng et al. 2007; Wang 2008). In addition, there are certain challenges and problems in delivering education for pre-school children with special needs: 1) The age of pre-school education registration is comparatively late; 2) The administration rate is low; 3) Parents and carers lack knowledge of music education; 4) The curriculum design does not fit the needs of special education with pre-school children; 5) Teaching materials are not upgraded in time (Zhou & Gong 2007; Lian 2012). To provide more contexts, Figure 2.1 presents the result of the 2009 survey regarding the drop-out-rate of school aged children with special needs. Table 2.6 shows numbers of music classes in the special education curriculum. There are also three continuous tables in laws and legislations of special needs education (Table 2.7-1, 2.7-2, 2.7-3) and demographic reports (Table 2.8).
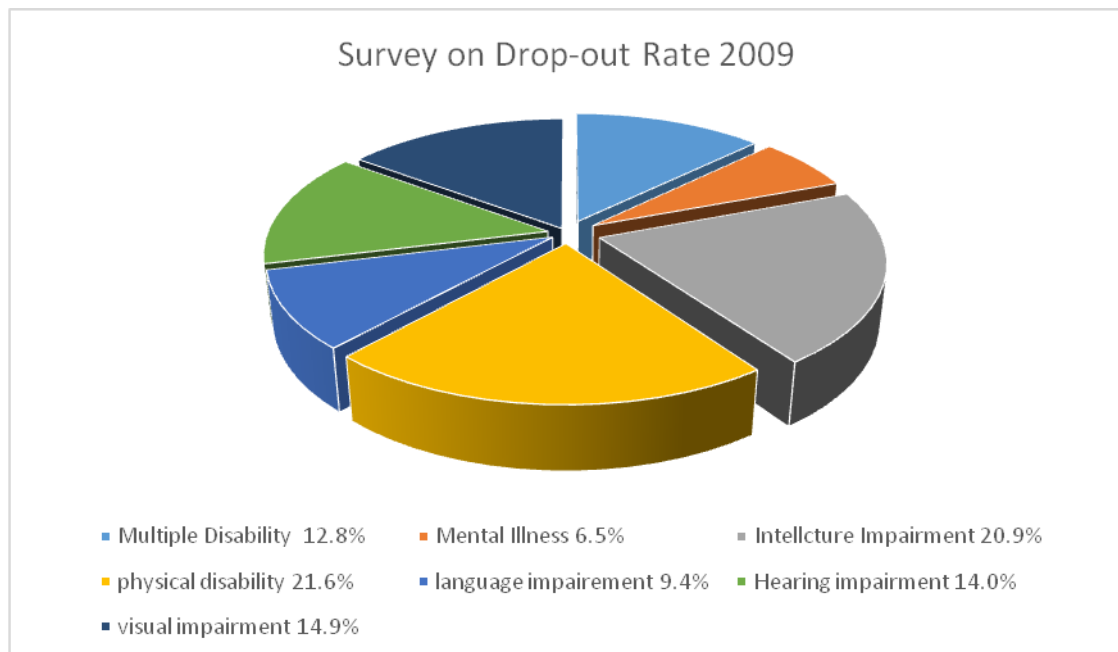
Figure 2.1 Ministry of Education, China 2009 Government statistics on drop out

Survey on Music Education in Special needs Curriculum			
1. Music Class in Speical Education Curriculum in China			
Years	Variety Level (Weekely based)	Total Classes (Annually)	Percentage of Total Curriculum
1994- 2006	Grades 1-4 / Grades 5-6 / Grades 7-9 — 3 / 2 / 1	646 Classes	7.40%
2007-present	Grades 1-6 / Grades 7-9 — 3-4 / 2	945 Classes	10-12%
2. Music Class in Speical educational Schools, Shengyang, China			
Years	Variety Level (Weekely based)	Total Classes (Annually)	Percentage of Total Curriculum
2000-2006	Grades 1-6 / Grades 7-9 — 2 / 1	576 Classes	6.60%
2007-present	Grades 1-6 / Grades 7-9 — 3-4 / 2	945 Classes	10-12%

Table 2.6 Music classes in special needs education curriculum in general, China and my research focus in City of Shenyang, N-E region of China (Yuan 2005).

	Status of Disability, Laws and Organisations in People's Republic of China -- 1 (1980-1989)			
Date	Published Law	Nature of Organisations/Foundations and Committes	Speical Needs Students Register	Teaching Plan, Scheme of Speical Education
1980			33055	
1981	The Trial Measures for secondary specialized school teacher allowance (Ministry of Education)		33477	
1982	First Legal mandate for the provision of special education (National People's Congress)		33673	
1983			35700	
1984		China fund for Disabled	39684	
1985	The decision of the CPC Central Committee on the reform of education system (State Council)		41706	
1986	Compulsory Education Law of People's Republic of China (The national order of the president)		47175	
1987			52876	The teaching plan of eight years full-time school for hearing impairement (Ministry of Education)
1988	The five year work guideline of the disabled of China (State Council)	Chinese Disabled Persons' Federation founded	57597	The diagram of sign language for hearing impirement (Shanghai Association for the disabled)
1989			77680	

Table 2.7-1 Chinese special education laws 1980 until 1989. During this period of time, there were no special needs educational law formed, but more attention paid and official guideline in this area.

		Status of Disability, Laws and Organisations in People's Republic of China -- 2 (1990-1999)		
Date	Published Law	Nature of Organisations/Foundations and Committes	Speical Needs Students Register	Teaching Plan, Scheme of Speical Education
1990	First Law on the Protection of the Disabled Persons (The national order of the president)		104358	The trial programme for primary school teaching with visual and mental impairments (Ministry of Education)
1991		The first officeal 'National Help the Disabled Day' -19th May has written into The People's Republic of China Disabled Protection Law.	85008	
1992	The detailed regualations for the implementation of the compulsory education law of the people's Republic of China (Ministry of Education)		129455	The draft of Speical education major in higher normal education (Ministry of Education)
1993	The people's Republic of China Law of teacher (National People's Congress)	The State Council's Disability Coordination Committee established.	168585	
1994	Education Law for Disabled (State Council) and On the development of children with disabilities mainstreaming work trial method 85 (Ministry of Education)		211404	
1995	The Education Law of the People's Republic of China (National People's Congress)		295599	
1996	Disabled children of compulsory education in the implementation of the work programme 95(Ministry of Education)		321063	Trial Implementation of the curriculum plan for hearing impairment
1997			340621	To conduct a comprehensive adjustment for special education curriculum plan (Ministry of Education)
1998	Interim provisions of the special education school (Ministry of Education)		358372	Braille scheme of Chinese double Pinyin (Ministry of Education; Disabled Persons Federation of China; The National Committee and the Administration of press and Publication
1999			371625	

Table 2.7-2 Chinese special education laws 1990-1999. During this decade, there was more legislation and the first law on the protection of disabled children was published. In addition, more organisations, committee and foundations were founded.

Status of Disability, Laws and Organisations in People's Republic of China -- 3 (2000-Present)

Date	Published Law	Nature of Organisations/Foundations and Committes	Speical Needs Students Register	Teaching Plan, Scheme of Speical Education
2000			377599	
2001	The cause of the disabled Chinese outline plan (2001-2005) -(Ministry of Education and Disabled Persons Federation of China)		386360	
2002			374457	
2003			364740	
2004			371813	
2005	Compulsory Education Law of People's Republic of China (Ministry of Eudcation)		364409	
2006	The Law fo Regulations on the Vocational opportunities for the Disabled (Ministry of Education and Disabled Persons Federation of China)		362946	
2007	The central and western regions of the special education school construction planning(2008-2010) (Ministry of Education)		419316	
2008	The revised law on the protection of disabled persons of the people's Republic of China (National People's Congress)		417440	
2009	On further with the special education development views (General Office of the State Countil)			
2010				Scheme of compulsory education curriculum （Ministry of Education)
2011				
2012				

Table 2.7-3 Chinese special education laws 2000 - present.

During the latest years, Chinese government and society paid great attention to special needs education and they have been developing more programmes, formalising the regulations, and revising the laws as concerning on the scheme of special education. The tables above also show the regulations and gather information about the registration of special needs students in schools as well as important organisations and teaching plans revised from 1980 until 2010.

1987 and 2008 Statistic Report						
Sample 1.5/1000 of the entire population from 1987 Report						
Number of population with disabilities Surveyed	**Hearing and Linguistically Impaired**	**Physically Disabled**	**Visually Impaired**	**Mentally Retarded**	**Mentally Ill**	**Total**
Number of population	26518	11305	11300	15235	2907	67265
Percentatge in Total Population Surveyed	1.68%	0.72%	0.72%	0.97%	0.18%	4.27%

Sample 1.93/1000 of the entire population from 2008									
Project type	**Entire population in China**	**People with Disabilities**							**Total**
		Visual Impaired	**Hearing Impaired**	**Physically Disabled**	**Linguistically Impaired**	**Mentally Retarded**	**Mentally Ill**	**Multiple Disabilities**	
Number of population	130948	1233	2004	2412	127	554	614	1352	8296
Percentage in entire population of people with Disablitity		14.86%	24.16%	29.07%	1.53%	6.68%	7.40%	16.30%	100.00%
Percentage of people with Disabilities in entire Chinese population		6.34%							

Table 2.8 Demographic report shows the change of people with disabilities of China 1986 – present (National People's Congress -NPC 1986; 1990).

Table 2.8 does not include people in Hong Kong, Marco and Taiwan. The table shows the proportion of disabled people among the entire population increased (NPC 1986; 1990). People with autism are still excluded in the latest survey in 2008.

China has a population of 1.3 billion of which about 6% are identified with different types of physical and mentally disabilities (ecns.cn). According to the 2008 National Report on Living Status of the Disabled in China, the Chinese prevalence of disabilities was lower than some other countries (Office of China's Disability Union and National Statistics Institute). This disparity results from the fact that children with other types of disabilities, such as emotional behavioural disorders, learning disabilities, and pervasive development disorder like autism are not included in the disability categories in China (National Report 2008).

In summary, China needs to pay careful attention regarding the special needs education domains. More recently, the special needs educators suggested that the right move for

handicapped children (sic) is integrating them into regular school system in order to help them to learn (Kritzer 2011), arguing 'our survey of primary and middle schools found that special-needs students attending mainstream schools are more likely develop better skills' (Liu Yanghong 2013, special education research institute of Beijing Normal University). According to this current trend of educational development in special needs, there is an urgent need to update complex and comprehensive approaches or interventions for teaching and learning in order to resolve special needs education demands, especially for young children with autism in N.E. China (Liu 2013).

Having explored the literature on the topic of music therapy, autism and early years special needs teaching in the UK and China, it was clear that my proposed research questions remained unanswered and that there would be value in researching 'what are the challenges of introducing music therapy techniques into early years special needs education in China'.

2.6.4 Methodological matters

Through studying a large amount of literature, I was able to classify and summarise the problems that rose in the research and their corresponding solutions. This played an important role in my research. Within the cited literature in this study, qualitative and quantitative methods were used in various research designs. Responding to this made me think that action research framework would be more appropriate for my project.

Some of the studies of music therapy have been experimental and robust in that sense. Edgerton conducted a randomised controlled trial study with reversal design for children with autism in 1994, the purpose of which was to determine the effectiveness of improvisational music therapy based on the Nordoff and Robbins approach. It was a quantitative study and consisted of three phases: a) intervention, b) one-session withdrawal of intervention after a level of consistency in responses was achieved and c) reintroduction of the intervention. In addition, the checklist of communicative responses/acts score sheet, was specifically designed for measuring the subjects' musical and non-musical communicative behaviors in this study. The results strongly suggest that improvisational music therapy effectively increased communicative behaviors for children with autism.

During the 10 weeks experimental study, each child was scheduled for one 30 mins session per week. Within the reversing design, the results showed that the children's attraction to music stimuli and demonstration of musical behaviors was related to the music therapy intervention. It showed the children's language level of high-low-high according to the CRASS measurement in the different phases of intervention-withdrawal-reintroduction. However, there are methodological concerns regarding the size for Edgerton's study. This is because the small number of participants (10 children) decreases the validity for the trial. In addition, the 10 week duration of the practice limited the number of phases. Before the Edgerton study, I was not able to find any controlled experimental studies which were conducted on improvisational techniques based on Nordoff and Robbins therapy.

There are more studies in my literature review that were designed in a similar way, for example the Geretsegger et al. (2016) study is a randomised controlled trial with large samples in a similar design within three conditions. However, the methodological challenge was a lack of the consistency of the measurement which affected the determination of appropriate and relevant outcomes, and interpreting results both on an individual and generalised level. In the Geresegger et al. study the assessors were blind to the study condition and completed rating in the complexity settings.

A longitudinal follow-up randomised controlled trial for children with special needs over five years duration was conducted by Kasari et al. in 2011. This study is one of the long-term follow-up studies for preschool children with autism (Kasari et al 2011). The descriptive data and documentation strongly suggest that joint attention and play skills are important for spoken language in long-term outcomes. Although the content of early interventions led to improved language ability, this was measured by the Expressive Vocabulary Test method systematically. But the EVT still hardly captured the complex changes and usage of the language itself for children with autism. The knowledge of the long-term observation method from this study has served as a reference and a guide to my thesis. For example, I needed to be aware of the density of the practice and the traditional attitudes to social communication skills which may affect the research. There was more literature, such as Buday (1995), which looked to test the effectiveness of signed and spoken words taught with music on sign and speech limitation by children with autism. Also worthy of note is Rogers (2010) research on the evidence-based RCT testing the comprehensive treatment for young children with autism via music drumming and other stimuli paired with melodic

patterns. All those studies shared the common ground of using measurement results to test the research hypothesis and analyse the causal relationship between a set of variables. Even so, it still hard to capture the accurate progress of children with their language and communication development and no one measure seemed ideal.

There were some qualitative studies among the literature discussed at the start of the chapter. For example, Silverman (2008) used case study to review the literature on music therapy, nonverbal communication and autism. Kern (2007) used two individual child case studies investigating that how songs promote independence with children with autism. Holck (2002, 2004, 2006 and 2014) used video recording to show interaction themes in order to discuss the effect of music therapy for children with autism. In addition, Lim (2011) explored how the perception of musical patterns incorporating applied behavior analysis/ verbal behavior approach improves children's language and vocabulary. Qualitative research methods have been employed in these studies and data collected in their respective specific contexts with case studies, descriptive and interpretative methods. However, to capture the progress of the children's communication ability is still challenging. More importantly, the ability and effort of the researcher is one of the main factors that influenced the research quality (Golafshani 2003). Therefore, the methodological concerns for qualitative research focused on the process leading to the social changes is more dependent on researcher professionalism, is more descriptive and interpretative (Cho and Trent 2010). The result of quantitative research presents as reliable with apparently objective hard data often regarded as irrefutable evidence (Hammersley 2007). But this kind of evidence cannot be obtained from qualitative types of study including action research. There are examples that illustrate qualitative research methodological concerns and how they are addressed.

Kern (2007) conducted two individual case studies to investigate the effect of songs on the children's daily routine. While the number of participants was too small to support generalisability of the findings in a positivistic sense, the detailed case study design added to the quality and validity of outcomes. Nordoff and Robbins also used case studies (1968, 1971, and 2004); they present a six-year-old, very remote autistic girl, who they engaged by carefully improvised music, which met her mood. This music induced foot tapping and helped her to evoke interpersonal communication physically with her body movement. They evaluated at the level of the individual child by applying video reviewing and note analysis to show the effects the music gained could be measured. There was no second checker or

inter- rater reliability checks to validate the work, however. Nordoff and Robbins case studies are low on the generalisability because of the small number of the participants, but together begin to build body of evidence. The case-histories demonstrate that the use of improvisational music with the child can establish communication behavioural patterns, but lack of rigour in the detail of each child's progress in communication is a small flaw. Even while researchers have solved the problem of capturing progress in social communication abilities to different degrees, there are still shortcomings.

Geretsger et al.'s (2014) studies involved professionals from ten countries and gave important theoretical and practical guidance to professional music therapists on the level of validity, creditability and trustworthiness. Although the research involved a larger number of participants, it is still difficult to generalise with an intervention that is individualised to the children involved and capturing children'communication ability is always an issue. It is not a problem solely of the research design, it because of the nature of the intervention that makes if hard to achieve irrefutable evidence. I have identified and analysed potential research methods in the next Chapter in order to help with my concerns, which were more about exploring potential than proving causality.

Chapter 3: Research Approach

Methods and Methodology

3. 1 Introduction

In this methodology chapter, I clarify my position and the purpose of the action research project including the appropriateness of using action research and my selected methods for answering my research concerns. To recap, my research aims and research question are as follows.

Primary research aims

> To explore how music therapy techniques can be introduced in the education of young children with autism in China to enhance their social communication development and enrich their programme of education.

Supplementary research aims

> • To explore how young children with autism in China respond to the introduction of music therapy in DCTM.
>
> • To experiment with the techniques to identify the components showing most promise for enhancing children's social communication abilities and general educational development and;
>
> • To engage music/education professionals in China in the task of developing an effective set of music techniques that they could use and from which young children with autism could benefit.

To meet the research aims my research question became clarified as: ***How can music therapy techniques be introduced to benefit the social communication development and educational experiences of young children with autism in China?***

3.2 Positioning, purpose of action research and overview

Reflecting on my research aims, I became convinced that the best option was to use applied action research. Identifying a research methodology for use in educational practice in real life settings is challenging. In order to argue that action research is the most suitable research methodology to use in my study, first I need to clarify what action research entails, and who carries out the actions.

Action research is used to explore and make changes in social contexts, not only in education, but other areas too (Noffke and Stevenson 1995). Action research can be distinguished from traditional research in the literature. It seeks change during and through the research whereas traditional research aims to find new ideas and generate outcomes that make differences over the long-term after the research is completed. My research focuses on the process of the learning and teaching practice which need to be explored in advance of or alongside the outcomes, therefore I saw an action research framework as fitting better than other traditional research approaches.

Different types of action research vary in focus (Noffke 1990). Koshy (2010 p.1) summarises key features among the many types, 'action research is a method used for improvising educational practice; it involves action, evaluation and reflection and based on gathered evidence, changes in practice are implemented; it is a situation-based; in action research findings emerge as action develops, but they are not conclusive.' Kemmis (1986 p.165) defined action research as:

> The systematic process of learning by doing – carefully observing the character
> and consequences of what one does with the tripartite aim of improving one's

own practice, improving one's understanding of these practices and improving the situation in which those practices are carried out.

Green and Levin (2007 p.5) state that 'action research is a research strategy that generates knowledge claims for the express purpose of taking action to promote social analysis and democratic social change'. However, according to Stige (2002, p.277), participatory action research focuses on the researcher's social responsibility with three dimensions: 'a) research for change; b) participatory influence and c) empowerment'. He also suggests 'action research is related to practice labelled as participatory research … Collaborative research' (Stige 2005 p.404).Somekh and Zeichner (2009, p.467) identify five different types of educational action research based on worldwide theory and practice:

a) Action research in times of political upheaval and transition; **b)** action research as a state-sponsored means of reforming schooling; **c)** co-option of action research by Western governments and school systems to control teachers; **d)** action research as a university-led reform movement; **e)** action research as locally-sponsored systemic reform sustained over time.

Moreover, there are other categorizations of types in action research, such as instrumental action research or principled/participatory action research. I would call my research framework participatory action research. This reflects my concern in this research project to explore a way to change a social situation for children with autism in China. Participatory action research (PAR) offers a way to work with teachers to implement suitable techniques to change a situation for children's learning progress and teachers' teaching practice, particularly, through the systematic planning and actions to empower children's communication ability. This is different to instrumental action research, which purely focuses on improving technical action and achieving a practical outcome without considering the value, principles and theories or problematising the underpinnings in the practice (Somekh, 2003). In PAR, all people involved in the research project seek to improve their understanding and capability. It is participatory, and involves all participants as part of a shared enquiry. It is research with people, who can be transformation agents, rather than research on people (McNiff 1988).

In my study, the core concern was to explore how a set of music therapy techniques could contribute to learning for young children with autism in China. This involved exploring how the techniques could be accessed and used by local professionals and teachers in order to change the existing situation. Exploring the responses of young children and teachers to those techniques would help gain more understandings, and potentially improve the quality of learning and teaching in special needs education. Although the national context of special needs education in China is changing, this action research was not sponsored by national or local government or even by a university; it was my own initiative in response to a situation.

Justification for my approach is further based on Whitehead et al. (2003) and Lingardet al. (2008) who considers that action research is an approach frequently used for improving conditions and practices in a range of social environments. Similarly, Parkin (2009) suggests the aim of carrying out action research is to bring about change in certain contexts. In addition, Carr and Kemmis (1986) and Kemmis and McTaggart (1988) point out that action research is involved when considering practice in the research project and includes the phases of planning, acting, observing and reflecting as spirals of the ongoing process. In my study I focused on exploring the classroom-teaching techniques involving different types of action research that fit in with different stages of my practice. Somekh (2006) suggests that there are five key elements for classroom based action research. These include integrating research and action; collaborative partnership of participants and researchers; change and development in a natural situation; a series of flexible cycles; and lastly reflexivity and sensitivity with respect to self. All of these elements were involved in my research design. In order to reflect upon my study of the classroom teaching of young children with autism, the initial step was studying and discussing existing knowledge and current practice. This involved focus group discussions with an expert group to ask questions that helped me to reflect. Bringing in ideas from this expert group and observing the group conversations was a strategy to enhance my power of explorative evaluation (following Nind 2003).

The second step was actively observing and implementing the actions, over which I have collaborated with the early year teachers involved and the expert group. The aim was to develop accessible music therapy techniques for use by local professionals and teachers in a series of flexible action cycles. Thus, the following step was the data collection and analysis.

However, in PAR the ideal may be to collect and analyse data together, but like many researchers, I was working in the real world where teachers had limited time. The limited time made it particularly difficult and frustrating for the teachers and me when sharing progress and observational data with others. Postholn (2010) argues that the analysis and data has to start as soon as the researcher begins the research fieldwork. Therefore, the exploration focused on changing the situation for the better for the children, facilitating personal transformation, reflection with respect to teaching practice and improving of teaching and learning effectively within real life settings in the research project.

The last and the most important action was reflexivity on the part of the teachers and me, with respect to the field notes and reflection journal. This was essential in not only the data collection and analyses, but also the whole study. McNiff (1988 p.45) suggests that 'generative action research enables a teacher-researcher to address many different problems at one time without losing insight of main issue … teachers may benefit considerably by taking a close, critical look at their own practice.' A fundamental principle of my action research was self-reflection, which would help me identify the problems, develop self-awareness of subjectivity and plan/replan the framework, and take advantage of my position as both of insider and outsider throughout my approach (Locke 2014). The reflecting the views of Locke and McNiff my research is based on a 'living theory' (Whitehead 1991) in that it aims to improve teachers' and my own learning and teaching process rather than to produce theory (Elliot 1991). There is also a metaphor used by Kemmis (2009 p.465) who describes how 'action research can be kind of music for this dance'; this mainly emphasises his idea of 'practice –changing practice' (Kemmis 2009 p.465). Thus, I was choosing action research as the most suitable framework in my study in order to respond to my research questions, which helped me to address the research concerns and unearth evidence from the data. This research built on the broad literature review and my professional experience as a music therapist and educator in China, and was theoretically based on the existing knowledge about music therapy and education of children with autism as well as the theory of action research.

Understanding of my positioning in this action research project is important. Mclntosh (2010) emphasises transformation of the abstract values into real life settings within action

research and an awareness of practitioners' and researchers' power to influence the project. However, Reason and Bradbury (2008) have a different view of the positioning of the researcher's identification, as they label the action research as first person, second person and third person. In my research contextualisation, following Bradbury and Reason's theory, this was second person action research as I was someone who was an external specialist or outsider and researcher. However, I always refer to myself as 'I' in the study, as I was always at the core of my research and someone who directly worked with the participants; moreover, I was the core reflective person too. Participants could not behave in changed and changing ways without my modelling, exploring, supervising and reflecting.

I refer to myself as an outsider to the early years setting in which the research takes place, but my actions would be in the boundaries between outsider and collaborative insider throughout my research. Thus, I identified myself as having dual roles in the research: researcher and practitioner. Cain (2011) argues that the dual roles create certain tensions when teachers research their own teaching, particularly in classroom based action research where how teachers position themselves in the classroom is the essential issue. Hammersley (1993, p.433) points out that teachers-researcher must be aware that 'each position has advantages and disadvantages' and they are both 'in authority and an authority'. This was the essential idea in my study because the dual role followed fundamental theory in an action research-classroom based project. O'Leary (2012) also suggests that it is useful to examine the insider or outsider position through the lens of social identity theory. To interpret the insider and outsider in this study was important as their relationship across the two roles were collaborative and explorative in carrying out the research. Through the above discussion I have shown that choosing action research as my methodology was purposeful and suited to my ambition not only to support professionals and practitioners in seeking ways in which they could provide good quality musical techniques by transforming the quality of teaching related activities, but also to enhance the social communication of children with autism.

Having explored the definitions and the attractive features of action research for my purposes, I now explain further why choosing PAR was the best approach. Hopkins (2002) suggests very interesting dimensions that indicate that action research requires

improvements in the research procedure and process combined with a variety of actions and participant attempts to engage with reflexivity in their own practice. To respond to Hopkins' suggestions in my study context, I created a collaborative community and shared my ownership of the data and techniques to help the adult participants become embedded in the research project. Although I was an outsider to the naturalistic context, I was always an insider in terms of the research action. The participants and I worked very closely together throughout the research in planning, acting, evaluating, reflecting and replanning. This action research framework was designed so that I would initially be an outsider, as stated, and then became a collaborative insider in the created research community, negotiating ownership within the research community was also important.

A systematic action plan also enhanced the participants' understanding and sustained a positive impact in order to respond to the on-going questions and educational goals. The action research cycles as the work by Koshy (2010), Somekh (2006), Kemmis and Carr (1986) describe, include the cycles of planning, acting, observing and reflecting. These have helped me to map out my practical plan in the real educational setting. They protected me so that I did not 'lose myself in the action research process' (Noffke and Stevenson 1995 p.89). Action research is concerned about the process of exploring the problems and gaps in teaching and learning and this would enable me to consciously focus on my questions throughout my research and to allow change in terms of my practice. In other types of research, there are always experts who know better, however, the action research process would teach me to trust myself, my thinking, my reflection, and my ideas in a professional way with respect (Noffke and Stevenson 1995).

3.3 Quality of data

Addressing how the action research could or should meet the criteria of validity and reliability is also an important issue that needs to be discussed and clarified. Reliability in particular is mainly discussed in relation to the quality and rigour of quantitative research (Golafshani 2003). The concepts in addressing the quality of the research process take on different importance and meanings in qualitative and quantitative research. In qualitative research validity is about appropriateness, and the concepts of credibility, transferability,

consistency, dependability and trustworthiness are more often used to indicate quality in the research process (Hammersley 2007).

Qualitative research seeks understanding of social phenomena in a real world setting and research findings unfold naturally from specific context settings within the research community. Therefore, reliability and validity in qualitative research usually depend on the ability and effort of the researcher (Golafshani 2003). Within qualitative research, this means that researchers should not be only aware of their role, but also keep an eye on changes during the study. In addition, researchers have the ability to record these changes, do analysis and be self-reflective as the basis for the next phase of the study or guide of the research plan. As Creswell and Miller (2000) identified, researchers validate their studies in fresh ways such as how the researcher determines the time of the field-work, whether the data build accurate themes or categories.

In terms of building the credibility in qualitative research, Denzin and Lincoln (1994) argue the importance of presenting and analysing the complex social situational phenomena surrounding data. In my study, for example, the children's progress with their social communication during the sessions would be shaped by the real circumstances in which participants' issues occur and I would need to catalogue and discuss these. Too often, too little attention is paid to the impact of the tiny changes of facial expression, soft sound or the ending of the sessions has upon the children, especially with non-trained therapist or educator. In my study I endeavoured to look at the children' progress data captured from the observation, field notes, self-reflection journals and video recordings, to include contextual information.

Banks (2007, p.121) argues that visual data allows for 'uncovering the previously unknown or unconsidered dimensions of social life'. Thus, in my action research project, visual data has been used to add to the valid insights obtained via observing, analysing and theorising children's behaviours, responses and musical materials. In the action research project, I work to the lived worlds, such as the children' classroom, continuities and learning environments as places to observe, locate and explore, therefore visual data are an important part of this. For example, video reviewing allows for deeper understanding of the emotional responses of the children or early year teachers in the classroom learning or teaching. In addition, it may offer new insights into practice from observing gestures, facial expressions and tone of voice. Most importantly, it may encourage reflexivity in research (Weber, 2008; Klein and Wilson 2010). In particular, video data and snap-shot elements from the study provide evidence of

the researcher's relationships and provide the opportunity for the reader 'to be able to critique the researcher's accuracy in description of the setting' (Banister and Hodges 2005, p.8). It also helps to build credibility on the trustworthiness of the research, which provides the context of time unfolding. Banister and Hodges (2005) suggest that visual data may extend information to the reader that 'allows for greater trustworthiness' (p.9). This opinion influenced me to make a decision that using video data would help to give a chance for the reader to judge for themselves.

Cho and Trent (2010) point out that transformational validity in qualitative study refers to a process leading toward social change, which is achieved by the researchers' ability. Lincoln and Guba's (1985) definition of trustworthiness is also linked to transactional validity. However, Cho and Trent (2010) make another important point that applying strategies of triangulation and member checking may increase the integrity of the research. To this end, many authors identify the quality project in qualitative research as routinely applying member checking, triangulation, prolonged engagement in the field, thick description, researcher reflexivity and collaboration (Creswell and Miller, 2000), in order to seek research credibility, trustworthiness and validity during the study. Particularly, in my action research project, I engaged with more than one of these procedures as I outline below.

3.4 Overview of the action research plan

To recap, using PAR I was aiming to explore certain music therapy techniques(combined with principles from Intensive Interaction and some of the structures inspired by TEACCH) in developing the social communication social skills (imitation, initiation, turn-taking, joint attention) of young children with autism in China. Putting the action research design into practice comprised:

1. Recruiting participants and sharing with them the why and how of the study;
2. Designing the Development of Communication Through Music (DCTM) intervention that we would use to explore how young children with autism and their teachers would respond to a new set of music therapy techniques and musical components. We would also be experimenting with different activities and different style of music;
3. Planning the action research cycles to provide a logical thread and systematic process;

4. Planning the framework of methods in data collection ; and

5. Planning how I would analyse the data and make meaning of the data to interpret and tell a story to the audiences.

Recruiting research participants involved recruiting children with autism, early years teachers, a director of the local community centre, heads of special needs, university professors, and the official governor of education department North-East, China (see Table 3.1). The overall plan was for two main action cycles of equal duration to be conducted in a local community centre for 16 weeks in total. There would be focus group discussion with an expert group at the beginning and end of each cycle. I, as a professional music therapist would implement the DCTM intervention in cycle 1 for eight weeks and hand over to local early years teachers to adapt and implement the techniques in cycle 2 for a further eight weeks. I would be acting as a researcher-educator, independent observer and music therapist and therefore also a participant in this action research project. Early years teachers would be acting as the observers in cycle 1 and main practitioners in cycle 2. Additionally, the early years teachers and I, with other participants, became a research community in order to complete this research practice. Throughout we worked in four steps: identifying individual issue, planning a framework, delivering the session and reflecting on it. This would apply to each of the cycles and to each music session. Each cycle involved working with five children each from two groups and attending a DCTM session individually for 30 minutes per week.

The child participants were divided into group 1 (children aged 4-5 years) and group 2 (children aged 6-7). Reasons for having children in two groups were: 1) To reflect their different human development; 2) to allow experimentation with different styles of musical intervention (pure Chinese and Nordoff-Robbins musical components); and 3) to explore how teachers and local professionals overall would respond to the musical therapy techniques and musical activities and to understand which might be better for them to use with young children with autism.

I conducted focus groups discussions with the expert group, at the three occasions of beginning of the research, after eight weeks (cycle 1) and also the end of the research. Each focus group lasted 60-90 minutes and took place in a semi-public area. These were systematically planned with cycles of discussions and designed to be enjoyable and

informative. Each focus group discussion was in a semi-structured format including a series of questions that I gave out before each group meeting and some extended questions used to further probe for ideas and gather more information. The question list designed for those three focus groups is in Appendix 1.

The decision about the period of time for each intervention cycle was based on the literature, as Edgerton (1994) conducted her music therapy practice with children with autism in ten weeks and was satisfied with the data collection and results. Moreover, I only had limited time for the fieldwork and this was only the first attempt at exploring the potential of DCTM.

3.5 Participant recruitment

There were different stakeholders who I approached directly or indirectly through the schools or community centre database. Expert/focus group participants were recruited via an introductory 'recruitment' letter, an example of which attached in Appendix 2 with all the information about this study. The participants for the focus groups were selected based on their expertise (Casey and Krueger 2009). Other participants were recruited based on my research criteria (Table 3.1).

Previously I worked in the University located in Northeast of China and I did practical work in the community educational settings and special needs schools locally. There was always a dual role for me in that I acted as a supervisor and practitioner in the fieldwork. I could approach the participants to work with me on the DCTM because I am a professional music therapist and academic in China with good networks to the local community; this had the advantage of making the recruitment possible. Even so, the recruitment was not straightforward because this research project was not sponsored by either government or universities.

Group of participants	Role and Responsibilities	Age	Pattern of attendance	Reason for recruiting
Children with autism	Up to 10 pre-school children; played important roles in DCTM sessions of 30minutes weekly; children in group 1 were: YuJing, Xiaoxin; Zhangdong; Ranshao; Xuanxuan (pseudonyms); children in group 2 were: Qiqi, Zhongzhong, Yanjin, Qiabao, Lele;	4-7	16 weeks	Met criteria for the study focus as young children with autism and major impairment in communication and social interaction, but no visual or hearing impairment
The early years teachers	Tongtong; Xiaozhing; Zhouzheng; Mingming, who participated as the independent observers, providing observation data, video recording and contributing to reflection in cycle 1 and took over and implemented DCTM in cycle 2 for further 8 weeks. Also kept up observational data and some video analysis and reflective practice.	18+	16 weeks	Knowledge about special needs education and autism; involved as practitioners working with the children
Special needs schools Head teacher	Up to 3, participating as an expert advisor and member of the focus group.	Adult	3 occasions across the 16weeks	Professional in special needs education of all areas and knowledge of curriculum as well as educational management.
Students practitioners	Up to 2, responsible for classroom arrangement and video recording	17+	Across the 16 weeks & 3 occasions for focus groups	Some knowledge about the music therapy techniques and special education

（Continue'）

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Senior Consultant in special education	She provided an overview information about special needs education in North-east, China and an expert in the first focus group	Adult	1 occasion through first cycle.	Deep Knowledge in special needs educational research with local schools, in Northeast, China and interested in music therapy implications for special needs school curriculum
Professors	Up to 3, participate as an expert advisor and member of the focus group.	Adult	3 occasions across the 16 weeks	Expertise in music and music education, special needs education and autism as well as curriculum design
Director of the rehabilitation center	Participating as an expert in the focus group	Adult	2 occasions across the 16 weeks	Representing special needs education and education management
Professional music therapist (Researcher)	Major responsibilities as a music therapist who participates as practitioners to implement DCTM in cycle 1 (8weeks) and a supervisor to teachers for a further 8 weeks. Responsible for unifying the research participants, modeling the techniques, supervising the other practitioners' work as well as the discussion with the experts group. The dual role of researcher and practitioner throughout the whole project.	Adult	16 weeks	specialist in music therapy, special needs education and music education

Table 3.1   List of participants and their roles

3.6 Development of Communication Through Music (DCTM)

In the intervention part of the action research all the musical elements and activities needed to focus on the introduction of music therapy techniques supported by Intensive Interaction principles into practical work. The goal was to bring about improved understanding of how music could be used to help young children with autism and the adults communicating with them and teaching them.

3.6.1 Designing DCTM Protocols

Development of Communication through Music (DCTM) uses musical activities, musical elements of melody, rhythm, form and instrument in spontaneous communication facilitative for children with special needs, particularly in young children with autism. I designed DCTM to apply music therapy techniques in early year special needs education in China, including elements from other approaches such as movement, structure and Intensive Interaction principles along with musical materials. In DCTM, therapeutic musical activities can be varied in terms of short- term goals, complexity of the experience, pre-composed musical activities and local commonly used materials.

The literature review helped to establish the musical elements and activities that I would need to focus on in introducing music therapy techniques into practical work. The goal was to use musical and related materials to enhance and facilitate social communication development in young children with autism. Thus, I planned DCTM in this way. I needed to adapt the therapeutic sounds or instrument with singing in order to:

- elicit the vocal production of target words via turn-taking and imitation
- enhance the understanding of speech and language
- engage and develop joint attention.

3.6.2 Deciding on materials for use in DCTM

Composing and editing musical songs for DCTM was not an easy task. According to music therapy experiences and research findings (Berger 2002; Miller et al. 2009; Thaut 2013) the most often developed communications after music sessions were located in rhythmic music and music entirely composed or edited in major keys. The meter of songs and rhythmic figures can be reflected in the number of targets words, verbal and nonverbal communication needs. A single piece of music needs to be in a simple structure with a limited vocabulary. All music needed to be used in a distinctly different style in the same session of DCTM because of the complex needs of the children.

Music is composed of many separate yet interconnected components. All my chosen music included melody, understood in terms of melodic contour, rhythm, harmony; text, understood in terms of lyric; sound quality as in timbre; and dynamics as in musical prosody. I composed and edited a number of songs beforehand and used them in this study. All the songs included target words and aims based on my ideas or the teachers' suggestions. Each song was composed or edited using a simple structure with a distinct style. The melodies of all the songs were within a limited pitch range, and used a limited amount of vocabulary, close intervals and a repetitive melodic contour. The target words in each song were emphasized by the rhythmic and harmonic structure in order to preserve the prosody and speech rhythm.

Music for DCTM would need to be played at a flexible tempo to help children with their communication needs. The tempo could be improvised by the teachers according to the situation in the class. It might attract a child's attention if played fast when a child tends to run, or played very slowly if the teacher wants to communicate verbally with the child, it might provide enough time to produce target words. Selected instruments were also seen as important for a music session that shared the child's attention in order to communicate

via instrumental playing. For example, a child might respond to what the teacher played with his/her favourite percussion instrument. DCTM meant the same melodic contour should be repeated more than twice and a similar rhythmic accompaniment should be used for all phrases in a major key song. The intervals in each phrase needed to be close together and the phrases should be arranged repetitively. Music in a major key keeps the child's attention and provides optimal level of stimuli for communication acquisition. Interestingly, children with autism respond more to upbeat music in a major key, but slow songs in minor key (Robbins and Robbins 1995). All of the songs would be played live during the session and involve improvisational techniques. Each song would mainly have a guitar or piano accompaniment, and may use percussion instruments when needed. Playing and singing them live was intended to engage and share children's joint attention more easily.

3.6.3 Educational implications and music therapy techniques for designing DCTM protocols

Children with autism have improved their learning and communication abilities after receiving a short term music intervention (Edgerton 1994). Some children with autism have an intact ability to perceive music patterns and respond verbally or musically including imitation, verbal and nonverbal interaction, sharing attention (Nordoff and Robbins 2007). Nordoff and Robbins' (2007) music has an impact on children's ability to communicate, who tend to be more motivated to imitate and learn verbal sounds through rhythmical syllables, spoken, clapped or sung (Berger 2002).

Combining music therapy and other techniques in DCTM was important. The interventions and strategies suggested below were designed with development of social communication in young children with autism in mind. The primary music therapy technique for increasing communication ability was to take every chance to respond to the music instruction and

other cues with music improvisation techniques. For example, the early years teacher or music therapist says "hello, hello, x x hello, who is coming" and then sings "hello, hello, x x hello, who is coming, who is coming, it is a music time!" repeating this greetings for several times. If singing is a bridge connecting the child, soon after, the verbal response may appear with the singing. Therefore, during the DCTM intervention or beginning of the communication involvement, singing the entire instructional stimuli could be effective.

The goal areas for the DCTM intervention included:

1) Educational skills (e.g. counting, listening skills and cognition of colors/subjects); Self-expression and self-esteem -one of the main goals of music therapy in the special needs education is to develop self-expression by building up self-esteem during the music session (Daveson and Edwards 1998).

2) Social communication includes: a) Spontaneous communication or initiation - core learning needs in educational settings (Scholar 1998; Holck 2002); b) Joint attention (sharing attention) and sustained attention. Gaining joint attention skills represents an essential stage in early development as the foundation of the development of language, communication and social interaction (Kim et al. 2008). Sustained attention is when, during the continuous and repetitive activities, the child has the ability to maintain a type of behavior; c) Imitation - vital in the development of children with autism (Holck 2006). In this project, imitation is divided into verbal imitation and physical imitation. It is a way to build up the connection with the child in the beginning stage. Particularly, physical imitation is the ability to copy and imitate another person's motoric movements, such as shape, duration, speed of movement and Intensive Interaction skills; d) Eye contact - a form of nonverbal communication; e) Turn-taking - the reciprocal interaction in a conversation and a fundamental element of communication.

3) Musical responses: Understanding of music and language in both children and practitioners; Rhythmic response; Social interaction - the interplay and/or mutual influence between two or more people and each other's behavior;

4) Creatively and confidently using newly adapted musical techniques (grouping them into groups)

The (vertical) structure of an individual music session was designed as follows:

- First, about five minutes of free playing with talking, playing with toys or some instruments. This also gave early years teachers' opportunities to develop their teaching philosophies with comparatively no music therapy techniques limitation, and potential in their own imaginations.

- This was followed by 25 minutes of music focused session, starting with a pre-composed greeting song using the child's name and the therapist or teacher's name (also dates and weather conditions according to the real situation in the classroom). The musical interventions include, such things as, vocal imitation, instrumental playing, turn-taking, imitation, and 'go and stop freeze game, counting songs, possible initiation of a child with encouragement by me or the teachers. There were different styles of pre-composed songs to use for body movement purposes and other situations with possible improvisation techniques.

- The music session finished with a Goodbye song, which helped children understand that it was now the time to stop the playing or session. This developed more awareness of the idea of education and class.

I now provide some examples:

Intervention I

Stop and run or 'freeze' games

Instrumental playing with the dynamic movements

Goal areas: Imitation, turn-taking, academic skills or counting and listening, sustained attention, joint attention, self-confidence and self-expression, eye contact etc.

Musical experiences: Singing or playing to the live music or song. For example: Let's run, run quickly run, ready to stop now.

Or Listen to 'Let's walk, slowly walk, and ready to stop now. (Chords progression)

Playing Instrumental while changing the orders, say or sing 'run, walk' or jump, play instruments for echoing the beats.

Next I outline the strategies used in DCTM: Firstly, the teacher utilises the musical or verbal stimuli in the musical activity. The music therapist or teacher should use live playing or singing because they can repeat any part of the music if needed. If this intervention is being introduced for the first time in the music session, the teacher or therapist might play the song with the assistant and provide opportunities for the children to listen only. With close observation of the children while presenting the music, the teacher then considers the appropriate tempo and adds verbal or instrumental prompts.

Secondly, the teacher uses percussion instruments for dynamic arrangement needs. Diversifying the rhythm and beats diversification are the main elements in this activity. Implementing those might provide the children with more chances to develop a rhythm pattern that is critical for their communication development.

Thirdly, the teacher encourages the child into singing, or singing and playing, the entire song by imitation or memory. Eventually, the children might sing the song by imitating, but understanding the meaning. However, the children might unconsciously recite the music after or outside the music session. Those simple imitative singing and playing activities

become an effective reinforcement for the consolidation for children to achieve communication skills.

Finally, the teacher or therapist might change the lyrics or introduce new subject areas with the same melody song when the children show the ability to respond to the movement's orders in the music. The change of lyrics in a song aims to increase the generalization of verbal sounds with young children with autism.

3.7 The action research cycles

The research design surrounding the introduction of DCTM incorporated action research cycles and micro cycles within individual music sessions. The following figures (Figure 3.1, 3.2, 3.3, and 3.4) show my action cycle process.
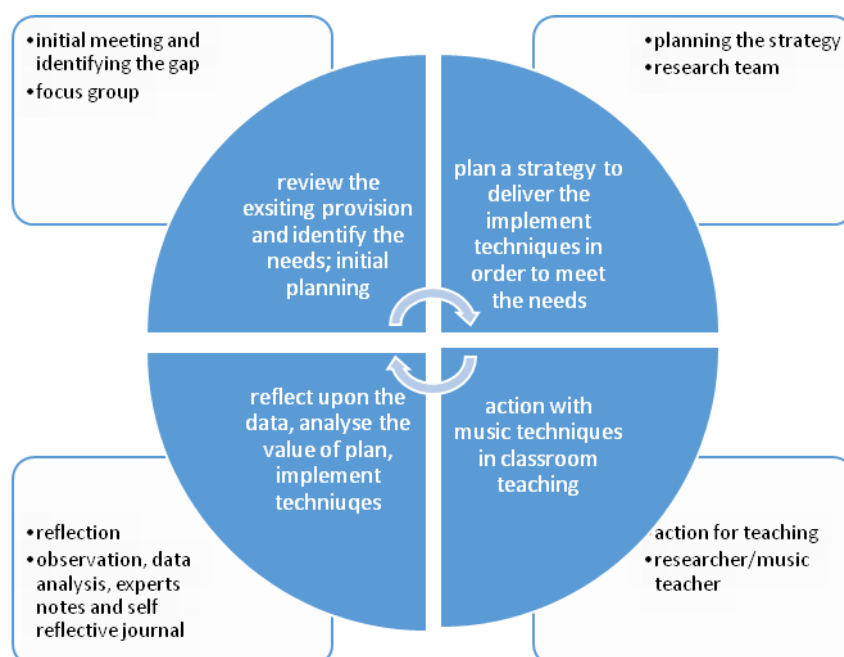
Figure 3.1 Action research process

Figure 3.1 shows the steps of the action in my research project across at the first and second cycle. The second cycle was modified and conducted with the same principles as the first cycle. The second cycle was intended to explore teachers' responsiveness within a new set of musical techniques and their own teaching practice with the interventions that were introduced in the cycle 1. In addition, the on-going needs of the children and teachers' participants in the different stages of the research were also considered and the cycle 2 developments was based on the recommendations, suggestions and reflections coming from the first cycle.

Figure 3.2 shows the relationship of the action cycles. The action cycles were identical in terms of research principles, but the purpose and interests were different in the different research cycles.

Group 1 Children aged 6-7 (26.12.14-11.2.15) I introduced DCTM with edited Chinese materials in the session. I also analysed the video recording for each session in order to plan the next session.

Group2 Children aged 4-5 (26.12.14-11.02.15) I implemented Nordoff and Robbins melody combined with Chinese lyrics in the session. I also analysed the video recording for each session in order to plan the next session.

cycle 1

Cycle 1 & cycle 2 characteristics in common:
1) Child participants

2) Individual session format

3) Adopted musical techniques and interventions

4) Place, environment

and length of the practice

5) Methods of data collection and analysis

Group1 Children aged 6-7 (24.2.15-21.04.15) The early years teacher Ming adopted musical techniques into her classroom teaching with edited Chinese materials. Ming also analysed video recording in order to plan next session under my assistance.

cycle 2

Group2 Children aged 4-5 (24.02.15-21.04.15) The early years teacher Tong adopted musical techniques into her classroom teaching with Nordoff and Robbins melody combined with Chinese lyrics. Tong also analysed video recording in order to plan next session under my assistance.

Figure 3.2
Relationship

There were micro- action research cycles under the overall action research cycles in the process of this research project, this time at the level of individual music sessions. The individual music session process was designed as a spiral involving amendment and continuousness towards the best intervention we could achieve in the situation. The Figure 3.3 also shows the process of action research cycle applied in each of the individual sessions.

An individual session template design of the basic intervention is outlined in Figure 3.3.
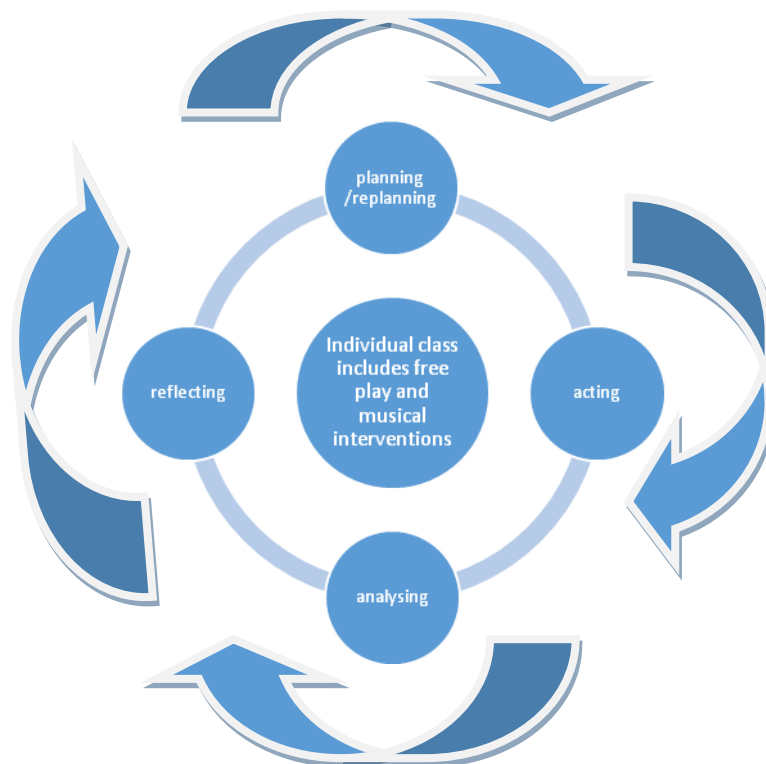
Figure 3.3 Micro action research

Figure 3.4 shows a mini micro-version of action cycles which associates with the other two action cycles. I anticipated that improvisation would be the key issue during the music session or classroom teaching. It was not only music therapy techniques that would need improvisation, but also ordinary teaching. A well prepared lesson was important, but the idea of improvisation was even more essential for children's learning. Each session could represent an even smaller dimension of action research as the teachers and I made decisions based on observation and reflection in the moment.
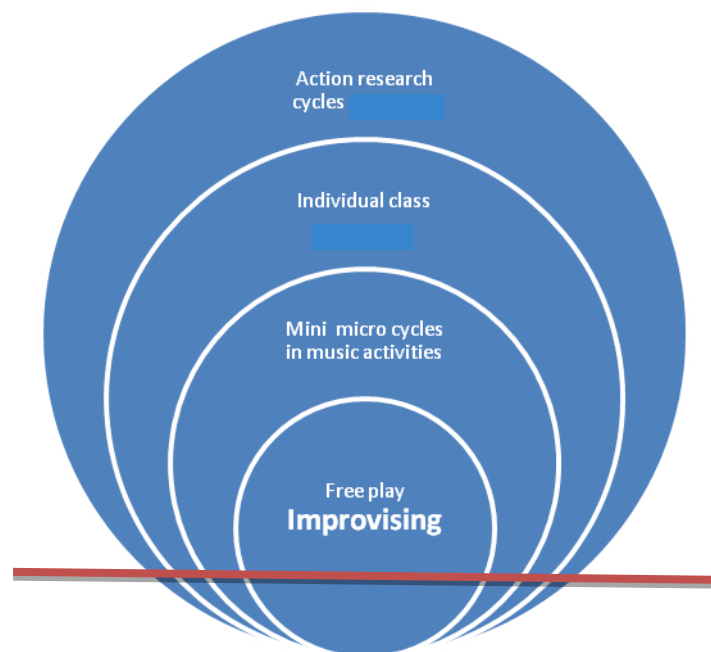
Figure 3.4 Links between layers of action research-improvising is the key

3.8 Methods of data collection

I used multiple methods to collect or generate data as use of a single method was inappropriate given the complexity. Thus, I did not simply rely on one particular kind of data, such as visual data. To inform the intervention and understanding of the context, I conducted focus groups and analysed existing documents and evidence about the children's needs and progress (see Table 3.2). To explore the DCTM intervention, I conducted systematic and participant classroom observations and used video and audio recording and transcriptions, combined with assessment scales, field notes and reflection journals. Next I elaborate on each method, describing what the method is, how I applied the method in my action research, the benefit of using the method and ethical issues. Table 3.2 shows the data

collection methods that were employed in the fieldwork; those in bold indicate the most

important methods for each purpose.

Purposes	Methods
1. Exploring how children respond to musical communication, e.g. rhythmic movements; familiar melody stimulus etc.	**Video recordings and transcriptions with thick description,member checking self-reflexivity and collaborating with assessments scales**; field notes and journals; participant observation; systematic observation and unsystematic observation; focus group occasionally
2. Exploring the children's level of musical, verbal and nonverbal responsiveness.	**Video recordings and transcriptions with thick description, member checking, self-reflexivity and collaborating with assessments scales**
3. Exploring how children respond to the different style of music through the turn-taking or self-expression etc.	**Video recordings and transcriptions with thick description, member checking, self-reflexivity and collaborating with assessments scales;** field notes and journals; participant observation; systematic observation and unsystematic observation; focus group occasionally
4. Exploring how local early-years teachers respond to the newly musical techniques and how they creatively and confidently adopt to them.	Video recordings and transcriptions combined with assessments scales; **field notes and journals with thick description and member checking;** participant observation; systematic observation and unsystematic observation; focus group occasionally;
5. Exploring how children and local early years teachers or therapist develop their reciprocal interaction during the practice.	Field notes and journals; **video recordings and transcriptions with thick description and member checking with assessments scales**; participant observation; systematic observation and unsystematic observation; informal conversation;
6. Exploring how early years teachers develop their knowledge in music and pre-teacher-training and in-service teacher training effectiveness.	**Focus groups, self-reflexivity, member checking and collaboration; participant observation; systematic observation and unsystematic observation;** video or audio recordings and transcripts; field notes and journals; information discussion or conversation;

Table 3.2 Methods fitted to research purposes

3.8.1 Focus groups

Casey and Krueger (2009, p.2) state that a 'focus group is a special type of group in terms of purpose, size, composition and procedures'. The aim of focus groups is to provide insight into concerns and problems, planning and goals, feedback and information, as well as further suggestions and recommendations (Bagnoli and Andrew 2010). In addition, Ryan et al. (2013) write that a focus group is a particular form of interview in which a researcher asks questions about a specific topic and participants interact with each other. It investigates collective views and allows for more freedom in response. Focus groups are not natural (Morgan and Kreuger 1993) and the crucial features are the researcher prompting participants to interact and to reconsider their understanding and experiences (Kitzinger 1994).

The aims of using focus group in my study were, firstly, to generate knowledge and data about Chinese early years and special education contexts and, secondly, to receive feedback and guidance for modifying practice in action research. The focus groups in this project had a dual role that combined a research function and an action function. In addition, the group discussion could act to advise or steer the direction of different stages of the research, and lead to unexpected but useful perspectives from professionals and experts in the areas of autism, special needs education and music. Transcripts of the focus group discussion would provide important evidence for my research reflection.

As explained above, the participants in the focus groups were all recruited locally from the Northeast of China. They included head-teachers of local special needs schools, directors of community centres, early years teachers at children's centres, professors from local universities and province governors from the education department. Each focus group contained five to six people. Informed consent was sought from all the focus group participants before the first interview. In addition, it was necessary to ask the individual participants throughout the interview process whether they were happy for the conversation to be used as part of the research. A local point of contact was established so that they could withdraw their consent at a later date. The participants could also contact me freely at all times with any concerns regarding the research practice.

There were three focus group interviews, conducted at the beginning of the project, after the end of the first cycle at eight weeks and at the end of the research project. The discussions lasted 60-90 minutes. My approach was to lead a semi-structured group discussion and to create a supportive context for exploration through interaction within the group.

The focus groups helped me to gain a comprehensive understanding of the key characteristics and issues of my practice and that of participants. Moreover, the process helped me to broaden my research field: for example, the participants discussed how teacher's in-service training, reflexivity and exchanges with academics are the most important components of their teaching and personal development (Kreuger and Casey 2015).

The topics covered in discussion included:

i) General picture of special needs education in China in recent decades and compared to the current education context;

ii) Key milestones in special needs education in the region;

iii) Improvements visible in video regarding children's joint attention, communication and behaviours during the first cycle practice;

iv) How children responded to improvisation in vocal singing and instrumental playing during the music sessions and perceptions of key issues in using music therapy techniques in classroom teaching;

vi) How the suitability of participants might affect the learning and teaching;

vii) How children respond to the music, comparing the two groups and different types of music. Plus how the problems found during the teaching process could be addressed and how the teaching and learning quality could be improved.

More issues were discussed in the focus groups and there are more examples attached in Appendix 3.

3.8.2 Document and informal conversation obtaining children's data

The data collection process included studying documents, such as registration files and assessment records, which evidenced children's needs. In most cases I could not easily access the personal files of children with special needs. I set strict criteria based on my research rationale for the relevance of the information sought, so many of the children's data sources were not considered. Moreover, I used informal conversation as a supplementary method for collecting children's data in the field. For instance, I asked the teachers if I needed some information about children's physical ability and other body functionality to fit into my research design, which focused on communication ability. It would not be easy to get a holistic view of this ability solely from the written documents, but it could be achieved through informal conversation with parents and teachers. Table 3.2 shows the type of information I needed in this project.

Collecting data about the children raised the ethical sensitivity that the child participants were not be able to give consent directly because of their level of functional ability, so consent had to be sought from their parents and local school or community. I refer the young children with autism using pseudonyms and I was careful in my research descriptions of the children to avoid allowing individuals to be identifiable. Similarly, the names of their schools and staff were anonymized. To look after the rights and well-being of the young autistic children, I informed the children's parents that they could withdraw their documents, information or children from the study at any time without having to give a reason. I made it clear that any discussion with or about the children would remain within the project and that individuals and what they said and did would be kept private and not spoken of by me or anyone else in such a way that they could be identified. Treating data sensitively and confidentially was an important consideration of all the interactions involved in this research.

3.8.3 Field notes and Journals

Field notes and journals are an important part of action research. Field notes are essential elements of participant observation (Scott and Morrision 2006) referring to raw data or materials in the fieldwork based on observations and informal conversations. This was my

operational definition as I could find no standard definition of field notes. Field notes describe all the things that happened during my fieldwork as part of my interactions with early years teachers, focus groups, children with autism and other participants.

Keeping a research journal helped me to personalise and modify my project, which is particularly important in action research. My journal helped me to update the progress of the classroom teaching, and this process of reflective writing was an integral part of my professional development. It was the subjective data of my own views and value judgments that was crucial to both action research cycles. Research journals are also evidence of the actions that I modified and the session plans that were amended. My research journals helped me to recall my private thoughts and provided a useful record of participants' activities. Research journals are important because they are a reflective account of the researcher's activities and a major source of written data. It also shows the journey of the researcher as well as contains the reasons why they make decision and changes.

By using a research diary or journal in addition to field notes, the early years teachers and I were able to record what happened, why it happened, where my ideas evolved or changed and the music session process itself. This was extremely valuable when it came to writing my thesis; it gave me access to the authentic voice of each of us. Moreover, the early years teachers and the experts who participated in the focus groups also kept field notes that contributed to my professional development and to the research project itself. Field notes are a kind of evidence that demonstrates meaning and understanding, while research journals are a kind of evidence that reflects the thoughts, impressions and feelings of the researcher in particular.

Use of descriptions of teachers' field notes, direct quotations and research journals in this study had to be negotiated before they were included in the analysis or thesis, made public or published. In addition, the confidentiality of the early years teachers and other participants was always a priority. I used pseudonyms for the early years teachers and student practitioners when I wrote up the transcripts and observational data. All the participants remained anonymous and all the information used was with permission.

3.8.4 Systematic observation and participants/nonparticipants observation

Observation is more than just looking at and seeing things. Observation involves being able to validly and truly represent a scene, including its actions, sounds, context etc. (DeWalt et al. 2002). Observation is central to qualitative research (Scott and Morrison 2006). Marshall and Rossman (1989, p.79) define observation as 'the systematic description of events, behaviours and artefacts in the social setting chosen for study'. Werner and Schoepfle (1987) suggest that there are three main types of observation: 1) descriptive observation, which refers to observing anything and everything and may lead to the collection of irrelevant data; 2) focused observation, which refers to observing whatever the researcher has decided to focus on; and 3) selective observation, which refers to observing different activities in order to describe the differences between them. The focused observation and selective observation were used most in this research project within systematic observation, participant observation and nonparticipant observation.

Systematic observation, particularly in my research involves highly structured categories for gathering and analysing patterns of interaction in the classroom (Croll 2008). I focused on classroom observation as a means of exploring the relationships between children and teachers and between children and myself that developed during the classroom activities. The purpose of systematic classroom observation is to supply a subtle description of activities and reactions in the classroom. The highly structured categories of classroom observation are based on the evaluation scale of Nordoff and Robbins (2007), Intensive Interaction (Nind 1999) recording in my project (Appendices B & C).

The most used two types of focused observation and selective observation practice are included in participant observation (DeWalt et al. 2002). There are various ways of applying participant observation in research. DeWalt et al. (2002) define participant observation as a learning exercise in which the researcher studies people's activities in a natural setting by observing and participating in actions. Participant observation requires the independent observer or researcher to participate in the research context, engaging in consecutive actions in order to establish his or her trustworthiness (Hammersley and Atkinson 2007). Controversially, Crabtree and Miller (1999) have suggested that participant observation

applies to all forms of social research because we cannot study the social world without being part of it.

In contrast, non-participant observation refers to observation in which the researcher does not interact with the participants, introducing a distance between the observer and those who are being observed (Mills et al. 2011). For example, non-participant observational data can be collected by video or audio recordings without the researcher participating in the actions. Therefore, the data collection techniques of participant and non-participant observation can complement each other and be used together (Denzinand Lincoln 2011). In my action research, I acted as a participant observer and as a non-participant observer at different stages of the field work. I was an insider of the research and more of a participant observer in cycle 1 and I acted more as a nonparticipant observer and an outsider of the research session in cycle 2. These dual roles gave me an in-depth insight into the action research from different angles and perspectives.

In terms of data collection methods and the purpose of using participant and non-participant observation, the early years teachers and I continuously observed and adopted musical techniques into individual music sessions. Participant and non-participant observation supplied ongoing data for my research. Each session was observed and recorded either by the early years teachers or by myself using video recordings, field notes and journals. Occasionally, informal conversations between parents or early years teachers and me were recorded.

There are benefits and ethical concerns associated with both participant and non-participant observation in this study. It is beneficial to be a participant observer because of the wealth of information doing so makes available about how children respond to music and because participant observations grants an insider view of what is actually happening in the classroom. However, it is necessarily undertaken in negotiation with field note providers, such as early years teacher in cycle 1, because I conducted the teaching process and interacted with the participants at this stage and field notes were essential as a supplement to my role as a participant observer. Moreover, non-participant observation was beneficial for this study because it gave a perspective on what was interfering in the action and

allowed me to have an overview of the classroom. Croll (1986) points out that it is important to maintain a neutral position during participant observation in order to collect, analyse and represent the information in a more in-depth manner. Bias can occur in a study because of the unclear division of responsibilities between participant and non-participant observation. It is particularly difficult to separate these two roles clearly because they supplement each other in the practice.

3.8.5 Using video and audio recordings

In terms of practice, the use of video and audio recordings in music therapy fieldwork has been common since it was introduced (Nordoff and Robbins 1977), but in special needs education it may need more attention. Furthermore, video transcription is becoming more common in social research and academic practice (Bezemer and Mavers 2011). In this study, the video transcripts represented naturally occurring multimodal interaction events and other key moments (Kissmann 2009). Audiovisual recording offers multiple, significantly richer resources (Flewitt 2006) and visual dynamic information provide compared with other forms of information (Jewitt 2012).

Video recording is a good data collection tool for researchers whose focus is on multimodal social interaction. In my research, capturing the subtle details of communication among the children whose communication abilities were impaired was difficult. However, high quality video recording can offer details about gaze, body posture, gesture, etc. (Goldman and McDermott 2009). Recording children's actions might overcome the technical difficulties inherent in capturing the multiple resources that a child uses to produce meaning in a classroom environment (Flewitt 2006). For example, a child may use minimal speech in a noisy environment or non-verbal communication with full body movements to 'talk' to teachers and me, which would be captured by video recording. In addition, the information is combined with visual, verbal, hearing sounds, gestures, interactions and other details in the field (Bezemer and Mavers 2011). Therefore, video recording as a method fitted my practice and research needs by allowing me to record a full range of forms of communication.

Chapter 3: Research Approach

My research project focuses on how music therapy techniques impact on children with autism and how local teachers respond and adapt to those techniques. It is classroom teaching based research, but it combines various contexts and musical components. I selected some video episodes and short video moments in line with a multimodal analysis approach and with microanalysis in music therapy. These selections particularly reflected the research questions and the on-going demands of special needs education in China.

To provide insight into participants' actions, the selected video data has a wider lens to show multimodal activities at the same moment: for example, a child with autism demonstrated singing and instrumental playing with body movement and simultaneously shared his/her attention with teachers or therapist in a moment. Thus, it is comparatively easy for the independent observers, teachers and me to use the selected video data to explore children's responsiveness and relationship development across the different stages of research.

These semiotic resources combine different components that produce meanings in different ways. For example, the videos or video captured photos do not have words or written paragraphs, and other transcriptions or video descriptions do have words or sentences; thus, these resources work on the same thing in a different way. In general, video data and written data need to be linked together in order to allow for a more concrete and comprehensive analysis.

There are benefits to adopting the video recordings method used in my study. It is hard to describe exactly what is happening in a classroom only in writing, and video allows a lot of detail that it is difficult to convey through other means to be captured. Video recording can also repeat information as necessary, with various tools available such as slow motion, stills images and fast motion to facilitate analysis. Video also allows for multiple levels of data to be collected. Non-verbal communication, for example, can be represented in the way a child interacts with his or her full body movement or plays instruments in the classroom environment. Multiple resources convey complex meanings in order to answer or clarify research concerns. Lastly, video recording reflects children's spontaneous communication development, enables me to review a moment 'not as past but formally present' (Raffel 2014) and effectively associates with other empirical dimensions as well.

There are some ethical issues with the use of video and audio recordings. The most important things are the consent and anonymity of the participants. The participants' consent must be acquired before video recording is used. In my study, the participants included children with autism who would not be able to give their consent. I therefore had to receive consent for each child from his or her parents. I was also careful to use their personal data anonymously in order to avoid any participants being identifiable. Yet, stills images showed children's face with permission of use by the parents. Moreover, I treated the child participants sensitively during the video recording session, and I withdrew children or the camera immediately if I saw any signs of discomfort.

Mohr (2011) suggests that responsibility and accountability are the most important ethical standards for teacher-researchers, who must act responsibly with respect to students, parents and the community. However, I have a different view to Mohr based on my research study. I call myself researcher first, rather than a researcher-educator, and consider myself to be responsible to students, parents, the community and teachers.

Good action research should be able to tell human stories. An action researcher should insist that improving one's own practice is a professional responsibility and part of quality teaching. In addition, action research should demonstrate that in the study each participant was treated equally and with care and respect, and researchers should be sure to be sensitive to individuals' identities (Zeni 2007).

It is important to consider how much of the teachers' and children's time the action research project could ethically consume. It also vital that using the method of video analysis and transcriptions present and reflect the teaching and learning process in this action research project (Wiles 2015). More discussion and training might have helped the teachers to improve their teaching abilities and musical understanding. However, this was not possible due to the time constraints of my PhD study. Time limitations also affected the teaching and learning process and the research outcomes, as I discuss in this Chapter.

3.9 Data analysis

I soon became aware that my data analysis would need to be based on multimodal video analysis and microanalysis in music therapy. These are approaches that focus on the emergence of visual data and transcriptions. In addition, thematic analysis of field notes, reflection journals and notes from informal conversation could be used for my research purposes. Next I illustrate what video analysis and multimodality are, and how multiple methods of analysis examine different layers of the data in order to represent its complexity.

There are multiple concepts, methods and frameworks that are part of multimodal approaches and can be used to analyse the multiplicity of data that includes visual, aural and other components (Bezemer and Mavers 2011). I decided to use videos to show how the participants actually played in their classroom environment, in the analysis attending to their bodily presence, gaze and musical behaviour during the teaching and learning (following advice from Silverman 2013). Multimodality focuses on using data to catalogue modes and resources systematically (Jewitt 2009). In my research, the principles of multimodal video analysis helped me to analyse the visual and transcribed data.

Different types of video analysis have featured in different research fields. Pink (2004, p.395) writes of the desirability of 'mixing the visual with other perhaps more established qualitative methods'. Luckmann and Gross (1977) attempt to develop an annotation system for interventions in comparison to a music score by using video, which they call multimodality. One good example of using video recordings to investigate classroom interaction is the work of Flewitt (2006). Flewitt explains that how children use a wide range of materials and bodily gestures to convey and express meanings could be revealed by video recordings. Yet there are some problems in using video analysis in a multimodal way. For example, it can offer too broad a focus on the modes of interaction, particularly in cases like my study, which assesses communication, interaction and musical behaviour. However, despite the potential for bias, multimodal video analysis is still a social, scientific, interpretive and naturalistic way of approaching human action and interaction (Heath et al. 2010).

Chapter 3: Research Approach

In terms of using video analysis in a specific field, Knoblauch (2011) combines ethnography with the microscopic analysis of video data to create an approach of videography. This method particularly stresses the need for additional background knowledge. Extending this to my study, the systematic collection of children's background information about certain criteria was vital to my data analysis, even though I opted not to adopt videography as my framework. Moreover, there are many approaches to the multi-dimensional analysis of video-data (Knoblauch et al. 2006). I chose to combine methods rather than adopt one approach fully to make my data analysis meet my research needs.

One method I adopted is microanalysis in music therapy, which is an approach that helped me to analyse the aural-visual and musical data in this project. Microanalysis is, in the context of music therapy, 'the detailed analysis of that short period of time during a music therapy session during which some kind of significant change takes place. These moments are crucial to the therapeutic process, and there is increasing interest amongst music therapist in understanding how they come about and whether there are ways of initiating them' (Wosch and Wigram 2007 p.64). Video microanalysis is a powerful tool for examining the character of an interaction. In particular this approach focuses on addressing the micro-process analysis that is vital for both clinical practice and for research (Silverman2011). Holck, Oldfield and Plahl (2005, p.31) suggest that video microanalysis comprises four sequences: 'data selection, transcription, pattern generalization-horizontal and vertical analysis, and finally interpretation'. This method can help to describe children, adults or others empirically in the field by revealing their weaknesses in such areas as communication skills or initiative. It is also useful for analysing the actual influences on the interaction and for exploring the direction of further developments (Holck 2007).

However, balancing the usage of video microanalysis with other methods was essential to this study where I used three methods in combination: microanalysis in music therapy, multimodal video analysis and thematic analysis. In discussing thematic analysis, Mills, Durepos and Wiebe (2010, p.926) state that

> Thematic analysis is a systematic approach to the analysis of qualitative data that involves identifying themes or patterns of cultural meaning; coding and classifying

data, usually textual, according to themes; and interpreting the resulting thematic structures by seeking commonalties, relationships, overarching patterns, theoretical constructs, or explanatory principles. Thematic analysis is not particular to any one research method but is used by scholars across many fields and disciplines.

There are five dimensions of thematic analysis: seeing, finding relationships, analysing, systematically observing a case, and quantifying qualitative data (Boytazis 2009). My research data analysis focused on applying systematic observation of individual music session and analysing. Using thematic analysis can help to manage large volumes of data. Thematic analysis can be applied to a diversified data sources, including interview transcripts, field notes, information written by participants and researcher, photographs, drawings and video and audio files. A fundamental principle of thematic analysis is coding, then the step-by-step processing of the data, yet this replication is seldom explained clearly (Lapadat 2013). In my action research project, thematic analysis supplements the other two methods of analysis and is used mostly on the field notes, journals and transcripts of visual and audio data so that it can be mapped onto the video analysis.

My data analysis involved looking at different resources in the field such as children's video recorded gestures, gaze, body movements, musical components and field notes. Most importantly, I focused on the relationships between the musical arrangement and the resources, children and teachers as well as researcher using a multimodality framework to investigate different research questions. In my research, I wanted to explore:

1) The responsiveness of children and early years teachers to the adoption of new musical therapy techniques in the daily classroom setting;

2) The impact of different styles of musical component on the communication of the children; and

3) The influence or effectiveness (changes and improvement) of musical techniques in improving learning and teaching in special needs classrooms.

Multimodal analysis fitted my design and research concerns well because it focuses on space and time; body and embodiment; action and interaction; and artefacts and objects (Norris

2004). In addition, multimodality looks at using resources differently to make meaning in different kinds of ways and doing different kinds of works (Jewitt 2009). For example, in my fieldwork, there was little to no conversation in the special needs classroom environment, but there was interaction through many different resources such as gestures, body language and musical interaction. This may be difficult to analyse linguistically, but can be approached using multimodal methods. Multimodal methods allow for the analysis of the assembly of various resources to produce meaning. Multimodal video analysis is one of the focuses of my analytic method. The complexity of the modes can be applied to my wide range of research questions. The complexity and richness of visual data is beneficial to my research, and multimodal analysis is important to reducing the bias that can result from failures to select, highlight and sample complex data. Microanalysis in music therapy refers to 'a strong tool for investigating interaction of a more or less implicit character (p.29 Holck 2007)'. The approach of microanalysis in music concludes: video microanalysis, the ethnographic etc. It is an essential method in music therapy for clients with severe communication limitation in order to recognise subtle indicator of communication and social interactions. Furthermore, microanalysis in music was necessary for this study because it would allow me to explore the impact of different styles of music component on communication with children in the classroom.

3.10 Trustworthness and Credibility of data

The data in this thesis can be trusted because I was systematic in my analysis and because I observed and involved the local early years teachers, focus group and other participants throughout the project. The captured data shows the children's progress in terms of their social communication abilities in different ways with thick description, self-reflexivity, member checking collaborating, prolonged engagement and triangulation in the field (Golafshani 2003; Creswell and Miller 2000).

Through the different stages of this action research project I had a dual role. At the beginning of the practice (the cycle 1 period), I was an insider exploring the research practice in the classroom for delivering the sessions. I also experienced changes in the children during the music making and playing with them while early years teachers observed my teaching. The teacher and I both used field-notes to give rich description on the observed sessions. This aids in helping readers to imagine themselves in the music sessions and witness it from

the point of view of child and adult. What is more, I also incorporated my self-reflection with evaluation scales (with the teacher participants on the discussion of post-video together) on my own practice into a narrative account. To contrast this, in the cycle 2 period, I shifted roles and lens from practitioner to just the researcher. As an outsider of the action research practice, I played the role of an interpreter as well as a supervisor and discussed my findings with local staff and focus groups. This is the most unique and essential approach for building the credibility of this action research study. Dick (1999) argues that 'Action research tends to be participative. Especially in its more participative forms it is likely to be regarded as credible and trustworthy by it participants' (p.44-1). My participating teachers and professionals were fully engaged in seeing the credibility of the work. The specific features of cyclic phases and the nature of action–orientation in action research also mean that steps can be taken to strengthen the rigour and trustworthiness of the research as it moves along.

During the discussions between different participants and myself the participants could challenge inconsistent data or interpretation during the course of the study. An important process in qualitative research is member-checking and this substantially enhances credibility. It means that the researcher seeks feedback or checks from the participants. In my study, I have systematically checked the data and narrative description through close collaboration with teachers and focus group participants in order to form and reform questions and the activity plans. I engaged them in the data collection and analysis on the progress of the children's communication ability during the DCTM intervention. Within these discussions, the participants gave me additional feedback on my work and action plan, which added more value to the credibility of my project. During the discussion with the participants, the focus group was able to validate the selected practice and the descriptions, reflecting on whether I had accurately interpreted what was happening. For example, the teacher participants discussed their reflection regarding their own teaching, I would then also give my suggestions to the same work and they would do this for me when I was teaching. In addition, I combined mine and teachers' reflections in order to write up the description on the classroom teaching. Similarly, planning or re-planning the classroom teaching during my study was done in collaboration with the focus group. This also fits with Nordoff and Robbins' music therapy idea or style of practice of working in pairs. Either individual or group work is performed by therapist and co-therapist, especially on evaluation. However, all work is dominated by the therapist and co-therapist assisted the work. The co-therapist role is not

really for checking work, but giving feedback to the therapist on work that must be done. Thus, the way of their working complemented the research and added value on the trustworthiness of the study (Nordoff and Robbins, 1997; 2004).

Guba and Lincoln (1995) maintain that researchers guided by transactional validity criteria may achieve more trustworthy findings by applying certain methods such as member checking as I explained previously. In addition, researchers can employ specific strategies to enhance the credibility and trustworthiness of the study (Cope 2014). With the method of triangulation, I used multiple methods of data collection in an attempt to gain an articulate, comprehensive view of the children's progress during the study. Methods of data collection that were triangulated include observation, notes-taking, journal-writing and video recording. Together these provided a rich account of how the teacher was teaching and how well the children were responding.

Strategies of prolonged engagement and reflexivity are essential for facilitating the field-work and thorough data collection when conducting qualitative research (Lincoln and Guba 1995). Prolonged engagement in the field does not usually have a specified duration, but upwards of 4 months is common (Creswell and Miller, 2000). It is also an essential step in building trust and rapport with participants to gain rich, detailed responses. Thus, in my project, I spent four months practicing and observing the holistic project, building trust with the child participants, local staff and other research community participants. Establishing rapport helped to enable me to capture the children's progress in a comfortable and reciprocal way which in turn allowed me to gain credible accounts.

Chapter 4: Cycle I

This chapter presents findings from the first action research cycle with video data. The video session analysis is focused on one key child in each group, to illustrate how the children responded to music and to me in the music session. In addition, I include the findings from the focus group which considered the music therapy techniques introduced in the education of those children in order to enhance their communication development and enrich their programme of education. I discuss what the findings from cycle 1 suggested for how the early years teachers could use the music therapy techniques and components through different activities in cycle 2 in order to support children's learning and teachers' teaching.

In the chapter I present in detail the findings for one child in each group in particular detail and the others in less detail; this because of the limitations on the size of the thesis. I refer to these as key children and they illustrate a particular case of a response to the music intervention and illuminate the progress as well as the problematic issues in the research. The key children were selected in part because they had nearly full attendance.

4.1 Key Child in group 1: Yujing

4.1.1 Cycle 1 Yujing's session analysis

First I sought to gain an understanding of each child's overall background information (see Table 4.1) before I began the main data analysis. The fundamental knowledge of Yujing's musical learning processes in Cycle 1 is summarised in Table 4.1 and the progression of the sessions are mapped and elaborated on. I present an individual session analysis in Cycle 1 showing diverse dimensions in great detail. Based on this explanation of the individual session format, a procedure for presenting the analysis of the development an individual child development via the DCTM session was created.

General background
Yujing was born 2007 in Shenyang and diagnosed with autism in 2012. His teacher described him as a clever boy but with no speech. She added that he has attitude issues and is emotionally unstable. His mother said that her son likes music, and although none of his family members are musician, his understanding of music is better than his mother anticipated.

1. Fundamental information	Yujing had not participated in any other therapies, but he had participated in an educational program in another organisation. No musical preference was reported to me and he did not refuse physical support.
Musical information	
1. Rhythm	Yujing could imitate basic beats but not patterns. He was not able to change the rhythm pattern in response to music and rarely able to sustain the imitation of rhythmic pattern.
2. Vocal	He made unconscious vocalisations and vocalised in response to particular musical styles.
3. Tempo	He demonstrated awareness of tempo changes and conscious body movement in tempo.

Table 4.1 General overview of Yujing

Table 4.2 shows Yujing's progression in musical communication, level of musical verbal and nonverbal responsiveness to the different styles of music through different activities. The numbers stand for different activities as explained in Appendix (D) For example, Yujing enjoyed drums playing evidenced via musical imitation, facial expression and musical communication behaviours. The video made it easy to identify how Yujing responded to the music through turn-taking, imitation and so on. Yet, his response was very limited to the ukulele and non tonality bells to which he rarely responded via musical behaviours of musical imitation.

Communication(session 1-8)								
Name of client:					Yujing (group 1)			
instruments / frequency of reaction / physical reaction	piano	hand chime	drum	colour bells	shakers	ukulele	guitar	toy balls	bell without tonality
Freely control head direction	6	2	7	3	5	1	2	5	1
Frown	None	1	3	None	None	1	2	1	1
Smile	5	2	6	3	4	None	1	5	None
Eye contacts	6	2	7	3	5	None	1	5	1
Joint attention	3	2	6	2	3	None	None	4	None
Body movement	6	2	6	2	4	1	1	5	1
Language expression	4	2	6	1	2	None	None	3	None
Musical imitation	6	1	7	2	4	None	1	3	None
Communication via musical behaviour	6	1	7	1	3	None	1	2	None

Table 4.2 Overall review of Yujing's sessions in cycle 1

The details of Yujing's first session and overall plan are presented here for the purpose of this data analysis example.

Sessions 1-2 Introduced music therapy into the music session:

- The free improvisation teaching depended on the session format chosen by me. This involved helping Yujing relax with music.
- I focused on subtle changes in Yujing, and selected suitable music, instruments or other related methods to encourage interaction or response.
- I briefly formed the temporal needs and prepared for the next stage.

Sessions 2-4 Built up the connection:

- I implemented the interventions into Yujing's individual sessions, in order to match his educational special needs in the classroom setting.
- I adapted to the subtle changes shown previously, and then amplified the changes in order to find the connections between Yujing and the social context and between Yujing and I. In addition, I implemented the intervention accordingly to meet the Yujing's needs and strengthen the connection between us.

Sessions 4-6 Progressed the reciprocal interaction:

- I implemented more interventions during the individual music session.

- I engaged with Yujing's self-expression and self-awareness.

- Social connection and eye contact happened naturally.

Sessions 7-8 Exploring the responding and communicating:

- The music was played creatively between Yujing and me and orchestrated in harmony.

- Yujing was emotionally calm and playful.

- Yujing responded to music more creatively, was free with me and self-motivated to communicate.

Figure 4.1 shows the individual DCTM session format that I used
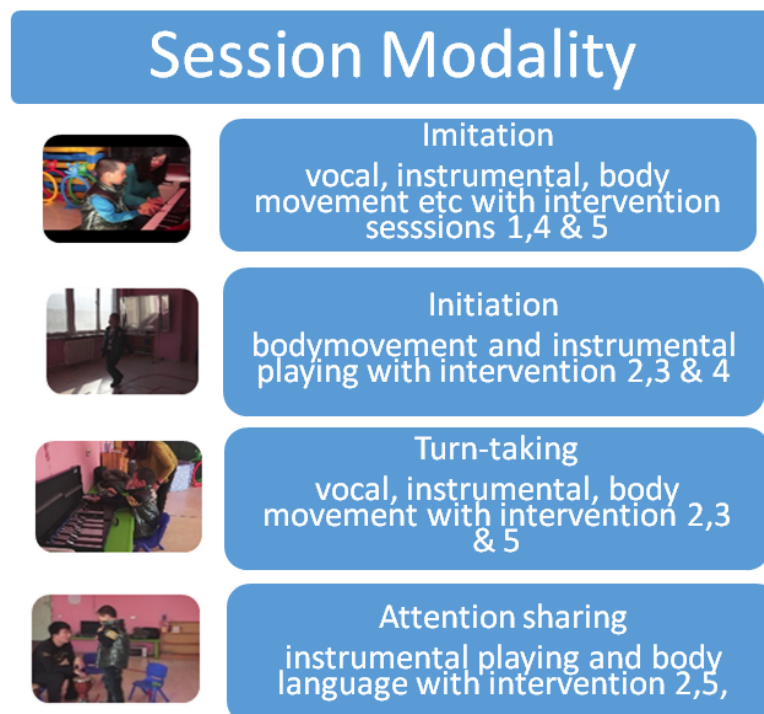
Figure 4.1 Example of Yujing's individual session in cycle 1

I present Yujing's first session in cycle 1 using an environmental narrative story. Environmental narrative stories mainly describe the natural environment and living conditions of an individual participant and give some necessary information about the

classroom setting. Generally the teachers and I would focus on a 'specific problem' or issue (as advised by Holck et al. 2005).

Yujing is a boy who was diagnosed with autism in 2012 when he was five years old. He lives locally in the northeast of China with his family. He is closest to his mother. Yujing never goes out without her accompanying him and he feels restless and anxious if something breaks his routine. After the first assessment session with Yujing and his mother, I found that he was interested in playing instruments and singing. However, he demonstrated a short attention span and rigid and sluggish responsiveness, and rarely expressed himself verbally. His intonation was really rigid, without changing tones. It transpired that Yujing spoke less during the group activities, but he was more active in my individual music sessions. My previous tutor, Robin Howat, said that children all had individual qualities from their landscape: they were from the ocean, mountain, river, desert or broad grassland. I saw Yujing is an ocean boy. He has talent and he is intellectually capable, which was apparent from his other subject learning, such as drawing and game playing in class. I could feel that he liked music and that he wanted to communicate with others. The question was how to facilitate this communication.

The research was conducted in the north-east of China, an area that is close to Mongolia and Moscow where it is very cold in winter. The temperature was generally between minus twenty and minus thirty degrees when my practice took place. It was very cold in the morning and evening, and sometimes it was difficult to travel if it snowed. Yujing lives on the other side of the city and his mother travelled with him every weekday to the community centre by public transport. They normally left home around 7.30 in the morning and arrived at 8.45. It is not an easy journey for an adult or a young child.

The first video recording session for Yujing in the classroom took place on 26th December 2014 and was transcribed by me. Generally the sessions would start at 9 o'clock in the morning. The early years teachers Mingming and Xiaoqiu and I arrived at 8 o'clock at the fifth floor of the community centre, which has 21 floors in total. On the fifth floor there are nine classrooms on both sides of the corridor, a sensory integration training room, toilets, an office with small amount of storage space and a good sized area of play space in the centre.

My teaching took place in Classroom 2. There was an upright piano and three little tables in the corner of the room. There was an ocean balls (ball pool) facility parallel to the piano on the window side of the room. Mingming, Xiaoqiu and I set up the drum circle in the centre of the room with four drums and four chairs. There were some percussion instruments and wind instruments in the basket on the table and a full set of hand-chimes available, too. Xiaoqiu picked up the video camera and adjusted the recording action before trying it out, testing the zoom, angles and lighting. The sunshine was getting strong and filling the classroom. As it approached 9 o'clock, children's voices happily filled the corridor on the fifth floor, parents talked and teachers greeted each other; some of the children occasionally ran in and out of my classroom. The music recording played within amplifier at 9 o'clock and children got to their classrooms, guided by their teachers.

I selected the highlights of Yujing's session excerpts for analysis. There were a series of typical examples of a lack of joint attention, turn-taking and imitation in his social communication, which I selected from the eight sessions. The session format was generally the same as that explained above. Although Yujing's mood was variable, there was progression throughout his eight sessions.

Each session started at 9 o'clock in the morning and the first session was on time: Yujing was handed over to Xiaoqiu at the classroom door by his mother, she reminded him to 'behave yourself and be good' and then left. I was playing greeting music (Score 4.1) on the piano while Xiaoqiu took Yujing to explore the classroom.

Score 4.1 Greeting music

Yujing seemed to ignore Xiaoqiu and me even when we called his name during the greeting music. He was wandering around the room, exploring the different instruments. Finally he stopped at a little table and played the hand-chime constantly for nearly ten minutes (see Score 4.1).

Image 4-1 Interest in hand-chimes

Yujing was interested in playing the hand-chimes and seemed to be listening to my explanation of how to use them. He is very sensitive about physical touch in general and does not readily share attention. According to the field notes for Image 4-1 from Tongtong (one of the staff members) 'he seems very interested in playing the hand-chime, because he sat there for almost eight minutes and tried hand-chime bars back and forth. I really believed that he motivated himself exploring chime bars. His listening and playing conveyed information that he seemed to like the high-pitched sound' (quote from Tongtong's journal, translated by me).

Image 4-2 Sharing the interests

As seen in Image 4-2, Yujing did not refuse my physical support on his elbow as I helped to lift his hands up to play the chime bar properly. He concentrated and his play was self-motivated. In this moment Yujing and I were connected by those chime bars, enjoying shared focus. He did share his interests with me and imitated my posture of playing,

although the hand-chime bars were not played properly. The aims in supporting him playing the instruments were to develop his attention and to encourage his social communication ability, verbal or non-verbal. He did not use any verbal communication, but by playing the instruments he was communicative. Yujing copied me and I felt connected while we played together. Tongtong's field note commented that he did not push me away, which was unusual compared to his general performance at the centre. He seemed to like being accompanied by my lifting hands while he was playing on the hand-chime bars. I felt that Yujing played in a very natural way and that this was just like a normal learning process.

Image 4-3 Playing together

Image4-3 shows us playing the counting game together with instrumental imitation. Yujing barely said the name of the chime bar, but we interacted in a natural way for a moment. There was complex and mutual interaction between us with verbal, postural and musical communication. I asked questions, he tried to answer, and finally, with my assistance, he put all the hand-chime bars into the right place.

As I designed with the study to incorporate multimodal analysis, next I use different way of explaining to present the data from different angles. By highlighting important events in the selected video samples, session video analysis and thematic data analysis, I illustrate this moment by laying out the layers via moments and frame-by-frame transcripts in Figure4.2.1. The frame –by-frame analysis was mainly about the music in use. The video analysis was mainly about the non-verbal communication. Finally, the thematic data analysis was about the observation, field-note and narrative focus group discussion.

Yujing's session (1)   on 26th Dec 2014

Timeline   03:30   04:00   04:30   05:00

Yujing

Facial expression   Anxious --------------------------more relaxed with concentration--naturally looks up

Direction of gaze   Li's right hand-----------------------playing chime-bar up & down--------again----------------------------------changes hand

Playing hand   left with chime-bar-----------------swings around with tiny sound--changes his hands

Voice & chimes (Singing & other Instruments)   pull out some chime bars

Li

Hand chime & Verbal Movements   Explaining chime bars names verbally

Right hand pick up----------------------------fore arm up and down---left hand
Chime bars

Facial expression   Smiles ---

Yujing & Li

Eye contact Interaction   briefly about two to three seconds

Imitation   attempt to imitate the chime bars' playing

Figure 4.2-1 Frame-by-frame

Multimodal video analysis

Microanalysis in Music	Sample Video Episodes	
	Events **Session 1**	**Moments**
	These 8 minutes clearly showed his musical behaviours and lack of attention using the Nordoff-Robbins musical evaluation scales. It showed evasive defensiveness and anxious uncertainty in exploration of musical instruments as well as unresponsive non-acceptance in musical singing. There were glimpses of very limited responsiveness to me as the music therapist in the session. However, rich information came out of this session, including about Yujing's communication, attention span level etc.	Moment 1:Blowing the horn 00:33 – 00:59 Yujing's attention was spread everywhere in the session, but he did blow the horn while acting on his own and he had a very short episode of eye contact with the teaching assistant at the beginning of this session.
		Moment 2: Playing the hand-chimes 05:24 – 08:23 This was a moment where Yujing concentrated on the playing and counting the instruments of the hand-chimes. He communicated with me in very blurry verbal sounds, with an impatient gesture and tendency toward rejection. However, he still communicated with me very briefly.

Figure 4.2-2 Microanalysis in simple video episodes

	Early years teachers	Researcher
Field notes	He was not communicating with either teaching assistant (early years teacher) or therapist in the session. It seemed like he did not like music at all and did not connect with music or the music therapist. He explored different musical instruments which were displayed in the room and tried out each kind. He accepted the therapist's help when offered in the second half of the session with playing the hand-chimes.	I started with musical singing and tried to connect with Yujing. However, he ignored me and explored the musical instruments around the room almost the whole session. I tried different musical songs and finished the session with the rhythmical music. He made eye contact with me a few times when exploring the instruments.
Reflection journal	It seemed normal for Yujing, who responded to the new things the very first time. For example, the new teacher, new instruments and new style of teaching. There were some things that he did well, such as the counting and reorganizing the hand-chimes where assisted by the therapist and also with verbal encouragement. He likes music in general, but his joint attention impairment is serious problem.	Yujing's reactions in the very first session did not surprise me. These were understandable behaviours for a child with autism responding to new things and meeting a new person. However, there was still regret in that I need to prepare more instruments if possible. It might encourage him more to explore the things and seek out information. There was one thing I need to remember, which more patience in waiting for response.

Figure 4.2-3 Thematic analyses in field notes and Journal

Session 3

On 6th January 2015, after the New Year's holiday, the children were back to the centre and the centre operated a normal timetable again. Yujing lives in the city of Shenyang, so the difficulty of holiday travel did not affect his return. Xiaoqiu and I were verbally talking to Yujing about his holiday. He did not answer, but a soft smile on his face, suggested Yujing was in a happy mood. After two to three minutes, Yujing sat on a chair and I started with a greeting song which made him yarning. Even so, with our prompting he still sang Xiaoqiu's and my name to greet us. However, I could feel that his concentration was not focused on the music, for example, he was still drumming when the music stopped. After the greeting song finished, he stood up to check the instruments basket, than picked up the reeds horn again like in previous session. He practiced the reed horn naturally, and then I changed my position to sit with him face-to-face to carry on with what he was doing.

I added the counting game with the reeds horn blowing. The reason is that he has problem with the third sounds pronunciation and practicing the breathing is good for making this verbal sounds. He could blow the reed horn for shorter or longer sounds as I asked. Although he did not respond smoothly at the beginning, soon he reacted with the counting instructions without any difficulties.

Unfortunately, there was a teacher who came into the room for some reasons. The class atmosphere has disturbed and Yujing's focus was gone, though he still played.

Image 4-4 Moving and playing

Yujing could not focus on the music and also yawning. It was difficult for him to wait and fit into the space. At this time his attention span was really short. Then, we changed the

musical activity to physical movement with my pre-composed music. During this activity, I asked Yujing to lead the activity and give the verbal instruction along with the physical movement. Such as, run, walk, stop and quickly run. But we did not say the word 'stop' instead of that I put the finger on the lip. It made this activity playing simple and full of fun.

Image 4-5 Taking the turns

Yujing was practicing the reed horn with us. He picked up a reed horn from the basket spontaneously and played it up and down. Finally, he tried out to blow it. I asked him to blow it for different lengths in order to learn controlling the breathing. Yujing did not understand about the length, so I showed him by blowing the reed horn. Then, he copied what I did. It seemed difficult for him, but he focused hard to try with Xiaoqiu's assistance. I held the reed horn and changed the positions for long and short blowing. Therefore, we were happy to work together with reed horn playing in the second half of the session. Please see the details in multimodal analysis forms in Appendices (D-1).

Session 4

To follow on from session 3, I planned this session with coloured bells and the reed horn. I was aiming to develop Yujing's abilities in breathing control and attention sharing. Yujing had already shown his interests and ability to focus in the previous session. Therefore, we tried to keep his attention span as long as we could. I mixed using musical instruments to examine his real interests in order to merge the musical materials and get ready for the next step.

Class began on time and Yujing centered quietly. He sat at the front of the little table as we set up. He played coloured bells, which I had put on the little table. There were no verbal

communications during all this. He was imitating my actions to play the bells in the correct order. Yujing explored the sounds of all the bells as well as carefully looking at them. However, his concentration gradually faded when I added multiple tasks with counting and colour recognition requests. The reason to add the multiple tasks is that I try to develop his multiple attentions sharing ability but it may have been too difficult.

In the second half of the session, his attention was back to my music again when I offered him the reed horn. I used Nordoff and Robbins music story – Joshua fought the Battle of Jericho. There were spaces for him to fit in and he seemed to have fun.

Images 4-6 Playing the coloured bells

The video images show how Yujing played the coloured bells with me. He used both hands playing the bells by turn. I did not say anything after he came into the classroom, I just played the bells with the musical tunes and Yujing followed. He really focused on the playing and exploring the sounds for each bell. His episodes of eye contact lasted longer than I expected and we were communicating via the bell playing, the words and verbal interaction seemed extra. Later on, I held his hands to play the bells to the children's rhyme of Twinkle Twinkle Little Star, and he was happy to be led by me in that I could feel his arms and hands were really loose without any tension, he looked at me intensively when we were playing.

Image 4-7 Blowing the horn

After a while, Yujing gradually lost the connection with me and looked around the room again. I asked Xiaoqiu to give him reed horns instead of playing the bells. He seemed happy and I could see his facial expression subtly change with a soft smile. We tried to blow the reed horn in different length, then, playing the musical tune of Joshua fought Battle of Jericho from Nordoff and Robbins children's book. He had some problems blowing the reed horn in different lengths, but without stopping to fit into the music he blew the reed horn. His understanding of music is better than verbal instruction I felt. Please see the details in multimodal analysis forms in Appendices (D-1).

Session 5

At this stage, I mainly focused on encouraging Yujing to express himself via music in order to build up his confidence. The reason is that his mother told us that Yujing is a very shy boy and he needs lots of encouragement. In some communication tasks, such as greeting people, he would be capable but his shyness stops him.

This session I planned to use the reed horn and drums continuously, but I added piano chords improvisation to practice his attention sharing. Using different musical terms, for example, time signatures, different style chords patterns and different pitch zone to develop his attention span. In addition, there were some movements supported with lively music playing.

The session started and Yujing came into the classroom with a smile. He spontaneously played the drum with Xiaoqiu and automatically blew the reed horn in different lengths. Obviously, he remembered what we did at the last session. After a while, I played piano and asked Yujing to imitate my rhythm with drum. He had no problem copying me, but it seemed that he wanted to blow the reed horn. Thus, I offered him to play reed horn after a short while playing on the drum. He presented himself well on the reed horn and engaged in mutual playing with either Xiaoqiu or me sometimes during this session. His attention span lasted longer with body movement.

Image 4-8 Mini ensemble

Yujing was happily playing the drums with Xiaoqiu after he came into the classroom. I joined in with the mini instrumental ensemble. Yujing showed his interests and his happiness during the drum playing. Gradually he led the session with his rhythm and we followed. However, he was unable to change his rhythm pattern, so he lost his focus easily; at that point, I took over with strong piano beats in order to lead our instrumental ensemble continuously to the end. I felt that he needed fresh idea to play with those instruments.

Image 4-9 Moving around

After we played instruments for half the session, I asked Yujing whether he would like to move around and guided by the piano music. Also, I was encouraging him to lead the musical activity this time by giving the verbal instruction of 'jumping, running, walking or stopping' for Xiaoqiu to follow. He did well and really enjoyed this activity. Through the musical playing and movements, he showed his emotions and understanding of music and verbal communication. He responded to music and my instruction well, particularly, when he led the body movement activity.

Yujing's behaviours gave me more confidence with my project design and he showed that Nordoff and Robbins music has certain advantages in the rhythmic activities. For example,

rhythmic activities in Nordoff and Robbins music principally focus on children needs that it regardless of slow motion, quick running or mixed tempo which can be played in one activity. However, the advantages with some edited music is also obvious, For example, 'If you're happy and you know it' is a traditional western song for children and is also a popular children's rhyme in China with edited lyrics. I used this song successfully in Yujing's session. For example, Yujing actively played drums, moved and interacted while I used this song. Therefore, I could say that musical materials are one of the cores of impact of teaching and learning factors, but not all. Please see the details in multimodal analysis forms in Appendices (D-1).

Session 6

This session ran with some problems and Yujing seemed uninterested in the musical activities, yet, we still played the reed horn with him.

The session started as usual. However, after the greeting music, there was another early years teacher (named Zhouzheng) who came into our classroom and joined in the activities. She was asked by Yujing's mother to come to the class because his mother had suggested she learn some techniques from us to use in her individual class with Yujing. I did not know this in advance and according to Chinese custom it was hard for me to ask her leave the room. This session though was chaotic with the adjustment on pre-planning. Yujing was the same as usual and sang the greeting song with me and Xiaoqiu. We moved to the instrumental playing with piano and reed horn. I played on the piano with chord progression and Yujing took turns with me. Yujing was guided by Xiaoqiu. Occasionally though, Zhouzheng joined in the turns which changed the original balance of our playing.

We carried on with the reed horn with drum, Xiaoqiu on the drum and I was on the piano where Yujing played reed horn. Our instrumental ensemble worked well as with the previous sessions. I led the activity on the piano, then, Xiaoqiu played as second and Yujing the last. We played in different time signature with different durations. It was a little complicated and Yujing was assisted by Xiaoqiu. I changed the pattern with a little hurry and Yujing responded with a little unattended playing.

Zhouzheng said there was a song (Little baby dance with a little bear) which Yujing liked very much. She wished to try it with Yujing on reed horn's playing. We all followed up with her singing the music, however, Yujing's concentrations seemed everywhere and he did not play in the right place. Zhouzheng took control with this music, but there was no obvious space for us to fill in. We seemed to have lost Yujing at that moment.

I asked Xiaoqiu to hold up the drum and asked Yujing to play in different positions in order to attract him back, yet, his attention was still not on the drum. I changed the plan to encourage Yujing to lead the session with body movement. I supported him on the piano and Xiaoqiu held his hands to walk around in the room. Whereas I asked Zhouzheng to sit and play the basic beat on the drum. Xiaoqiu and I encourage Yujing to say 'Jumping and stopping' or 'running and stopping'. This did not last long; then, we changed the instruments to hand-chime with a song to say goodbye.

My reflection on this session is that I made a mistake in that I let Yujing's mother cross over the boundary. I had to tread the delicate path between controlling and respecting and I need to work on how to deal with it. I had a brief discussion with Xiaoqiu and he told me that he would refuse it directly if she asks although normally, the parents in the community centre are permitted to sit in the classroom. Yujing might need more directive leading in this situation with many people in the session, otherwise, his attention is easily lost. Please see the details in multimodal analysis forms in Appendices (D-1).

Session 7

This session was run better than the last session. I focused on the reaction of Yujing's continuous responsiveness and communication to music. I used music activities I designed mainly to focus on the creativity and emotionally calm and playful nature for Yujing to build up his self-confidence and self-motivation.

Yujing came into the room straight way and sat on the chair. I did not sing the greeting song this time, but directly played 'If you're happy and you know it' without the lyrics. Leaving the

spaces during the song singing, I gave the verbal instruction and let Yujing to fill in the actions. He seemed not very excited as the session began, but he was getting into the music after six minutes. He seemed emotionally calm even though he did not fill in the space perfectly with music. He was still trying out with the drums. His entire concentration lasted more than five minutes on the music and drum playing. Meanwhile, his musical responsiveness was encouraging and showed his self-confidence during the activity. The level of his understanding on verbal instruction and musical activity improved through those musical sessions.

Image 4-10 Coordinating movements

Image 4-10 shows the beginning of the session with Yujing clapping his hands to my verbal instruction as well as playing the drum on basic beats. It was a complicated and highly coordinated movement, but Yujing completed it quite smoothly with the piano accompaniment. I played the music tune without the lyrics because I used my own pre-composed song in his session, so lyrics would be new to him and may distract his attention. Yujing responded to the instruction and musical activity without Xiaoqiu's assistance. The smiles came to his face again after few minutes.

Image 4-11 Moving and playing

Chapter 4: Cycle 1

After the activity with drum playing and sitting position activities, I asked Yujing to stand up and walk around without any guidance by Xiaoqiu. Using the turn-taking activity to fill in and shout out the rhythms. He became excited and ran around the room blowing the reed horn, clapping h hands, stamping his feet and touching Xiaoqiu's camera etc. There was a harmonious part of the session. I was surprised that Yujing could complete the task on his own without any help. The session goal was designed particularly to be a little harder than previously. I noted that I might need to rethink the level of his session design in order to fit him properly. Xiaoqiu said that Yujing responded to him in the classes apart from the music sessions. Please see the details in multimodal analysis forms in Appendices (D-1).

Session 8

This was the last session of cycle 1 for Yujing. It was a good session with his active involvement in the instrumental playing and positive response in musical turn-taking. For example, he sang the lyrics while we played piano together although the pronunciation was not improved significantly. While Yujing was not interested on the drum playing and piano and had difficulties understanding my body language at the very beginning of the cycle 1, in this last session moves he showed his talent on the level of understanding and improvements of musical responsiveness.

The last session was very close to Chinese New Year holiday. Xiaoqiu and I discussed our goals regarding the last session reflection. We wanted to have suitable level of activities to fit Yujing's educational needs in order to develop his ability on spontaneous communication and joint attention through the musical components.

Catch the beat
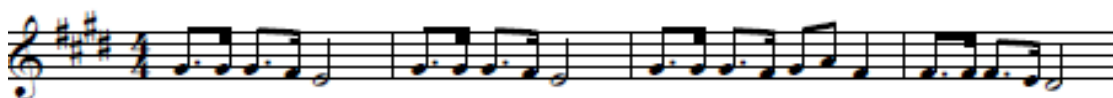
Score 4.2

Image 4-12 Automatic playing

Yujing ran into the room and sat on a chair facing the piano. He automatically picked up the drum and played it while I sang the greeting song. Yujing played the basic beat and sang the lyrics with us. He seemed really happy and I assumed that he might affected by the holiday mood. His enjoyment of the session infected Xiaoqiu and I.

Yujing was excited to walk around the room talking to himself. Xiaoqiu and I agreed that we may challenge him on this session with his language communication and verbal practice through musical turn-taking and imitation activities. I decided to use a children's rhyme that the early years teacher used on a daily basis for children in this centre. We sang in turns and Yujing could almost fill in the musical gap immediately without any help. At that moment, Yujing and I were sat by the piano and Yujing stood up by my side with his concentration. After repeated practicing, he could fill in the gap precisely with the musical rhythm.

By highlighting important events in the video samples which I xselected from the last session in cycle 1, I again explain moments by laying out the layers via moments and frame-by-frame transcripts in figures.

Yujing's session (8)

Timeline   10:03   10:25   11:09

Yujing

Facial expression   Happily facing to the piano ---smile on his face

Direction of gaze   Piano --- playing piano keys ----------------------------------piano

Playing piano   Hands on the side of his body------------ hands on the top of Li's palm ----------------------------playing piano with singing
& Voice

Li

Piano &   Playing the music and singing the tune with Yujing's verbal accompaniment
Verbal

Facial expression   Smiles --- -------------

Yujing

Eye contacts   Regularly connect with me by eye contact while we played piano together

&

Listening to the music   He stopped playing his piano keys when I played glissando on the piano

Li   Interaction   He random played on the piano with precisely verbal singing to fill in the gap

Figure 4.3-1 Frame-by-frame

Multimodal video analysis with different modes

Multimodal analysis		Modes of musical communication	Mode of gaze	Modes of gesture	Session format & series
	Li's (my) action	I played the piano and gave the verbal guidance on the lyrics. At the same time, I was encouraging Yujing to sing by saying 'it's your turn' when it was his turn. During the playing, I was intentionally leaving time to wait for Yujing to respond.	I was playing on the piano and looking at Yujing beside of me. Especially, I waited to see his reaction after the piano glissando.	I exaggerated the smile and gestures of playing, such as the stopping and glissando on the piano keys.	Session 8 Individual
	Yujing's action	Yujing played happily with a smile on his face. Particularly, he gave a heavy play after my verbal words as well as his full attention.	Yujing focused on my verbal instructions. Very often Yujing looked up when I stopped.	He played piano with full concentration.	
	Actively playing together	We mutually played together via piano interacting.	Yujing looked at me occasionally with his singing to fill in the gaps.	I supported Yujjing's piano playing on the steady beats and physically as well.	

Figure 4.3-2 Video session analysis

Narrative and Reflective notes

	Early years teachers	**Researcher**	**Focus groups**
Field notes	Yujing was really communicating with the therapist in the last session. He actively played in both physically movements and musical instruments playing with the therapist's piano accompaniment. Yujing was also interested in playing turn-taking with the therapist in the second half of the session. For example, Yujing completed task without help after a few times practicing.	This was the last session for Yujing in Cycle 1. I started with piano playing and naturally connected with him. However, he seemed that he wanted more and tried to lead the session. He stood up and started doing some physical movements at the second half of the session. He also made eye contacts with me regularly after he smoothly filled in and shouted out the rhythm patterns during the piano playing.	Teachers hardly to use the good observational techniques in order to discuss the practice with Yujing's session. However, Yujing enjoyed instrumental playing and body movements via turn-taking and imitation. The details see appendices (H-2).
Reflection journal	This session started naturally after Yujing ran into the room and sat on a little chair by him. There were some things that he did well in this session. For example, therapist asked him to stand up and made some movements, and then he excited walking around, also to blow the reed horn at the same time. It seemed that the musical turn-taking activity impact on his joint attention.	Yujing's musical responsiveness in the last session was showing his musical talents. I was surprised about Yujing's reaction. For example, walking around the room with multiple tasks which play together in order to fill in the musical gap. This session goal was designed comprehensively which comprise most of materials I used previously with him. Nonetheless, he still completed after few time practicing. I really need to rethink the level of his session design in order to fit him properly in next round.	Yujing's responsiveness improved with the clearer practicing aims of with his communication needs. In cycle 1, I found that I need more patience with not only children, but teachers in learning and practicing. The details see appendices (H-2).

Figure 4.3-3 Thematic analysis in field-note and journals

4.2 Other children in group 1

4.2.1 Xinyu

Xinyu is the oldest girl in the group and has qualities that make her very likeable. Her communication ability is very limited and she likes to stab people using her chin when she is in a temper, but she also likes to lean on people or hug them when she is happy and relaxes. There is no musician or professionals in her family and she has no musical training background. Her favourite things are mobile phone covers and different kinds of wrapping papers, particularly, the sounds of tearing those papers. The early years teachers told me that Xinyu does not like to learn things in the class, but sits quietly and never run around the room. I designed rhythmical movements activities more than instrumental playing according to her characteristics in order to enhance breath control ability and to achieve sound making. I chose the reed horn as the special instrument for Xinyu for her sessions in cycle 1.

There were no significant improvements in Xinyu's sessions in cycle 1, but she enjoyed my music sessions by showing her happier emotions and active body movements, such as, using her hands to hold my hands knocking her arms. Xinyu's eye contact and attention sharing did build up by the time we ended. She always came into the room with a smile and left with satisfaction.

Images from Xinyu's fourth session show her non-verbal communication via eye contact and body language in musical activity. Her level of understanding was good at that moment according to her facial expression and musical responsiveness.

Image 4-13 Impressive moments

Xinyu and I were often playing the drum face-to-face; I tried to encourage her to make some sounds, such as 'P' sounds that are comparatively easier for her to pronounce. Also, there were lots of words we used in the class that include this sounds. She sounded 'P' very softly during our playing, particularly, when she was rocking back and forth with my rhythm and clapping hands at the same time. She shared her interests with me and concentrated to follow the drum rhythm. We took turns in drum playing and Xiaoqiu on the piano played a single melody to support us.

The focus group discussion agreed that she could cry and make a soft sound, which may suggest an ability to communicate verbally in future.

4.2.2 Xuanxuan

Li yuxuan (Xuanxuan) is 7 and half years old and a member of group 1. His classroom teacher says he has no verbal communication and only makes sounds about his last name. Occasionally, he may be able to count one to ten out of order and most of the time he talks to himself, but no one can understand him. His emotional state is unstable and he is always screaming or biting other children. He often shouts and cries in the class and his information pack states his understanding ability is equivalent to a two-year-old child. He is reported to not like female physical contact except from his mother. Nonetheless, I was always happy to

meet him in the music sessions at the community centre. He responded to me with eye contact, facial expression or physical movements sometimes.

In my music sessions, Xuanxuan was comparatively emotional stable and softly smiled. Sometime he bit his fingers or pinched my hands when restless. He talked to himself and excitedly swayed his body. Surprisingly, he was spontaneously grabbed my arms twice during the first cycle practice. The moments I present here illustrate his level of understanding in music and verbal language and show that music can change his emotional state and enrich his learning.

There was an event in session 4, which was enough to indicate that Xuanxuan's understanding was better than his classroom teacher's evaluation.

During the last session on 13th Feb 2015, Xuanxuan settled and he briefly concentrated when we played instruments together. For example, he softly smiled and swayed his body while we played turn-taking via the drum and piano without physical support. His rhythm was a little unbalanced, but we all followed or let him play solos. He particularly, liked that we called his last name and encouragingly he completed the music on the drum with the music of - If you're happy and you know it. Xuanxuan's case highlighted the advantages of using improvisation techniques in classroom teaching. Xuanxuan's reaction brought me one step closer to illustrating that live music and improvisational techniques are better than the recorded or radio music for children with autism in the class.

Improvisation techniques are very practical, but the teacher needs to have better understanding of where to implement them. Xiaoqiu asked me to teach him about the all types of improvisation skills in order for him to teach in future. However, improvisation music is a kind of educational idea and guided Xiaoqiu to understand the idea of

improvisation first, and then practice the basic musical techniques; the last and foremost thing is that innovation is the ultimate aim in improvisation.

Images show that Xuanxuan's attention was focused on our interaction. I improvised on the piano and he stood beside the piano to wait for hands clapping. It was an interesting moment for me to reflect on.

Image 4-14 Reciprocal playing – high fives

4.3 Key Child in group 2: Jinyan

The children in group 2 belonged to a younger age group and these were the children with whom I tried Nordoff-Robbins music with Chinese lyrics and traditional Chinese music materials. I worked using pre-composed music (composed by me), Nordoff and Robbins music with translated Chinese lyrics and filled in with some vowel sounds which matched the needs of younger group of children. I mostly used four music activities improvised in each individual session to facilitate verbal and non-verbal communication. With these group 2 younger aged children, there was free play time with unstructured teaching in each session, aimed at gaining a good and trusting relationship between us. Moreover, I used this to gain more knowledge about the child in the learning environment.

4.3.1 Jinyan's background information

Cycle 1 showed Jinyan's progression in musical communication, level of musical verbal and nonverbal responsiveness to the different style of music through few activities. For example, Jinyan most enjoyed drumming, seen in his facial expression and imitation, but his responsiveness seemed less positive with other instruments, such as, bells.

Jinyan was born 2009 in Shenyang and he was diagnosed with autism in 2012. His teachers described him as a naughty boy with blurry sounds when he speaks. His teacher mentioned that he might have a temper if he does not get his wishes. His mother said that her son likes nothing but food even though he plays in the music class with her help. Jinyan has not practiced in any other therapies or educational program. No one knew his musical preferences. He had imitating rhythmic pattern in the music class. He may be able to copy the basic beat occasionally, but there were no vocal responses to music or other type of activities. In addition, Jinyan did not have awareness of tempo changes, so I thought it might be difficult for him to play in an instrumental ensemble.

Communication(session 1-8)

Name of client:	Jinyan (group 2) in cycle 1					
instruments frequency of reaction physical reaction	piano	hand chime	drum	colour bells	shakers	toy balls
Smile	4	2	5	3	3	1
Eye contacts	5	1	6	4	3	1
Joint attention	3	1	5	2	2	None
Body movement	5	1	6	1	2	2
Language expression	5	2	5	2	3	1
Musical imitation	4	1	5	3	3	2
Communication via musical behaviour	3	1	5	3	2	2

Table 4.3 Jinyan's session's analysis in cycle 1

An individual DCTM session content

imitation and turn-taking in session 1-3 aimed to build up the connection and trust	• pre-composed music with drum playing • Nordoff and Robbins music with go and stop activitie
Turn-taking ,imitation and initiation used in session 4-6 aimed to encourage children to lead the session, build up the confidence to communicate	• Nordoff and Robbins music with instrumental emsable prepared for next stage • Improvised on the children's rythm of Chinese
Multiple used activities at the final stage in cycle 1 aimed to develop self-expression, more playful and spontaneously to communicate verbally or non-verbally	• Complex to use music during this stage and combined teahcniuqes into a music activity • Improvisation always be the key point.

Figure 4.4 Individual DCTM session

In cycle 1, Jinyan progressed as the new musical materials went along. Jinyan's sessions were divided into structured (music therapy techniques) and unstructured (free play) parts. There were four different types of musical activities during the sessions. The overall picture was that IMT techniques were more effective at improving social interactive ability and joint attention behaviours in Jinyan than free play (Table 4.2 Jinyan's session 1-8). Jinyan particularly responded to piano and drum improvisation when I played upbeat music rhythmically. He displayed longer events of eye contact (session 3 and 4), joy and spontaneous playing (session 6 and 8). Based on my reflection diary I found that IMT interactions are the motivational content between Jinyan and me, in addition, promoting self-expression and social interaction based on the data analysis.

Session 1-3 Introduced music and music therapy into the music session

- I introduced the sample music, which I selected to match Jinyan's temporal needs and encourage him to interact or to respond.

- All songs I included target sound's' and 'r' based on the teacher's suggestion and

my observation from the assessment session. The target words in the playing songs were emphasised by the rhythm so he could practice.

- Observed his playing and prepared for the next stage.

Sessions 4-6 Built up the connection

- I developed more structured teaching during this period.

- I intended share Jinyan's joint attention more swiftly and naturally through structured music teaching than unstructured playing.

- I implemented the intervention of drum playing and 'Go and Stop' activities to strengthen the connection between us.

Sessions 7-8 Reciprocal interaction and responding to music

- I implemented more interventions during Jinyan's individual music sessions.

- I tried sustaining social interaction and eye contact for longer events and Jinyan was more playful.

- Improvising the music to identify Jinyan's learning needs.

Jinyan was seen as a naughty boy and his mother was very strict with him, even so, Jinyan still made trouble when his mother left the community centre occasionally. For example, he would run into other classrooms while they were having a class. Jinyan did not seem to have a routine to follow, except that eating needed to be on time. He hated to sit for long time particularly in the classroom. I found from the first assessment session that Jinyan was over active. He was interested in every instrument, but not playing them. He was also interested in running around the room, but without concentration. He showed no attention and responsiveness at all, his intonation was strange with levelled tones.

To see Jinyan's behavior in my session, I felt he was more like released bird, flying around. It seemed he saw nothing, but he did remember what he played during the assessment session. I saw him as having energy that he needed to release, and that he was innocent in the trouble he caused. Could the pre-assessment allowed me to see the real child in the real learning environment.

Chapter 4: Cycle 1

Jinyan showed his capability to learn music over the 8 sessions in the first cycle. It was positive, however the difficulty at the beginning was how to connect him and communicate with him. Furthermore, he was affected by the bad weather. For Jinyan it was even harder because of his younger age, it was not an easy path for his mother and a little boy.

The first video recording session for Jinyan in the classroom took place on 17th December 2014 and was transcribed by me. The session began at 9 o'clock on time in the morning. It was a very windy and snowy day in Shenyang, but normal weather for the winter here. The arrangements were the same as with group 1 in the fifth floor of the community centre, but with early years teachers Mingming and Xaioqiu. The classroom setting was the same with upright piano and little tables and chairs and ball pool. There were some percussion instruments and wind instruments in the basket on the table and a full set of hand-chime. Xiaoqiu prepared for the video and children were running in and out of my classroom occasionally.

I selected the Jinyan's video to analyse and present it in three stages as before. There were typical behaviours of lack of attention sharing and social interaction and intonation difficulties in Jinyan's communication, which I show in presenting the findings. There were eight music sessions which show the child's interaction problems, lack of functional abilities and positive responsiveness. Eventually, Jinyan learned to share his attention very briefly and there were improvements with his mutable attitude and intonations of 's' and 'r'.

Jinyan was brought over by his mother at 9 o'clock on the first morning. She sat behind of him and Jinyan sat with a poker face. I realised that Jinyan might behave very untypically under his mother's monitoring. Then I whispered to his mother and asked her to leave the classroom for a while which she did.

The classroom atmosphere changed suddenly and Jinyan started to smile and move around.
I did not play music yet, he took the drum and put his feet on the top of the small size drum,
Xiaoqiu made Jinyan sit again, and then Jinyan took his shoes off and played with them.

After 2-3 minutes, I started to play pre-composed music without singing lyrics, instead using
the vowel sound 'a' which was easy for him to imitate and take turns. He stopped playing
with his shoes, it seemed that he listened, I played twice then I asked him to put his shoes
on, he obeyed but impatiently. During this time, I played music with early years teacher
Xiaoqiu, and Jinyan listened as well as casually putting on his shoes. While waiting I changed
keys into many different major scales, then I played chords progression into three beats with
speaking rhythm, said 'put shoes on, great' repeated many times and tried to make it as a
game.

Image 4-15 Playing with shoes

Jinyan refused to sit on the chair, which is a requirement for the class in the community
centre, and took his shoes off after his mother went off the classroom. Jinyan looked at me
and the piano with an uninterested expression. He wrested a little drum from Xiaoqiu and
smiling, randomly beat on the drum with his hands and feet. He is interested in new things
including me in the classroom even though we had met once for the assessment session. We
all believed that Jinyan liked music, but he was a little shy and his facial expression was
unreadable (not happy but definitely not bored).

Image 4-16 Sounds of 'mmmuum'

Jinyan stopped to playing his shoes and became still to listen to the piano playing. Xiaoqiu

was playing the drum with the basic tempo of the music. After a while, Jinyan played with

his shoes again, and I said to him 'I would play with Xiaoqiu until you put your shoes on'. He

made sounds of 'mumummu, a......' with different pitches to show his dissatisfaction. I

played the pre-composed music in different major keys to see whether he could feel the

differences. During this he did look me couple of times when the key features changed.

Jinyan did use some sounds to communicate his wishes and rejection as well by

'mummm,a.....' sound. He concentrated on the music while I played for a short while, which I

felt meant he liked music. He also shared his attention which showed his music listening.

According to the information which given by the community centre about Jinyan, he

generally refuses the teacher's instructions in the class if his mother is not present. However,

Jinyan seemed to like music but showed enjoyment in his own way.

Image 4-17 Happily face with shoes playing

After playing around the different key signatures with music, Jinyan resumed playing with

his shoes. I encouraged him to put his shoes on properly with music chords progression. He

smiled when I called his name and reeled right and left with his shoes. He leant on Xiaoqiu's

shoulders and wanted help from him, but Xiaoqiu and I exchanged a quick look and refused

to assist him with his shoes. Moreover, he very naturally noticed us calling his name. So I

saw that he was capable of sharing attention.

Jinyan's session (1)   on 17th Dec 2014

Timeline   05:03   05:25   06:00

Jinyan

Facial expression   Sideways look -------------------------   sniffing with surprise ------------------------------frown with 'a' sounds

Direction of gaze   Piano -----------------------   playing shoes again   ----------------------------------drums

Playing shoes   Hands on the drum--------------   with tiny sound---random playing drum
Voice & drum

Li

Piano &   Playing the music and singing the tune with vowel sound 'a '

Verbal

Facial expression   Smiles --

Jinyan

Longer looks   About half minute look at me playing the piano

Listening to the music   He stopped playing his shoes without any movements when started to play the piano

&

Li   Interaction   He random played on the drum and matched music unevenly

Figure 4.5-1 Frame-by-frame

Multimodal video analysis with different modes

		Modes of musical communication	Mode of gaze	Modes of gesture	Session format & series
Multimodal analysis	Li's (my) action	I played greeting music on the piano and sang Jinyan's name. During the singing, I made a musical game of 'put your shoes on' and waits for him to respond; no musical responses, but his understanding of the musical communication seemed appearing.	I played greeting music and looked at Jinyan's shoes playing, particularly, the eye contacts happend when I sing his name and stops, wait during the improvised music based on the pre-composed music.	I turned her body and lean to the side of Jinyan, headed with the music tempo and left her right hand up when music stopped.	Session 1 Individual
	Jinyan's action	Jinyan sat on the little chair remind static when I played piano music. However he impatiently put his shoes on while the music went along.	Jinyan occasionally given me a sideway looks during the musical game.	He hold his shoes and draw out the insole, kicked his left shoe away, at same time, hands tapped his thigh.	
	Actively playing together	We seemed playing interactively with shoes on and off through improvised music.	Jinyan looked at me when music stopped and looked down his stuff when I played again	I followed his actions and catched his elusive behaviours.	

Figure 4.5-2 Video session analysis

	Early years teachers	Researcher
Field notes	Jinyan was communicating with either teaching assistant (early years teacher) or therapist in the session. He refused me to put his shoes on and impatiently put his shoes on when therapist asked. He showed his interested in music by sitting in the chair statically for a while. He carelessly obeys the therapist's instruction during the game 'put shoes on' without his mother monitoring. It was a good sign.	I started with pre-composed musical singing with vowel sound 'a' and hoped Jinyan could easily copy. However, he just listening without any movements. There was one point I felt regretted that I stopped playing piano when Jinyan's sniffing. I should carry on with his sniffing and improvised with it, to see what may happen. Although, later on, Jinyan and I played a game 'put shoes on', it convinced me more that I should improvise with whatever he shows during the session.
Reflection journal	He responded to therapist by putting his shoes on and off, moreover, he sat on the little chair for a while more than he normally tolerance. There also something he did well, such as he matched music occasionally, indeed, he impatiently followed instruction. His language and pronunciation is the major impairment.	Jinyan's first session showed his capability of understanding in musical and language. Such as I gave the instruction to put shoes on while playing the pre-composed music, he listened as well as managed to do what I asked. However, I need to clearly separate my wishes and the session aims when I teach next time. Because the priority aim for Jinyan is helping with his communication, not modelling a perfect boy.

Figure 4.5-3

Chapter 4: Cycle 1

Session on the 6th Jan 2015 (the 3rd session)

As I have described elsewhere, there are three stages to selecting videos in order to analyse and present Jinyan's first session in my thesis. Also, there are criteria required to decide the focus of the analysis and data presentation. I selected this session both because there were moments within it showing Jinyan's character in a positive mood and in a typically unresolved problematic behaviours. This was the third session and Jinyan seemed to like being in the music class as he came into the room without any enforcement or his mother's monitoring. One thing I need to add is that between the second and third session, there was a New Year's holiday lasting for about a week.

Jinyan's video analysis in session 3

After the New Year's holiday, the community centre re-opened for children. There was the same routine as Jinyan came to the classroom on time at 9 o'clock in the morning, but his mother did not come to this session. The early years teachers and I planned to play the train music via turn-taking and imitation activities in order to improve JInyan's social communication abilities, as well as to extend his attention span. We planned to use little chairs to line up as the train and to take turns acting in different roles as passengers and drivers. However, Jinyan smiled and pushed those chairs back and forth with the sound 'hahaha...' regardless of what I said. Unfortunately, the game could not continue. Jinyan's teacher told me that he always makes the sound 'hahaa....' when he feels restless or is refusing things he dislikes. I quickly changed the plan while he was moving the chair around.

I picked up a drum and asked Xiaoqiu to sit and play the piano with the basic tempo of 4/4 to a drum playing ensemble. Jinyan listened and stopped moving around, then I used my left hand to blow a horn; Jinyan immediately picked up a horn from table, but he took off the reed of the horn instead of playing it. He quickly picked up another to do the same. I realised that he did not share our music. I knelt downed and looked into his eyes, talking to him and putting the reed back into position very patiently, Jinyan stopped for a second, and then followed.

Image 4-18 Playing shakers and tambourine

Jinyan picked up a shaker playing exploitatively without rhythm or concentration. We all followed and supported his rhythm for a while, I improvised on the drum; suddenly, Jinyan stopped, then he changed the way of playing the shaker consciously with a regular changing pattern. He played the shaker twice with both hands and continued to play the shaker on the edge of the chair, using both hands repeatedly played this pattern. Xiaoqiu and I played basic rhythms, phrasing carefully to avoid disturbing him. It was an ensemble and was a moment of actively playing together, sharing the music and fun.

Image 4-19 Playing in patterns

As the instrumental ensemble continued, I added the counting learning to count the beats while we played. 'R' and 'S' are difficult sounds for Jinyan, and the counting was intended to help, because the numbers 2, 3 and 4 pronounced in Chinese include those sounds. Moreover, the shakers pronounced in Chinese also include the sound 'R' and 'S'. It was easy to teach him when he was in a relax environment with a mutual playing process. Importantly, in this moment, we shared the same interests. It was a quite positive moment for a young autistic child. It was also a longer instance of eye contact according to my video review and analysis. Please see the details in multimodal analysis forms in Appendices (D-2).

Jinyan's video analysis in session 4

Jinyan's second stage of music session running with my plan in cycle 1

With the same routine Jinyan came into the classroom by himself at 9 o'clock in the morning. His mother was still absent from the session as we agreed. Xiaoqiu and I set up the room, preparing as wide a variety of instruments as possible to display on the table. During this

session, Jinyan played actively. There were things that may sound trivial, but I believed were quite important for a young autistic child. These include observing his fingers' movement or lean on my shoulder.

At this stage, we aimed to build up the connection via music. We planned this session, changing the drum positions in order to develop Jinyan's attention span. The session began with displaying the four drums. I verbally explained those four drums in sequence. This seemed to be more difficult than he has the ability to understand. He was still using his fingers to count, but he had problems pronouncing the numbers.

Image 4-20 Quick and slow motion

Jinyan played drum to our requirements, but this moment, he seemed to find it difficult to follow the instructions. Then we changed drum playing into 'quick motion and slow motion'. When I played fast on the piano, then he played quick motion on the drum with shook his head and laughed. Soon after, I changed piano playing into slow beat and waited for Jinyan to respond. Jinyan played just twice with the music and his head turned away from piano. We lost him at this point.

Image 4-21 Working together

We tried again to play with Jinyan in a slow motion, but he did not pay attention to it. I stopped and asked him whether he would like to try to lead us. I would play slowly if he gave the instruction 'slow' and quickly if he said 'quick'. However, he did not synchronise with his own orders. It was a happy moment even though he didn't manage it himself and it produced laughter from both of us. It was a paving stone for further development in joint attention.

Image 4-22 Numbering gestures

To extend the 'slow and quick' motion playing, I asked Jinyan to count while he played. Jinyan tried to play the drum using left hand and count the number '1' with his right hand finger successfully. However, he failed to play the same pattern on number '2'. He used his fingers very seriously in number gestures (looking very cute) but did not play the drum. During this moment, I added more material, changing the drum's position with the piano chord progression. There was a moment in which Jinyan leaned on my shoulder after he beat drum with big smile, he then touched Xiaoqiu's hair. It seems to show a child with an inner sense of security. Please see the details in multimodal analysis forms in Appendices (D-2).

Session on 14th Jan 2015 (the 5th)

Following up the 4th session with drums, I developed a musical game of 'train is running' in order to attract him proceeding to the next step of learning. However, this session did not run smoothly. Jinyan showed no interest in our plan and messed up with the arrangement. He was running around happily without following any instruction.

The session started at 9 o'clock in the morning, Jinyan went into the room without his mother accompanying. After we were greeting each other for about 2-3 minutes, Jinyan started to run around the room again like the first session, but with a big smile. Once again, he made a 'hahaha' sound when we were trying to begin the musical game. He was overactive, moving the chairs all around the room, it seemed that he was fidgety in showing his stiffing laugh. He laid down the floor at least three times during the first ten minutes.

I decided to improvise with Jinyan's reaction in the session instead of continuing the musical game, but I failed to connect him at this moment with verbal, music or physical movements. I realised that I lost him in this session but I did not know why. Soon after, I only kept the drums with us and tried to play with Jinyan. Finally, he settled and played drum for about three minutes with a relatively calm mood. I felt that this was the time to stop and let him to

leave the session. So I sang the goodbye song without any accompaniment from Jinyan, then he left.

Problems have been found by analysing the video and reviewing the field notes. He was behaving quite differently from the last session. Emotional irritability and anxiety were the main characteristics in this session. It may be because the session plan was more complicated than he has the ability to understand. I found that there were some problems with the musical game, too. During the game, for example, Jinyan could hardly see my face because of the line-up position; he may have felt unsafe or he may have preferred to sit as close as possible to the drums, and he found it difficult to reach the drum in this position.

The major problem in this session was that my understanding of Jinyan's behaviours was very low. I should have changed the original plan soon after his impatience reactions appeared.

Xiaoqiu and I discussed this session after the class, Xiaoqiu suggested that Jinyan normally behaved like that, but that he liked music and was quite disciplined with previously sessions, so it may be that other things affected on this session. We also talked with his mother and told her about what happened in this session. She understood and she mentioned that Jinyan was not as comfortable as he usually was, due to a cough.

The session on 22nd Jan 2015 (the 6th session), Jinyan was absent for sickness.
Session on 3rd Feb 2015 (the 7th session)
The final stage of Jinyan in cycle 1
Reciprocal interaction and responding to music

After his absence due to sickness, Jinyan returned to the community centre on the week of 3rd of Feb 2015. Xiaoqiu and I were a little worried about him. In the morning, Jinyan showed up by himself and quietly walk into the room. He seemed to concentrate even at the beginning of the session. Jinyan was interested in everything and he counted with me again, plus he used his fingering postures in drumming.

Traditional children rhymes (If You are Happy and Frere Jacques) were implemented into this session successfully. He seemed to concentrate even at the beginning of the session. Jinyan

interested in everything in the room. He counted numbers with me again, plus he showed fingering in drumming initiatively.

Jinyan and I were holding hands together to chant the lyrics of Frere Jacques with drumming. We also encouraged him to practice a 'stop and run' activity with verbal instruction extending to further drumming activities.

Image4- 23 Counting together

Jinyan and I were playing the drums, along with counting together. The target sounds for Jinyan were 's' and 'r' during this stage. We chanted the lyrics of Frere Jacques, in which there are many 's' and 'r' included. Jinyan very patience played the drum with our hands holding tightly. His eyes followed our arms lifting up and down. In addition, there was a relaxed smile on his face. Music played, compatible with an enjoyable atmosphere.
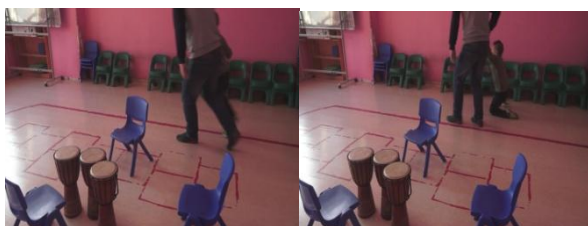
Image 4-24 Stop and Run

I asked Jinyan to lead the session with verbal instruction of 'stop and run' when the session was halfway through and running smoothly. This movement aimed to develop his attention sharing. At the beginning, Jinyan found it a little hard to coordinated verbal, physical and musical elements together. For example, he said 'stop' then he still moved or he ran quickly without saying 'run'. Soon though, after three times spent practicing, he slowly controlled his attention with multiple tasks and was happy to lead the activity with Xiaoqiu's assistance.

Image 4-25 Jinyan's shyness

Nearly to the end of the session, we played the drum with a variety of changing positions in order to share the focus. I held the drum up high for Jinyan to reach by standing up straight, or I held the drum very low, nearly touching the floor, for him to play by reaching down. It was a turn-taking with reciprocal playing activity which was flowing and graceful. He put both of his hands on his head with a big smile between my instruction and his playing. It was a particularly interesting moment. Please see the details in multimodal analysis forms in Appendices (D-2).

Session on 9th Feb 2015 (the 8th final)

In the last session for Jinyan in cycle 1, there were many things happened and there were moments and events to show his ability to communicate via music. In addition, it also showed how his level of musical understanding had improved. For example, he understood the meaning of my nodding when I played instruments. As time went on, the implication emerged into the child's development. For example, Jinyan was confused by what I played in the first class and he would hardly understand my postures. However, by last session, he showed his understanding of my body language as well as musical hints.

Jinyan's video analysis in session 8: This was the last session for Jinyan in cycle 1 and also it was very close to Chinese New Year's holiday. Xiaoqiu and I were talking about all the children in the community center, and how they were before and after the holiday time. Xiaoqiu mentioned that the children behaved as is normal for other children in schools around that time. They are happy before the holiday and difficult to teach after they return.

I notified Xiaoqiu that I had merged the contents of the last session, strengthening the impression in order to solidify the developmental foundation for the holiday returns. I decided to use two traditional children's rhymes, with improvisation, as the main basis.

Happy song

Janpanese folk song

Score 4.3

Image 4-26 Clapping, stamping and laughing

Jinya's mother accompanied him into the session. He sat on a chair where close to my piano. I handed over a drum to Jinyan, and then he beat randomly. His mother said that he felt uncomfortable today before the session started. I tried carefully to ask whether he would like to play. He followed and added his fingering posture, too. He was coughing a little bit, because of the weather I assume. I played 'If you are happy' and he waited patiently to fill in the space with clapping hands at my requests. Jinyan was surprisingly natural in following the instruction of beating the drum, stomping the feet and clapping hands.
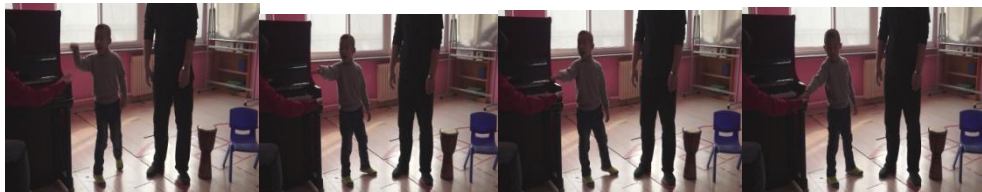
Image 4-27 Reciprocal playing

After five minutes, he seemed to be getting into the musical environment. He copied my mouth movements with smiley face in order to practicing the sounds 's'. I changed his position of sitting, to walk around the room while the music played, then gave him verbal order of 'touch someone's hands'. Such as, 'touch mum's hands, please' to fill in the music

space. He had a little confusion at the beginning regarding the physical coordination. After few times, though, he was happily running around the room with musical rhythm and filling the gap correctly.

Image 4-28 Happy ending

Jinyan closed his eyes with smile while playing the basic pause on the drum with me. I felt that he enjoyed music very much at this moment. In addition, he was stomping the feet, clapping his hands as well as waiting patiently when I asked verbally. It seemed Jinyan had no problem in finishing all the requests. I improvised variously with the verbal instructions, asking him to touching the wall, floor, shakers, mum's ears etc. We were really playing together naturally at this moment.

Jinyan's session (8)   on 9th Feb 2015

Timeline   11:05   13:00   14:35

Jinyan

Facial expression   Little bored looks --------------------------closed eyes with smile --------------------------smile

Direction of gaze   Drum ---------------------------------- lifting arms and drum--------------------------drums

Playing drum
&Voice   Hands on the drum-------------   with tiny sound----------------------------------random playing drum

Li

Drum &
Verbal   Holding the drum up and down with changing positions with verbal instructions

Facial expression   Smiles ---

Jinyan
&
Li

Longer looks   Continuously with eye contact

Body language   Jinyan played naturally on the drum regardless where the drum's position

Interaction   We connected together by drum playing. It did not need any verbal explanation with this activity went on

Figure 4.6-1 Frame-by-frame

Multimodal analysis

		Modes of musical communication	Mode of gaze	Modes of gesture	Session format & series
Multimodal analysis	Li's (my) action	I played drum up and down to attract Jinyan's attention in the middle of this session. During this activity went on, I challenged him more with the multiple tasks. Such as, I added more subjects with touching feet, someone's ears ect.	I hold the drum and kept my eyes on Jinyan's movements along with my chanting. Especially, when I changing the subjects, wait his responsiveness.	I lifted my arms up and down, also lower down my body to see Jinyan's reaction. I also stopped for a second with my holding drum when the subject changed.	Session 8 Individual
	Jinyan's action	Jinyan sat on the little chair very relaxed when we played drum together. Furthermore, he patiently waited what was the next task.	Jinyan constantly looked me with the drum up and down at the moment.	He played drum with both hands on, he beat the drum correctly where ever the drum was.	
	Actively playing together	We played happily together with up and down on drums and body movements through improvised instructions.	Jinyan looked at me at all events during the activity.	We most of time played same position with arms up and down.	

Figure 4.6-2

Narrative and Reflective notes			
	Early years teachers	**Researcher**	**Focus groups**
Field notes	Jinyan was communicating with people in the room, particularly with the therapist via musical activities. He responded to therapist naturally without any assistance at the most of the time. Such as, he reached drum automatically when the therapist lifted drum up over his head. He also touched his mum's ears when the therapist asked for during the instrumental playing. Jinyan and the therapist played drums together in turns with smile.	I started with piano playing, soon after changed to drumming and sat with Jinyan face to face. Jinyan liked to be with me closely either playing or chanting in the music. This session he was not feeling well with a little coughing, yet he played well in all pre-planned subjects through the whole session. I improvised different contents and finished with the exaggerated drumming rhythm and Jinyan's big laugh.	Jinyan showed moments of clearly expressed responsiveness related to the music and looked at me with excitement in his last session in cycle 1.However, those moments rarely happened in cycle 2. The details see appendices (H-3).
Reflection journal	It was really encouraging when we saw Jinyan responding to the therapist musical chanting. For example, he sat on a little chair after him playing the 'stop and run' musical game; he still kept the rhythm with therapist 'beat on the drum or stop'. Whereas the therapist did not tell him to do. Jinyan and the therapist were played mutual.	Jinyan played well in the last session and I was encouraged by his responsiveness. Such as Jinyan clapping hands with a big smile when I praised his actions. Furthermore, he played his tights, touched wall and clapping my hands etc. between the playing which showed his enjoyment. Jinyan's reaction has exceeded my expectations. His ability of communication has improved with the time went on.	the relationship between the early years teachers and Jinyan was little difficult to remain as good and relaxed as the cycle 1. For example, Jinyan reacted to teachers a little tense, like he sat on the chair with his hands back up position. The details see appendices (H-3).

Figure 4.6-3

4.4 Other children in group 2

4.4.1 Siqi

Siqi is the only girl in the group 2 and I really enjoyed her session on 22nd Dec 2014 which was her first session. Siqi is always biting her hands and has her head down when she is nervous, as I have been told by her mother and her class teacher. The early years teachers in the community centre told me that Siqi is a difficult girl to teach and even some teachers do not have a chance to see what she looks like. Holding her mother's hands and walking around are her main characteristics in the community centre. Siqi not only has problems with communication, but also has physically difficulties.

At her first session, she walked into the room with her mother, hand in hand. Her mother left her and walked to a corner of the room. Siqi was really nervous, with head down, and kept her body stood still for a while in the middle of the room. It was a difficult moment for me because the room was not a preferable place to teach for me; also I did not connect with her. However, I still tried with piano, and Mingming – an early years teacher - played on the drums with chanting music, improvised with her waving body rhythm. At this moment, the music was softly played with very strong rhythm. Gradually, she looked up and moved close to the piano. She seemed relaxed when we sang her name of ' Siqi zhen bang' (which means 'Siqi great') in the repetition with the support of the music chords progression and basic drum beats. Siqi smiled and only bitted one hand, with her other hand waving up and down. She responded to our music and accepted with my physical support.

It was an encouraging moment when Siqi walked with my rhythm and a big smile showed her real happiness and joyfulness. Her mother was surprised by her responsiveness in my session. She said that Siqi hardly spoken or made a sound, but in this session she made sounds and was laughing after the session. Mingming and I had a short discussion reflecting on Siqi's first session and Mingming suggested to asking some other teachers who taught Siqi in other subjects, reviewing the video session together in order to have multi angles to analysis it from. Most of the teachers were surprised with Siqi's reaction in my first session. They all believed that Siqi definitely enjoyed the music played and activities she joined in.
These pictures were extracted from Siqi's video session 1

Image 4-29 Siqi's reactions

There was a moment which showed her relaxation and enjoyment in my music. Siqi moved closer to the piano I sat on. Facing me with a raised jaw, she looked at my face. It was a turning point, showing that she liked to play with me. I stood up and held her hands first, then she leaned on my body with my hands supporting with her elbows. She swayed her body with the basic drum beats and made a big laughing sound.

My reflection for this session: This session's classroom setting was not designed for teaching in children with autism. There are mirrors fixed on the walls. Only one side of wall had windows. There was a lot of furniture heaped up at the back of the room. However, those things did not disturb Siqi at all, but really affected me as well as other two children in the group at the following sessions. They all reacted impatiently because of the reflection of all the mirrors.

Interestingly, I temporarily forgot all those factors when Siqi responded to my music and walked close to me. I was affected by Siqi's behaviours in terms of her passion. Also, I found that the rhythmic pattern was more important than the tunes for Siqi. She may have the limited understanding on music, so the actual music did not influence her. However, the rhythm may hit on her waving body movement, therefore, the improvised rhythmical materials made her excited. Furthermore, this spectacle may have been determined by the personalities of those involved.

Siqi's session (1)   on 22nd Dec 2014

Timeline   07:13   07:25   08:00

Siqi

Facial expression   raised face -------------------------   eye contacts ------------------------------ smile with 'mm, a' sounds

Direction of gaze   therapist's face -----------------------   hands relaxed hanging down -----------------------------------piano

Playing hands   hands sways on both sides of the body --   making the 'mm' sounds
& Voice

Li

Piano &   playing the improvised music and singing the tune with Siqi's name
Verbal

Facial expression   Smiles --

Longer looks   about half minute look at my face beside of the piano

**Siqi
&
Li**

Listening to the music   she moved around the room and --stopped at the front of the piano

Interaction   she looked on li's face and they swayed together with body movements

Figure 4.7 Frame-by-frame

4.4.2 Sunzhongqi

Sunzhongqi is the youngest boy in the group 2. His classroom teacher appreciated the way his mother helped him and gave him enough space to play. However, he rarely makes sounds, so dose not speaks. His classroom teacher told me that Sunzhongqi is a capable boy with physical abilities that are well developed at his age; in addition, he sometime looks at people naturally while they talk. Generally, Sunzhongqi's class lasts 25 to 30 minutes in this community centre, whereas my session lasted about 10-15 minutes. He ignored us in the most of the sessions. Very occasionally he responded to me with drums. He refused my physical support. Zhongqi showed a short attention span and hardly communicated with us, either verbally or non-verbally. However, by session five, he did not refuse physically support and played with both drum and guitar. It was surprisingly that he stayed in the room about 23 minutes on that session. I felt that Sunzhongqi liked the familiar environment and felt comfortable rather than giving attention to the musical activities.

Session five was moved to a new venue as a temporary arrangement on that day. We all sat on the floor mat with shoes off. In this session, he smiled and made sounds of 'mum, mm, a, a, etc. There was no special change with the instruments selection in this session, except room setting difference and piano absent.

My reflection after discussing with Xiaoqiu: We all agreed that there were important factors affecting teaching. Teaching environment and natural environment are essential, but the former is more important, as I learned. In my understanding, classrooms are designed with different purpose, to match teaching needs. However, Sunzhongqi was more relaxed in that room with musical teaching, therefore, the only reason to explain this is that I design the unsuitable session for him or musical content was too straightforward. Other than that I could not give any other explanation.

The following pictures were extracted from video session 5

Image 4-30 Playing on the drum

He played drum with Xiaoqiu naturally without any verbal instruction and physical support. We saw a soft smile on his face. He caught the basic rhythm and seemed to enjoy it. Xiaoqiu held the drum slightly inclined to his side. This activity lasted about a minute longer. I had not seen this kind of event with my previous four sessions.

4-31 Plucking the guitar

Sunzhongqi and I knelt down on the floor mat. It seemed that his brain occupied by the guitar. I plucked the strings and verbally asked him to accompany it. He made the sounds of 'mm, a, a' which sounded like baby talking. Unfortunately, I was not able to translate his language, but I knew he talked to me in his way. This was the first time that Sunzhongqi responded to me verbally.

4.5 Summary

This section comprises three parts: (i) an overview of how the children responded to the music activities and the techniques used in cycle one to enhance their learning and their communication abilities; (ii) an overview of the focus group discussion concerning the pre-

and post-assessment sessions for cycle one, where children's learning and my teaching were reflected upon; (iii) my reflection on my own practice in cycle one and the problems I encountered.

I used multiple methods of data collection throughout cycle one. Upon analysing those datasets, it was clear that different music-based techniques would be necessary to enhance the children's communication abilities and improve their learning. In particular, classroom observation and video-recording analysis revealed that children responded in an active way to the piano and drums, while they had a more limited response to ukuleles and non-tonal bells.

Children's responsiveness

Group 1 children, who were aged six to eight years old, had been attending the community centre for nearly two years. The children had some educational background and were familiar with the teaching methods used by the early years teachers. In cycle one, the data showed children's progression in musical communication, their level of verbal and nonverbal musical responsiveness, as well as their responses to the different styles of music used throughout the musical activities.

Children in group 1 were most active in non-verbal communication, as seen in turn-taking and the imitation-through-music exercises. For example, through bodily movements and instrumental playing it was clear that the children responded to the music and me, as seen in Xuanxuan's, Yujing's and Ranhuan's sessions. However, there were limitations in the children's responsiveness to certain type of musical instruments.

Video analysis made it possible to identify how the children responded to music through turn-taking, imitation and initiation. Children's attention sharing, in particular, saw

improvement over time. For example, Yujing's joint attention developed throughout the sessions which displayed by the turn-taking and imitation through musical improvisation techniques – by session 5, he was playing instrumental ensembles on reed horns and drums with Xiaoqiu and me. In addition, Xinyu responded to music by making sounds and happy facial expressions, and her ability to share attention improved significantly, as shown by her relaxing body movements. Those behaviours are fundamental elements of communication for her. Another example is that Xinyu played the drum and made a 'P' sound when we were doing the musical turn-taking in session 4, when at the same time I asked her to clap hands as well. The video showed that her understanding of music and her responsiveness were changed. Also, there were longer periods of eye contact, which occurred three times during the 7th video session.

Spontaneous communication is a core learning need for children with autism, which is also a main aim in my research project. In the cycle one practice with groups of children, there were moments when spontaneous communication appeared with Ranhuan and Yujing during the music session in group 1 and other children in group 2. These children interacted with me not only verbally communicating, but also using body language to respond me spontaneously. Particularly, when these children and I playing instruments mutually which clearly indicated the level of these children's communication. Group two children were aged four to five years and had little educational experience in the community centre. Much was new to them and they had no musical intervention experience. In cycle one, these children enjoyed the music and their ability to interact socially and make eye contact improved throughout the sessions. Their progression in musical nonverbal communication was also clearly noticeable in the video footage. Through their facial expressions and in a general state of emotional calm, it was apparent that this younger group of children gained a certain sense of satisfaction from the sessions. Below, I detail some examples.

Siqi was swaying her body and laughing out loud when I played the piano at her first session, then she moved to the piano and looked up directly into my eyes. Qiaqia and I were playing together on the piano. He initially held my hand and put it on the piano. Then, while playing a glissando on the piano keys, his eyes focused on the keys and he had a comfortable smile on his face (in session two). We played on the piano in turns. There was no composed music, we were simply improvising freely. In Jinyan's third and fourth sessions, he responded particularly to piano improvisation when I played upbeat music, rhythmically. He displayed longer periods of eye contact, joy and spontaneous playing in sessions six and eight during turn-taking and imitation on drums and in body movements.

Focus group discussions in cycle one

The focus groups in this project had a dual role that combined a research function and an action function. Thus, information gained from focus group discussions guided the different stages of my research. Transcripts from these discussions also provided important information to use to reflect on this research.

As explained in Chapter 3, the participants in the focus group were recruited locally from Northeast China. They included: the headteacher of the local special needs school (Shen); the director of the community centre (Lining); the curriculum instructor of the community centre (Zhang); an early years teacher at the children's centre (Xiaoqiu); a professor from Shenyang Conservatory of Music (Na); and, a province governor from the education department (Sun). Except for head-teacher Shen, all of the aforementioned participants were present at the pre- and post-assessment discussions for cycle one.

The Director of the community centre, Mrs Lining, explained that group 1 children had usually only experienced music classes involving radio music or music recordings. The early years teachers based most activities on these types of music, which lacked flexibility and

provided children with little time to think or react. Rather, they would only usually copy the teachers' movements. Hence, most of the children exhibited difficulty in following the recordings. Therefore, the use of live music and improvisation techniques seemed to work well for the children at many points. By employing this strategy as a therapist, I could stop the music at any point if I felt the children needed this, and I could change the music in order to gain the children's attention. In addition, I improvised to respond to the children's crying, laughing or jumping and to leave enough time for children to take turns.

Focus group participants agreed that teachers' musical skills were insufficient to cater for the needs of the children in their schools and other organisations; it was apparent that children with special needs, in particular, require teaching methods that allow for the kind of sensitivity and flexibility that is afforded by human judgment as opposed to recordings. The focus group participants explained that, for group 2 children, it would be better to use instrumental versions for most of the new pre-composed songs. They also suggested that I change the pre-composed music into some children's rhymes, such as Twinkle Twinkle Little Star and If You're Happy – which are very popular in early years education classes in China. The focus group participants discussed the video recording of the pre-assessment sessions, where children responded to improvisation in singing and instrumental playing; children seemed to have difficulties responding to the pre-composed music and it seemed easier for them when the lyrics and rhythmic patterns were played repetitively. When the focus group participants reviewed the video sessions and discussed the evaluation scales for the two groups of children, they commented that there were no significant differences between group1 and group 2 children, who responded in similar ways to music, and they all enjoyed and explored music in their sessions. This, they felt was because I as the therapist had made space or allowed enough time for children to react, by using observation skills.

Following the completion of cycle one, the focus group discussions helped me to gain a comprehensive understanding of the key characteristics of my practice and its associated

issues. Thus, the Director of the community centre, Mrs Lining, explained that the crucial difference between standard early years teaching and my music therapist's teaching was the latter's use of live music. This was also the defining characteristic of this project. Children were to benefit from this new teaching style as well as from the different musical materials. The focus group discussion together with the teaching experience helped me to broaden my research field from focusing on music extending to special needs and early years as well as the teachers training system locally.

As Governor Sun discussed, reflexivity and exchanges with academics are critically important for effective teaching and personal development. Some of the children's improvements during the first cycle were discernible in the video recordings, particularly in terms of their capacities for sharing attention, verbal and non-verbal communication, and social behaviour more generally. However, the children exhibited differences in these capacities only in my DCTM sessions, and then only occasionally. To illustrate, some children accepted physical support from me, such as touching hands, leaning on my shoulder or their head against my head – behaviours which demonstrate the children's trust and interest. Some of the children were calmed emotionally through the trusting relationship that was established and developed in the music session. This was evident from their moving around without biting their fingers, their being relaxed in their body movements and their eye contact lasting longer. Moreover, improvements in communication abilities were evident in other nonverbal behaviours, such as turn-taking in instrument playing.

During the second focus group meeting, I had a discussion with the director of the community centre and the director of the curriculum concerning the implementation of evaluation scales. This led to me simplifying the evaluation scales compared with the original more onerous version, and this helped the early years teachers and student practitioners to save some energy to complete their normal teaching tasks. After the assessment session, the teachers had made more use of the evaluation scales and had comparatively more

confidence in them. The focus group participants discussed the effect of improvisation skills on children's communication and attention sharing in the music session, in particular, via musical activities of turn-taking and imitation. Governor Mrs Sun said that children were active in the music session I conducted and that they made more eye contact during the sessions in both groups, as was evident from the video extract that was shown. Participants considered these recordings as sufficient evidence to demonstrate the effectiveness of DCTM techniques and their applicability to special needs classes for Yujing, Jinyan, Qiaqia and other such children in the groups. Participants maintained the view that these techniques not only improved the quality of children's learning, but they also enriched the content of the teaching.

There were considerations from the focus group after the post-assessment session at the end of the cycle one practice that the most of children were communicating non-verbally with me and Xioaqiu at different levels. In addition, the children were clearly using body movement and instrument playing and were clearly to respond to the music and to me. The Director of the community centre, Mrs Lining, was excited about the outcomes of the music sessions. She explained that the outcomes were encouraging and that the turn-taking and imitation involved in this designed music programme formed a positive connection between learning and teaching. Director of curriculum Mrs Zhang and Mrs Na also added that this programme also improved these children's day-to-day learning environment.

My reflections and the problems I encountered

I reviewed the video recordings and discussed my opinions in the focus group. The pre-assessment session did not run smoothly, as the classroom was changing frequently – the session was persistently interrupted and lasted an entire day. Pre-assessment took place on 17th December 2014 via individual music sessions. The pre-assessment was used to evaluate the children's level of musical responsiveness. This enabled me to plan suitable sessions for these children. The pre-assessment session analysis also provided a baseline

reference point for how the children were before the project started. Therefore, the focus group participants and I could discuss the progress seen in subsequent sessions based on this assessment session, and use such observations to develop further practice plans.

I only had one chance to conduct the assessment session and that was in class break. Probably because of the time and classroom arrangements, the children's attention was harder to focus than it might otherwise have been. In addition, I learned that the selection of the instruments was not rich enough and nor were the music lists. The reason is that during the pre-assessment session, I did not have enough time to move all the instruments with me when I needed to change the venue and the music could not all be played without the necessary instruments. Additional difficulties were that the early years teacher, Xiaoqiu, did not coordinate with me and from the beginning he experienced difficulties using the evaluation forms in the informal discussion. Xiaoqiu is trained as an early years teacher. Although he majored in special needs, he always asks the children to sit properly in class while he follows a set lesson plan which he rarely deviates from. This is in stark contrast to my framework for classroom planning, which is flexible and can be adapted to suit the children's needs at any given time. Moreover, I used the evaluation form with my sessions in general, but Xiaoqiu studied it for only half a day and felt he could hardly use it. Consequently, the evaluation scales were translated and simplified after the cycle one practice.

In analysing the pre-assessment recording and evaluation scales it was clear that most of the children in both groups enjoyed the music activities. Their reactions demonstrated the advantages of the improvisation skills that I used in the sessions. Children from the pre- and post-assessment sessions expressed their emotional happiness and freedom throughout the session in their facial expressions and relaxed body movements. Following the focus group's recommendations, I used rhythms and melodies familiar to the children, instead of other pre-composed pieces of music, which would have a greater impact on the children's learning

experience. Thus, I used the melody from Twinkle, Twinkle, and Little Star together with improvised lyrics, and children were much more actively responsive than they had been with the pre-composed music. Nonetheless, those children still benefited from classroom teaching involving the new musical programme, as it aroused their curiosity.

This was appropriate since the main objectives of cycle one consisted of stimulating the children's enthusiasm and gaining their trust, which would be necessary to help the children learn and improve their communication abilities, joint attention and social interaction. Relevant to these points is that it is usually ineffective to correct children's behaviour during a lesson. Thus, I later reflected on Jinyan's session where I had required him to sit properly on the chair and to stop playing with his shoes, which only added to his emotional disturbance. This reminded me that it is important to give children space and to refrain from imposing limitations upon them – this, I felt, was even more important for children with special needs.

Children are prone to lose interest in music when it is either too difficult or too easy for them to appreciate. Thus, a greater development of the children's capacities for communication and joint attention was seen when the music used in the class suited the level of their musical understanding. Hence, in session five with Yujing, the session plan did not meet his level of ability. This led to him losing concentration a few times during the class. Furthermore, based on my reflection diary I found that improvisational musical interactions provided the motivational content between the children and me, promoting self-expression and social interaction as well. For example, in Jinyan's last session in cycle one. I was encouraging him to lead the session while I improvised rhythms on the drum to complement his physical movements. He played well as a session leader and he expressed his emotions through simple verbal instructions.

Chapter 4: Cycle 1

In summary, children such as Xinyu, Yujing and Xuanxuan enjoyed the music sessions, particularly in the final stage of the first round. These children exhibited greater interest in playing instruments and in verbal communication with me through turn-taking activities, attention sharing and imitation. This was seen in Xinyu's session, when she played the drum with me, and sustained periods of eye contact occurred three times during a twenty-minute session (visible in the video recording). Such interest in the music sessions was also seen in a quite surprising moment when Qiaqia held my hands while we took turns playing the piano.

While theoretical foundations have played a critical role in guiding my research, practice is key to improving children's abilities. Thus, there were examples and techniques, theories from Nordoff and Robbins and from the literature on Intensive Interaction, which guided me in designing the project. However, the first cycle indicated the practical issues in applying the aforementioned theories. For example, Nordoff and Robbins' music is used worldwide in English, but this required translation to be used in China, as did the evaluation scales. In addition, the forms in both Nordoff and Robbins and Intensive Interaction needed simplifying based on their principles. In cycle one, the enjoyment of the music may be the foundation for the two groups of children's further development in cycle two.

Problems encountered

Three main issues were not sufficiently resolved during cycle one. The first involved parents, staff and carers who were attending the music sessions as part of the specific requirements of this study as we agreed before the research project commenced. However, some staff found it very difficult to comply with the regulations about what was needed and disturbed the sessions without meaning to. For example, one member of staff interrupted the session by joining it without prior notice. From my point of view this broke the balance in the classroom.

The second issue concerned the DCTM method. The latter was not meeting all the teaching requirements, but I did not sufficiently adjust the method to suit children's educational

needs. For example, Sunzhongqi was the youngest boy out of all the children and I had had difficulty connecting with him since the sessions started. He did not respond to me at the beginning of the sessions, but I kept trying to connect with him as I did with the other children in the community centre. Nevertheless, his situation remained almost the same until a turning point appeared in his fifth session: he communicated with me by using his figure postures and making sounds that resembled 'mm..aa..m'. In this situation it would have been fruitful to pay more attention to issues related to teaching beyond music.

The third unresolved issue concerned my dual roles in this study as the person in charge of the research and as a practitioner, particularly in cycle one. This made it difficult to receive feedback on my teaching after the sessions in cycle one, since Xiaoqiu and one of my students lacked the necessary confidence to evaluate my practice. This raises a further issue by demonstrating these teachers' lack of confidence in observational techniques.

Recommendations to guide teaching in cycle two

In the focus group's discussion of what could be learned from cycle one, it became evident that it may be a good idea to focus children's learning on one or two activities in order to see the subtle changes. This did not mean only implementing the simple activities, but the teachers enriching the teaching ideas with the activities. In addition, different styles of music and strong rhythmical song had been shown to improve these children's effective social communication. Therefore, I strongly suggested that the teachers implementing DCTM in cycle two carry on using the turn-taking and imitation activities with a variety of rhythmical tunes to strength the children's ability in communication, joint attention and social interaction.

Furthermore, music sessions set in the same place and at the same time every week could help children feel safe and protected as well. Thus, as the sessions progressed, I or Xiaoqiu would maintain the layout of instruments for each child's interests, and the characteristics of the room began to take on meaning and importance and form a sense of identity. This would increase the sense of security and predictability for later teaching in cycle two.

Chapter 5: Cycle 2

The findings are presented to echo cycle 1, focusing on one key child in each group to illustrate how the children responded to music. This chapter consists of cycle 2 data analysis on video sessions and findings. I include how the early years teachers responded to implementing DCTM and children's reactions. I also include findings from the focus groups where we discussed what aspects of DCTM these children and teachers enjoyed most and benefitted most from, as well as what competences the teachers would need to adopt to implement DCTM intervention successfully.

5.1 Key Child in group 1: Yujing

Cycle 2 Yujing's session analysis

First I sought to gain an understanding of Yujing's core information after cycle 1 (Table 5.1) before I began the main data analysis. The fundamental knowledge of Yujing's musical learning process in cycle 2 is summarised in Table 5.2 and the progression of the sessions is mapped and elaborated upon. Moreover, an example of an individual session analysis in cycle 2 is given in this chapter, which contains diverse dimensions in great detail. Based on this explanation of the individual session format, a procedure for presenting the analysis of the development on an individual child development via the DCTM session was created by teachers under my supervision.

1. Yujing was still 7 years old when cycle 2 was began.
2. He was more active than the first session in cycle 1. He talked more and was emotionally stable compared with how he was at the very beginning.
3. He was known to like music, and a good relationship was built up in cycle 1 via musical intervention.
4. Musical information: Yujing could imitate musical rhythm with assistance on changing patterns as well as sustaining the imitation. However, he was still not consciously responding to musical intervention verbally, but clearly demonstrated body movement in tempo.

Table 5.1 General information of Yujing ahead of Cycle 2

Table 5.2 shows Yujing's progression in musical communication and level of musical, verbal and nonverbal responsiveness to the different styles of music through different activities.

Communication (session 1-6)						
Name of client:	Yujing (group 1) in cycle 2					
instruments / frequency of reaction / physical reaction	Verbal	hand chime	drum	Piano	guitar	toy hoop
Freely control head direction	6	2	6	3	2	2
Frown	None	1	3	None	2	None
Smile	5	2	4	3	1	2
Eye contacts	6	2	5	3	1	2
Joint attention	3	2	5	2	None	2
Positively body movement	6	2	3	2	1	2
Language expression	4	2	2	1	None	1
Musical imitation	6	1	6	2	1	1
Communication via musical behaviour	6	1	5	1	1	1

Table 5.2 Overall review of Yujing's sessions in cycle 2

In cycle 2 there were eight sessions planned, however Yujing's sickness meant that there were only six sessions of recording collected for my dataset. Yujing missed the second session on 3rd March and the seventh session on 7th April.

DCTM in cycle 2 was mainly delivered by early years teacher Tongtong with Xiaoqiu as an assistant. Xiaoqiu was helping her to arrange classroom and physically assist Yujing during the session based on Tongtong's requirement or Yujing's wishes. In addition, it was necessary to introduce Tongtong who was the main teacher and delivered music sessions in cycle 2. She was a young teacher who trained in special needs at college level and had been working in the community centre for two years. The director of the community centre, Mrs

Lining suggested her to act as the main teacher in my project, because her teaching attitude was very rigorous and she was self-motivated to learn new things. Mrs Lining also suggested that Tontong's musical skills were a little higher than others in the centre. She was very keen on this project when I had a meeting with some of the staff in the community centre. I had a day to observe four teachers' classes in the centre, which gave me the sense of their teaching style. Mingming was one of the four teachers, who had newly joined the community centre. She went on to observe sessions as well as take care of the video camera in cycle 2. My own observations gave me the impression that their teaching was rather directive for DCTM. However, it was the reality of special needs teaching condition in the community centre. Additionally, in this centre, teachers exchanged jobs frequently from one centre to the other. Therefore, I took Mrs Lining's advice that Tongtong and Xiaoqiu were the best candidates to work with me in this project.

Below are the tables and graphs to show how Yujing's session format and activities were designed.

An individual DCTM session format
Music session elements

| Turn Taking | Attention sharing | Imitation |
| body movement and toy hoops playing with intervention 3 & 4 | body movement conveys non-verbal communication during interventions 1, 4 & 5 | drumming, body movement and postures with intervention 3 & 5 |
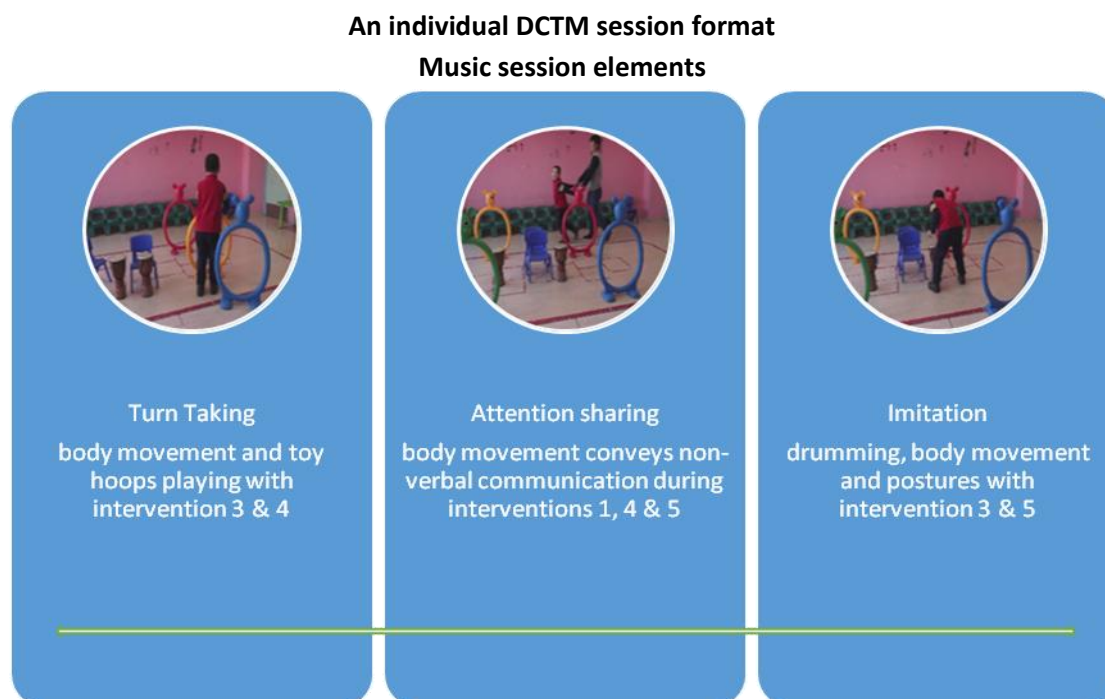
Table 5.3 Example of Yujing's individual session

The details of Yujing's session and overall plan are presented here for the purpose of this data analysis example.

Session 1-(2 missed)-3

Continuing Yujing's responsiveness and communicativeness to music

1) Tongtong implemented the intervention I (greeting music) in order to recap the previous musical experiences.

2) Tongtong adapted to the subtle changes then emphasised the changes in order to find the connection between Yujing and herself.

Session 4-5 Mutual relationship in progress

1) Tongtong implemented more interventions during the individual music session progress.

2) Tongtong tried creatively encouraging Yujing's self-expression and reciprocal interaction.

3) In Tongtong's session, Yujing's social connection and eye contact happened occasionally during the sessions.

Session 6- (7 missed)-8 Discovering the continuing educational needs

1) Yujing's self-expression and motivation were up and down, more attention was needed to find the reason

2) Yujing needed more high level materials to encourage his interests

3) Combinations of the teaching methods for Yujing's further education were needed.

Yujing's response to music showed much fluctuation during cycle 2 with Tongtong. Sometimes Yujing was livelier and creatively engaged, but other times he was emotionally up and down.

5.1.1 Data analysis of Yujin's session in Cycle 2

Natural environment

Yujing had music sessions in cycle 1 with me and he adjusted to joining the music session without accompaniment. However, he still felt anxious if there was something breaking his

routine. After the Chinese Spring Festival holiday, Yujing had his first session with Tongtong. The temperature was gradually rising and morning time was more pleasant. Therefore, it was much easier for Yujing and his mother to travel in the morning. Nonetheless, Tongtong was not interested in playing instruments and singing. He only showed some responsiveness with Xiaoqiu's instruction.

Yujing's first video recording session after cycle 1, took place on 27th Feb 2015 and was transcribed by me. The session started at 9 o'clock as before. The early years teacher Tongtong arrived at 8 o'clock and Xiaoqiu was busy setting up the instruments, camera and checking the timetable as usual. Tongtong asked me to check her practice plan again which we had briefly discussed it the day before. I could feel that she was a bit nervous even though she taught Yujing every day in the centre, probably because I was observing her teaching with a video camera recording. For this session, Tongtong and Xiaoqiu set up the room exactly as I did in cycle 1, such as with a drum circle in the centre of the room with four drums and four chairs. In addition, there were some percussion instruments and reed horns in the basket on the table and full set of hand-chimes, too. When 9 o'clock came, children's voices happily filled the corridor and parents greeted each other. The music recording played on the amplifier a traditional Chinese New Year's song.

5.1.2 Video analysis on a selected sample of data (Yujing session 1)

I selected the typical examples from all six of Yujing's sessions for analysis showing a lack of joint attention, turn-taking and imitation in his social communication. These represented the child's interaction problems, emotional variability, the teacher's intention and positive responsiveness. The session format was generally the same as that explained above.

At 9 o'clock on the first morning, Yujing went into the classroom by himself. Tongtong and Xiaoqiu were just ready to start. I was sitting back with the camera. Yujing sat on a little chair and was playing the edge of the drum with indolence facial expression. Tongtong played the

greeting song straight way and sang his name. Xiaoqiu sat very close to Yujing and sang as well. However, Yujing seemed to sing the song without thinking and automatically responded when Tongtong called his name. Yet Yujing did not sit for more than about 3minutes before he went out for toilet. His mother was outside of the classroom and she said that Yujing probably did not want to stay in the classroom.

Yujing returned to the classroom with a lazy pace. Tongtong recapped the greeting song and sang again. Xiaoqiu tried to encourage Yujing to sing, but he was looking around the room without any attention.

Image5-1 Greeting songs & went out for toilet

Yujing sat there with Xiaoqiu and sang the greeting music. However, he did not seem to be seeing anything, just stiffly singing the words, playing the drum. Tongtong did not seem to notice Yujing's dull responsiveness and continued with her music on the piano. This activity lasted nearly four minutes. Tongtong and Xiaoqiu had a quick discussion about Yujing's reactions. I was a bit torn about whether to give her some suggestions or just wait to see if she would be able to make some changes. In the end I decided not intervene because it was her session and I should give her chance to learn and to make change if she could. After the session, I had a long discussion with them.

Images 5-2 Leaning on the drum

Yujing returned from outside and leant on the drum with his elbow. He looked bored and played with the edge of the drum again, then down to the floor on his knees. I was hoping that Tongtong may pick up on this to improvise some game or rhythm to catch Yujing's attention. But, Tongtong only said 'Yujing behaves yourself in the class and sits properly'. At this moment, I felt that this was not an effective way to teach a child with special needs. A few minutes later, Yujing played the drum with Tongtong's un-harmonic piano chords playing. Finally, Tongtong took Xiaoqiu's suggestion to change the activity to body movement.

Images 5-3 Toy hoop

In the second half of the session, Tongtong asked Yujing to arrange the toy hoops with her instructions. She returned to her position on the piano and gave Yujing verbal instruction to run through the different coloured hoops, and then play on the drum with different rhythm pattern. Yujing followed Tongtong's instructions and completed the tasks precisely. Yujing's body movements seemed relax and he responded positively to this activity. He seemed to concentrate a little, but he did not look at Tongtong at all. Therefore, I assumed that while

Chapter 5: Cycle 2

Yujing was happy to move around rather than sit on the chair, he did not really respond to Tongtong's rhythm, just followed her verbal instruction. This first session after the holiday did not last more than twenty minutes, shorter by about ten minutes than his sessions in cycle 1.

Yujing was sick for the following session on 3rd March.

Session 3

Tongtong, Xiaoqiu and I had a long talk regarding the Yujing's first session including Yujing's responsiveness, Tongtong's playing and the new material. Tongtong said she was a little anxious when I observed her session in the classroom. Also, she tried to play well, but there were mostly wrong chords when she played within that session. In addition, Tongtong did not pay attention to Yujing's reaction because of her lack of playing skills and unfamiliarity with the new greeting music.

For the third session, I suggested that Tongtong use simple activities and familiar music, such as, Twinkle Twinkle Little Star and greeting music she used to play. For instrumental playing, I suggested she may select some other instruments instead of using piano if she preferred. Tongtong designed the session using a set of hand-chime as the main instruments as Xiaoqiu suggested that Yujing loved hand-chimes in cycle 1 practice and he has played well with me. The session started at 9 o'clock in the morning and Yujing came in by himself. In this session, I stayed outside with his mother and had a little talk. The video showed that Yujing sat with Xiaoqiu, and Tongtong still played the piano in exactly the same position as the last session. The session's atmosphere was a little better than the first session because Yujing was in a good mood at the beginning of the session. He did not go out for the toilet and played with Tongtong and Xiaoqiu on the hand-chimes. During the session, Yujing's concentration was uneven and he showed dull eye contact most of the time.

Image 5-4 Greeting music

Yujing sat with Xiaoqiu during the greeting song which I used in cycle 1. Tongtong played with some un-harmonised chords and sang the lyric. Yujing's sitting position indicated low-energy and his eyes looked down to the floor. Xiaoqiu noticed his reactions and used his elbow to wake him up. From the image I saw that Yujing's mouth posture was without any care. Obviously, Tongtong's music did not connect with Yujing and they only played with routines and without attention. After a few minutes, they moved on to the instrumental ensemble playing.

Image 5-5 Hand-chimes playing

Yujing, Xiaoqiu and Tongtong made a half circle with the hand-chimes. Tongtong used the music of Twinkle Twinkle Little Star and Yujing played the hand-chimes as instructed by Tontong. There were six hand-chime bars used and the music was sung by Xiaoqiu and Tongtong. However, Yujing was playing the hand-chime bars with both hands freely without listening to Tontong's talking. Tongtong's sitting position was higher than Yujing, her eyes looked down to Yujing and the hand-chime bars to point out her instructions which all affected Yujing's mood. They played three or four times on Twinkle Twinkle Little Star. During the playing, Tongtong had planned to use turn-taking and imitation for him to

practice his ability of communication through music and attention sharing. But, Yujing's focus was not really there, so sometimes they had to stop to adjust it. This activity lasted for about ten minutes. From Tongtong's body language I could read that she was a little irritable. It was a type of resistance communication. After the activity, it was almost time to end the session; Tontong asked Yujing to put all the hand-chime bars back in the box. There was a moment (explained at the following paragraph), which I felt was interesting, but Tontong did not realise it.

Image 5-6 Softly singing

Yujing was humming something very softly while waving the hand-chime bars. He was very patiently trying to arrange the bars back in the box with the right order. I regretted that Tongtong and Xiaoqiu missed a chance to improvise on this given moment. Very often, such precious moments would appear at the end of the session. Yujing was enjoying what he was doing; his body posture was relaxed and his facial expression was happy.

Session 4-5

For the next session I had given Tongtong some suggestions about her musical skills, musical materials and attitude in her teaching. More importantly, there were some interactive techniques that I suggested Tongtong should practice during the class, such as, carefully observing and using subtle imitation. Additionally, there were some musical chords I had practiced with Tongtong to use for further sessions. I advised Tongtong that she may be able to try other types of instrumental playing, such as, using percussion instruments instead of piano improvising. Furthermore, she may practice just one piano piece. It also, I advised her

to be patient and to lower down her body when they play together, creating a kind of invitation for Yujing to join in her music or activity, rather than giving an order from the above.

For session 4 and 5 we had planned to focus on the mutual relationship development via instrumental playing and singing if possible. During the fourth session, Tongtong used some good body language to invite Yujing to play with her, but she was a little blunt. Furthermore, she tried creatively to encourage Yujing to join in lively body movement, which was a good moment. Eye contact happened occasionally in this session. Tongtong did remember my suggestion that she needs more open body postures to invite Yujing to play in order to develop the mutual relationship. In this session, the room had been changed to the sixth floor, which was mainly designed for people with vision impairment. The room has built with Braille tiles in horizontal and perpendicular patterns, therefore, it was a little dangerous for children to walk or run around.

Image 5-7 'Dao' (Yes)

Yujing seemed lively when he came into the room. He was relaxed enough to swing his legs on his chair with a soft smile. Tongtong was playing the greeting music and sang Yujing's name. Yujing put up his hand and said 'Dao' (means yes), which is exactly the same as Tongtong's normal teaching class. After the greeting music, Tongtong started If You're happy You know it song and asked Yujing to play with the drum.

Image 5-8 Happy to play

Yujing was looking toward Tongtong on the piano and Xiaoqiu accompanied him to sit on the chair. Yujing had no problems to fit the music gaps with his drumming. Thus, Tongtong only played twice with Yujing's drumming, and then asked him to stand up with stamping feet. Yujing seemed happy to stand up, but willingly to run and turn his head toward the windows. He jumped a few times where he was. Unfortunately, he was interrupted by Tongtong's verbal instruction. She asked him to stamp his feet only. In my view, it was a good point to change the activity from sitting position. During this activity, Yujing went a couple of times to see the trains from the windows; Yujing's concentrations had gone. It was a time to make changes.

Image 5-9 A little group

After about 15minutes of the session, Tongtong moved to play the hand-chime bars with Yujing without piano playing, which made a significant change to the communication. Yujing made eye contact with Tongtong when she lowered herself to talk with Yujing. Even though her posture was still stiff I could clearly see the change. Yujing was looking at her face and playing the hand-chime bars with her instructions. The three images show how Tongtong's

body posture change affected Yujing's reactions observably. At this moment, their mutual relationship was developing as well as the social interaction via taking turns on hand-chimes playing and eye contact during the musical instrument playing. In addition, it seemed that Tongtong practiced music more this week according to her performance.

Session 5

To continue from the fourth session progression, I was encouraging Tongtong to carefully use her body language to achieve Yujing's more full attention. In addition, Tongtong would do better to keep the same musical materials, but add more activities to enrich the content of the session.

The session started at the same place on the sixth floor. Yujing was unbothered by the room change, he still came into the place by himself and smiled as the beginning. However, during this session, Tongtong required that Yujing put up his hand if he wanted to make any changes. This was not a suitable design and broke the session balance again. This could have been good communication but Tongtong acted this as the controller to ask Yujing to obey, which made Yujing stiffer and he could not express himself properly.

Image 5-10 Greeting music

Yujing happily sat and sang the greeting song with Tongtong. His hands position was crossed on his lap. Tongtong asked Yujing to put his hands on the back of his body; also she said to

Yujing that he needs to put his hands up if he needs things other than the music. After singing the greeting song twice, Yujing was a little irritated and put hand up to run to the backdoor where the boy could clearly seeing all the trains. Tongtong asked Xiaoqiu to stop him and drag him back to his chair. It was a very unpleasant moment.
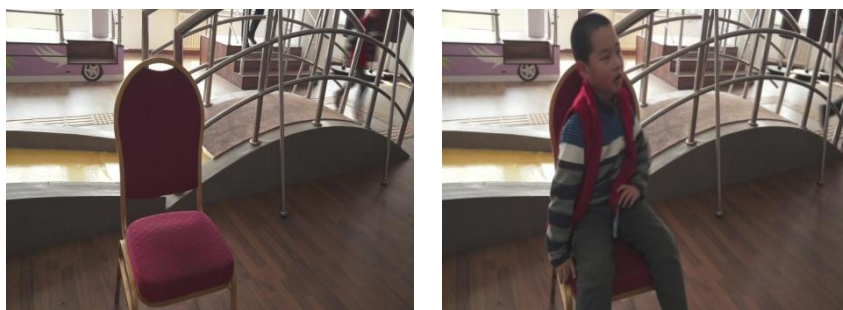
Image 5-11 Refusing to sit

Yujing refused Xiaoqiu's physical touch when he stood at the back of the room door. He quickly ran back to his chair and sang the music. There was a certain impatient sound with his voice. Tongtong did not change her position to come to Yujing to comfort him. She carried on with her piano playing. This session only lasted about fifteen minutes and Yujing's mother picked him up for interview to register for next year's educational training in pre-school. This session did not run smoothly caused by Tontong's wrong interpretation of DCTM. She paid more attention to rules than to Yujing's freedom to express himself. She did not carry on with the last session's development by continuing to use good body language as well as playing less on the piano.

Session 6

Yujing's next session was up and down. There were some positive moments when Yujing did respond to Tongtong's playing and singing, but most of the time he was playing with his interests and impatient to complete the music session tasks. There were reasons, which Tongtong, Xiaoqiu and I discussed and agreed to make some changes. However, it was difficult for Tongtong to change her teaching style in 3 or 4 weeks, even though she practiced very hard in both music learning and teaching design. I suggested that Tongtong reviews the fourth session again and try to learn some positive moments from that session.

For example, her body posture, language use and the music she played. I thought it may be good for her to find out by herself rather than I push her to learn or to practice. I hoped she could motivate by herself and try to be confident.

I had a talk with the director of the community centre Mrs Lining regarding the classroom arrangement. Mrs Lining said that the building was being redecorated in some parts, so the classrooms were very tightly in use, therefore, one group of children had to stay in the sixth floor, but the younger group could remain in the fifth floor because of health and safety reasons.

During this session, Yujing's awareness of the music was erratic. He was really happy to run around in the room, but out of control. He was not listening to the music playing or Tongtong's instructions. Tongtong did not catch those moments to improvise with him, instead of stopping him.

Image 5-12 Jumping, running and stopping

They did not using any greeting music at the beginning after Yujing came in. I thought that was a good start because of Yujing jumping and running into the room, and Tongtong supported his emotions with piano playing. It could lead to a lively activity or something to suit Yujing's happy mood. However, Tongtong stopped him and asked Yujing to stand still. From the image, we could clearly see that Yujing's head turned away to look at the windows. Yujing looked back to Tongtong when she called his name. I assumed that Yujing's enthusiasm for playing, in a moment was gone. In Yujing's session, Tontong needs to adopt complex teaching ideas to satisfy Yujing's educational needs.
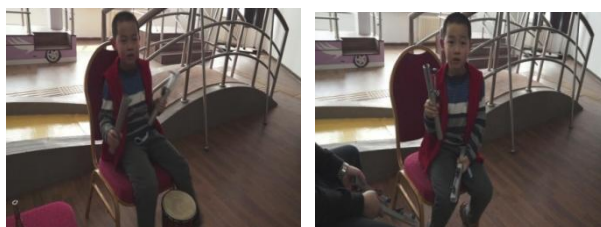
Image 5-13 Sitting position

Yujing was asked to sit in a chair by Tongtong in order to play the hand-chime and drum at the same time. It was a complicated game for Yujing, but he may be able to complete the task if she could give him good guidance. Tongtong tried very hard to explain the activity which involved playing the drum with basic beats and playing the musical gaps with hand-chimes. It was a problematic moment, which was typical of Tongtong's teaching when she forgot what we discussed and practiced at this moment.

Yujing was called off again on 7th April, his 7th session.

Session 8

This was the last session for Yujing; most of the sessions had run with problems which were beyond my expectations. I anticipated that early years teachers in the community centre would need more training to prepare them to be able to do DCTM properly, such as, practice in musical skills, enriching teaching ideas as well as teaching style minor adjustments. However, I was learning that they would have to change much more in their actual teaching style.

I did evaluate Yujing's sessions with Tongtong and Xiaoqiu; every time they seemed to lose confidence a bit, so I was very careful and patient to discuss the session issues with them. I

encouraged them to be confident to play with Yujing and to adopt some materials which they were confident to use. They said that they were happy to use percussion instruments to improvise with Yujing, but not piano. In addition, Tongtong said that she could use piano but play with the music score without improvising.

The last session was intended to incorporate all the interventions which had been adopted in the cycle 2 for Yujing. It can test out how much impact the interventions had on his ability of communicate and the problems found in this round of learning and teaching.

Instrumental playing

Tongtong and Xiaoqiu planned that they were using the hand-chime to start with. Yujing seemed all right to play the hand-chime alongside Tongtong's piano rhythm. He was looking at Tongtong, but a little stiff. Yujing's responsiveness in this activity playing was correct, but he showed via his inflexible facial expression and dull staring no enjoyment or willingness to play the instrument. Xiaoqiu did not play, just waited and watched Yujing's playing.

Image 5-14 Singing with musical gap filling

After the instrumental playing, Tongtong changed the activity and walked down to Yujing's position. She sang the children's rhymes and saved the space for Yujing to fill in. It seemed to work well without piano. Although Tongtong stood up and looked down to Yujing, the boy still happily sang and filled in the musical gap. This was a harmonic moment for this little group. It may work better if Tongtong could lower down her body to look at Yujing's eyes at

the same height. In this verbal singing, Yujing enjoyed being part of this activity although his pronunciation was not good enough to hear clearly. This activity did not last long, and then they moved to instrumental ensemble.

Image 5-15 Instrumental ensemble

Yujing was quite happy when they sang together. However, he seemed a little down with his emotions when Tongtong asked Yujing to play the instruments again. Yujing's head leant to one side and both his hands were underneath his lap, which was a very negative look. Tongtong played piano again, Xiaoqiu held the reed horns and drum ready for Yujing. The boy seemed resistant to play and he did not pick up the instruments.

Yujing's sessions ended in unhappy mood in cycle 2. There were many things that we needed to sort out and we faced more challenges.

5.2 Other children in group 1 in Cycle 2

5.2.1 Shao in Cycle 2

Shao was one of the most able communicators in the group of children in that he could verbally communicate with people if he was interested in the topic. He was eight years old when he registered with this project. Normally, he goes to mainstream school in the morning class and comes to the community centre in the afternoon for verbal pronunciation training in particular. During my research he came to the centre every Tuesday morning around 11 o'clock for attending the music session. The major concerns for teaching Shao were focused on sharing attention and pronunciation practice. Thus, I suggested Tongtong put emphasis on those areas, in addition, the level of the musical materials needed to be carefully selected.

Shao was a boy with many interesting ideas as well as questions. Therefore, I advised Tongtong that she needed to avoid using limited musical improvisation skills on piano and choose some other percussion instruments. The reason was that Shao recognised the music pattern quickly as well as having a good imitation ability. I found that he liked changing musical patterns, and combination musical patterns stimulated more his interests in learning when I played with him, in cycle 1. It was a real challenge for Tongtong and she still used piano and drums in this session

Image 5-16 Greeting music playing and singing

Tongtong was playing the piano with greeting music and asked Shao to play the drum at the beginning. Then, she asked Shao to play the drum and sang as well. The boy played rhythm precisely with a poker face at the beginning of the session. After Tongtong played the greeting music twice, she changed to play Twinkle Twinkle Little Star, with two changing patterns, but Shao seemed a little irritated with her playing and singing. I immediately realised that Shao was feeling bored with what Tongtong did, because this music was below his level. When I reviewed her session plans I reminded Tongtong that she needs to use various rhythm patterns to play the simple music; otherwise, it would be easy to lose his attention. I could feel that Tongtong tried really hard to play in different patterns, but it did not match Shao's playing pattern. After this music activity, they moved to the piano together.

Image 5-17 Piano playing

Shao liked piano and he was happily to sit on the stool. However, Tongtong tried to hold his hand to play the tune of Twinkle Twinkle Little Star again, which made him more resisting to Tongtong's physical assistance. The video recording showed that Shao's facial expression was uncomfortable and his body was turning away from Tongtong's. At this moment, if I were Tongtong, I would leave Shao to play on his own rather than to hold his hand to play.

This was the first session and I had the feeling that they may experience difficulties to play together. Tongtong, Xiaoqiu and I had reviewed the session immediately afterwards as well the other sessions in cycle 1 with similar scenes. I tried to help Tongtong to understand this moment in order to avoid the same problem happening again. With the rest of the sessions in cycle 2, Shao did not came every week for music session and his mother said that he did not want to come to the session often. It also, his mother did not force him and the most of time they came to the centre if Shao did not refuse it very firmly. What I felt was that Shao led the session and played what he wanted. The music did affect Shao's emotions when we played in cycle 1. His mother said that Shao always sang some songs at home happily which he learned from the music sessions and he was motivated to come. But in cycle 2, his mother had to persuade Shao to go to the music session and his singing reduced at home.

5.2.2 Xuanxuan in Cycle 2

The 2nd April is a big day for children with autism in China now, because most of the organisations for children with special needs, particularly autism, would have a meeting or annual report on teaching achievement on show. This community centre was also preparing some programmes to present. On week 5 of cycle 2, which was very close to the time of 2nd

April, Tongtong had to call off three sessions as she was the representative of the centre.
Therefore, Xuanxuan's session was taken over by Xiaoqiu on his own. To recap on
Xuanxuan's sessions in cycle 1, he had some good moments with me and his understanding
of verbal instructions improved. Xuanxuan's previous four sessions with Tongtong in cycle 2
showed, sometime he relaxed and played with Tongtong and Xiaoqiu, but most of the time
he talked to himself. There were struggling to create the mutual communication moments
either verbal or nonverbal.

Xuanxuan's fifth session was not bad. Xiaoqiu played instruments and they sang together.
Xuanxuan enjoyed this session some moments when he relaxed. At the beginning of the
session, Xiaoqiu used drum playing to greet Xuanxuan and they played together.

Image 5-18 Playing the drums

Xiaoqiu started with drum playing to greet Xuanxuan. The boy seemed to really concertate
to imitate what Xiaoqiu did. Meanwhile, Xiaoqiu sang his name as well as asked Xuanxuan to
sing as well. After singing the greeting music together twice, Xuanxuan was smiling and using
one hand to play the drum and also using his vague language to imitate Xiaoqiu's tone
happily. His eyes looked very excited to watch Xiaoqiu, but unfortunately, Xiaoqiu was
concentrating on playing his drum. Xuanxuan shook his head with excitement, but Xiaoqiu
stopped playing and asked him to put his both hands at the back of the body, then Xiaoqiu
played the drum with his right hand and pointed out the other drum with his left hand and
said 'Xuanxuan play it'. Xuanxuan was playing the drum with a little confusion after Xiaoqiu's
verbal instruction and pointing hand. They were communicating via instrumental playing,
but in a passive way. Xuanxuan completed this activity but not from his heart.

I felt that it would be better if Xiaoqiu could patiently guide and wait for Xuanxuan's reaction during the playing, also encouraging Xuanxuan to express himself and complete the activity on his own. I designed DCTM to use music to create a relaxed and happy environment for children to learn, not to focus on children's discipline. After this playing, they changed to reed horn playing.

Image 5-19 Blowing reed horn

In this part of the session, Xiaoqiu intended to do some practice with Xuanxuan's breathing first, which was good. Tongtong and Xiaoqiu had agreed that they would focus their teaching on Xuanxuan's pronunciation practice first in order to improve a simple verbal communication if possible.

Xiaoqiu used very good body language to guide Xuanxuan to practice his breathing on the reed horn. Xiaoqiu asked Xuanxuan to try inhale and exhale without sounds. It was difficult for Xuanxuan to do those actions. They practiced repeatedly, getting it right two or three times. Then Xiaoqiu demonstrated first to blow the reed horn, right after holding the reed horn for Xuanxuan to blow. They did not get this right easily. However, Xiaoqiu seemed more patient than the previously and finally, they got the blowing sound which means Xuanxuan knew how to control the breath at that moment. I thought if Xiaoqiu could seize the moment and improvise when they played the drum while Xuanxuan was copying him earlier, this session could be gain more attention with Xuanxuan.

5.2.3 Xinyu in cycle 2 group 2

Xinyu's fifth session in cycle 2 was rearranged with Xiaoqiu, Mingming and Jiajia, because Tongtong was needed elsewhere. Xinyu's previous four sessions were erratic depending on

her emotions. The session might go well if she was happy and settled. Otherwise, the session would be a challenge for Xiaoqiu to teach.

Luckily, I had a backup plan with four people ready to deliver the sessions if Tongtong or Xiaoqiu were away. These were two of the early years teachers from the community centre and two of my students from conservatory of music, Shenyang, who were familiar with the children on their daily programme. Xinyu's fifth session was improvised by Xiaoqiu, Mingming (early years teacher) and (one of my students) Jiajia. I agreed that they could have a main aim, and then improvise with it. Even though, I was a little worried about 'could they work together as a little group and would they be able to use the improvisation techniques well to deliver the session?'. Before the session started, Xiaoqiu told me that they would mainly focus on calming her emotions, and then to help her practice making sounds. The amplifier sounded on time with music at 10 o'clock in the morning, Xinyu was crying in the corridor and came into the room straight away, and then the room door was closed by Mingming. I was surprised that she was not nervous or superise at all by seeing Xinyu's low state.

Image 5-20 Crying and comforting

Xinyu was crying and seemed very sad. The team were trying really hard to comfort her with their singing. Mingming was holding Xinyu' hands and Jiajia let Xinyu to lie on her lap. Xinyu was hugging Jiajia tightly, but still crying. Jiajia was holding Xinyu's back and patting her with the greeting music's rhythm with the soft singing.

Image 5-21 Clapping hands

After the period of comforting, Xinyu gradually stopped crying. Mingming was clapping her hands and sang Xinyu's name rhythmically saying 'Xinyu zhen bang' (means Xinyu great) repeatedly. Jiajia was doing the same thing to support this activity. They were very patient and waited until Xinyu's eyes focused on their clapping. It seemed that Xinyu was affected by the clappings. She said 'bangbang' with a very tiny sound as well as a tiny smile. Finally, they were clapping together. I was really excited when I saw this moment. Mingming is newly graduated from college without teaching experience, but she has potential to deliver the DCTM in my point of view.

Image 5-22 Recognising colours with imitation

After clapping hands together, Mingming took Xinyu's hands said 'beautiful shoes with pink and blue' when Xinyu bend her body to look down to the floor. Xinyu was holding Mingming's fingers to point to her shoe on pink and blue. At the same time, Mingming was saying pink, pink shoe….. blue, blue shoe. It was a great idea to sustain Xinyu's attention I thought. I did not know what Mingming's thinking was at that moment. Mingming told me

that she did not want to stop her doing things, just to say something to carry on her interest.

It was definitely a good improvisional technique used in the teaching.

Image 5-23 Imitations and turn-taking

Xiaoqiu took over after Xinyu calmed down. Mingming went back to the position of controlling the camera and Jiajia carried on with her session observation notes. Xinyu was picking up a reed horn and gently rowing on the surface of the drum. She seemed to listen to the sounds she made, whereas Xiaoqiu did not notice this and carried on with his drum playing. He missed a chance to interact with Xinyu. Obviously, Xinyu's attention was still on her own actions, not Xiaoqiu's drumming. There was a moment exactly like this in cycle 1 practice and reviewed by me, Xiaoqiu and Tongtong together. The scene was that I improvised with my fingertips to copy Xinyu's playing on the drum. Xinyu stopped her actions with laughing and waving arms when I joined in, and then she carried on with her actions again when I stopped. This pattern of activity repeated many times, Xinyu was excited to pat her lap and initiatively to hold my hands. The playfulness, which is based on Intensive Interaction techniques, was the main character for that scene in contrast with other approaches.

Xiaoqiu, Tongtong and I did not only analyse and review this part of video recording. We also discussed how to deal with this kind of actions if happened in cycle 2 practice. Unfortunately, Xiaoqiu did not seem remember it. I realise that Xiaoqiu and Tongtong do need more training in observation skills not just musical training.

5.3 Key child in group 2: Jinyan

5.3.1 Cycle 2 Jinyan's session analysis

First I provide a brief summary of Jinyan's overall background information before I began the main data analysis in cycle 2 on the basis of cycle 1 practice. Jinyan was five-and-a-half years old at this time and he had progressed in his nonverbal communication ability throughout the first round practice as well as developed self-control with his behaviour during the music sessions. Jinyan was more active and responsive compared with how he was at the beginning of this project. He liked music and enjoyed activities very much in cycle 1. Furthermore, he could imitate simple rhythmic pattern in the musical activities; occasionally his vocal responsiveness appeared as well as awareness of musical pattern changes in an instrumental ensemble.

Previously practice shows Jinyan's progression in musical communication, level of musical verbal and nonverbal responsiveness to the different style of music. His responsiveness reduced as the cycle 2 practice went on.

Communication(session 1-8)

Name of client:	Jinyan (group 2) in cycle 2					
instruments / frequency of reaction / physical reaction	piano	hand chime	drum	shakers	toy hoop	reed horn
Smile	2	2	3	2	2	1
Eye contacts	4	1	4	3	2	1
Joint attention	3	1	3	2	1	None
Body movement	3	1	5	1	3	1
Language expression	2	2	3	3	None	None
Musical imitation	2	1	3	3	2	1
Communication via musical behaviour	2	1	3	2	1	1

Table 5.4 Overview of Jinyan's sessions in cycle 2

Chapter 5: Cycle 2

For Jinyan in cycle 2 practice was planned so that Tongtong and Xiaoqiu would use a greeting song (composed by me), Nordoff and Robbins music with translated Chinese lyrics and fill in with some vowel sounds which fitted the needs of Jinyan's daily learning. There were four music activities improvised in each individual session, which facilitated verbal and non-verbal communication. However, according to Jinyan's educational needs I suggested that there were some appropriate adjustments which were agreed by Tontong and Xiaoqiu. With group 2 younger aged children, there was free playing time with unstructured teaching in each session, aimed to develop the relationship between the child and teachers.

5.3.2 Data analysis of Jinyan's session in cycle 2

Session 1-3: Continuing Jinyan's responsiveness to music

1) Tongtong implemented the intervention I (greeting music) in order to recap the previous musical experiences

2) Tongtong adapted the instrumental ensemble in order to find the connection between Jinyan and herself.

Session 4-6: Developing the mutual relationship

1) Tongtong implemented two more interventions during Jinyan's individual music session.

2) Tongtong and Xiaoqiu tried very hard to encourage Jinyan's reciprocal interaction.

Session 7-8: Trying to find out about the continuing educational needs

1) Jinyan's responsiveness fluctuated; therefore they need to work out why.

2) Jinyan's expressiveness more and more inflexible in the music sessions. Very occasionally he naturally expressed himself with body movement.

Jinyan's reactions to music fluctuated in cycle 2 with Tongtong and Xiaoqiu and musical engagement happened only some of the time.

Jinyan's progression in cycle 1 was positive and he enjoyed music and musical playing with me, but there were still many things that needed to be worked on in cycle 2. After the Chinese Spring Festival holiday, Tongtong and Xiaoqiu had their first session with Jinyan and I observed in the classroom. However, Jinyan's enthusiasm was mostly overshadowed by

Tongtong's class rules. Jinyan is a lively boy and capable of learning during the music sessions and enjoying communication which can be seen in cycle 1.

Generally Xiaoqiu was busy setting up the instruments, camera and checking the timetable as always. Tongtong's session plan was checked by me the day before her teaching with a little discussion. In Jinyan's first session, Tongtong was calmer with this session and she seemed settled beside the piano. For Jinyan's first session, Tongtong and Xiaoqiu were setting up the room in a similar way to cycle 1. There were some percussion instruments in the basket on the table and full set of hand-chimes too.

Jinyan happily came into the classroom by himself. Tongtong and Xiaoqiu were settled and ready to start. I was in a corner of the room with Mingming to take care of the video camera. Jinyan responded to Tongtong on the drum with excitement at the beginning of the session as well as his active body language.

Image 5-24 Happy to greet Xiaoqiu and Tongtong & Counting activity

Jinyan was happy to greet Xiaoqiu with the chanting greeting song. His pronunciation was comparably clearer with his clapping hands. Tongtong played piano in single greeting music tune and sang with Jinyan and Xiaoqiu, which was a good moment of communication via music. Jinyan seemed relaxed with his arms waving beside his body and his facial expression showed concentration. I was excited about this reciprocal interaction between Tongtong and Jinyan. However, Tongtong did not repeat this activity in different patterns to deepen their relationship as I would have done, instead changing the activity to the counting game after twice singing the greeting song. Jinyan imitated Tongtong's playing on the drum with his finger postures. His facial expression was showing his happiness. Yet, Jinyan followed

Tongtong's piano chords once, then refused to play the drum and full of confusion looked at Tongtong and the piano. Tongtong was still playing her musical discordant chords on the piano and asked Jinyan to count with her. Jinyan was head down without singing and talking; he only played the drum with himself. At this situation, Xiaoqiu suggested changing to activity with body movement.

Image 5-25 Tongtong asked him to play the toy hoop

Xiaoqiu and Jinyan worked together to arrange the toy hoops in a square shape and there were two drums in the middle. After those instruments had settled, Tongtong played the piano again to guide Jinyan's running and playing the drum. Tongtong also asked Jinyan to go though the toy hoop as well as playing the drums in order to engage his attention. There was a very clever idea that Xiaoqiu guide Jinyan to practice the body postures up and down to mobilise his enthusiasm. It seemed that it worked well at this moment. Jinyan was laughing and doing the job. Alongside Tongtong's instructions, Jinyan went through the toy hoop in different colours, and then beat the drum. Meanwhile, Tongtong tried very hard to give the instructions in various patterns, such as, go through the toy hoop with clapping hands, or stamping feet or drumming in 2 beats, etc. After a few times, Jinyan returned to his little seat with poker face and self speaking softly 'drum, drum, drum'. Xiaoqiu tidied up the room and put all the toy hoops back to the original position.

It was time to say goodbye to each other and Jinyan quietly left the room after saying goodbye. I felt Jinyan seemed a little disappointed with this session in some ways. It can be seen that he liked drumming, but Tongtong did not sustain the game with drumming or she may not have realised that Jinyan needed more time on playing drums. I could feel that Tongtong worked very hard to satisfiy Jinyan's needs, but she might misunderstood of

Jinyan's behaviours, it also she frequently changing materials in this musical session which affected on this session's running.

Session 2

After the first session observation, I asked Tongtong her preference about my staying. She said she likes to teach without my observation in the classroom. In addition, during the discussion informally with Tongtong and Xiaoqiu, I had given Tongtong similar suggestions in Jinyan's session which was try to use piano less and using some other instruments more. There were also other important things, which Tongtong needed to give more attention. For example, she needed to practice children's rhymes more on the piano and try to memorise them if she likes to play piano in the class. Moreover, for session 2 planning, it would be better to keep the same activities with positive body language similar to cycle 1 and keep a warm attitude in Tongtong's teaching. Xiaoqiu and Tongtong also needed to carefully observe Jinyan's reaction during music playing.

With this session, Tongtong seemed take my advice and used good body language communicate with the boy at the session beginning. Also, she sang the children's songs without piano playing. She, particularly, was holding Jinyan's hand and engaged in face-to-face playing the drum together. However, this did not last long enough, Tongtong seemed impatient and her voice tone was higher than normal. Jinyan started again to play the drum on his own. After this activity, Tongtong asked Xiaoqiu moved on with Jinyan playing the toy hoop for the second half the session.

Image 5-26 Tongtong and Jinyan played drum

Tongtong was holding Jinyan's left hand and playing the basic beat with her singing. Jinyan was concentrating, but a little anxious I could feel after I reviewed video session. Tongtong

was bending her legs and trying to play with Jinyan. She was playing the drum and beating in different rhythmic patterns and encouraging Jinyan to play. However, the boy did not play correctly and tended to put the drum lying on the floor. At this moment, Tongtong seemed to lose her concentration and cross her arms in front of her body. Within this session, there was only a positive change with Tongtong's body language at the beginning of the session compared with Jinyan's first session.

Session 3

Before the third session started, Tongtong, Xiaoqiu and I had a long talk regarding the session arrangement and teaching process. As we talked, Tongtong and Xiaoqiu said 'it is obvious we have difficulties to copy what you have done in cycle 1, but the more things we concerned that how long will take us to practice this DCTM intervention techniques usable, in addition, we also need to focus our own work and teaching tasks every day.' Therefore, I simplified once again that there were three things that Tongtong needed to carefully practice. Firstly, she needed to practice musical skills with very basic techniques, such as, arpeggios and chord progressions in C major. Secondly, Tongtong's traditional teaching style needed to adjust to satisfy the children's needs. For example, Tongtong may need to become less serious and more playful. In addition, she needed to adjust more closely to the children's way of speaking. Lastly, Tongtong probably needed to communicate in a simple way with plentiful practice.

In this session, Tongtong seemed more patient with Jinyan's responsiveness, but Jinyan was still not fully attracted by her music. Jinyan's facial expression was very dull and his body language showed his anxiety and resistance.

Image 5-27 Playing the drum

Tongtong was playing the piano again with the greeting music and Xiaoqiu played drum with Jinyan face to face. Jinyan was careful to play the drum with Xiaoqiu's assistance. Because the piano chords' progression was not coherent, Xiaoqiu used his hand to guide Jinyan's playing to match Tongtong's music. (However, this type of playing was not a problem for Jinyan on his own in cycle 1 with my teaching.) I also understood why Xiaoqiu held the drum to help Jinyan's playing. The reason was that Tongtong was not able to adjust her playing as well as improvise on Jinyan's unstable actions. Thus, Xiaoqiu was doing a good job to keep the activity going by holding the drum. After few times imitation practice Tongtong asked Xiaoqiu to play the reed horn with Jinyan.

Image 5-28 Blowing the horn

Jinyan played the reed horn as Tongtong requested. However, he was playing in the wrong rhythm and could not follow up Tongtong's playing on the piano. Jinyan seemed more nervous when he did not match the beats. Tongtong stopped playing on the piano, instead banging on the piano cover to count, yet Jinyan was still confused, his left hand wrapping his lap. The boy was really worried to play in the wrong beat and Tontong created a pressured task rather than an enjoyable interaction.

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This session ended a little earlier than the normal time because Jinyan went out the room without asking permission.

Session 4

At this stage of Jinyan's session in cycle 2, we planned to develop the mutual relationship via different interventions as well as encouraging the reciprocal interaction between Tongtong and Jinyan. Tongtong had been making changes and I hoped that she could remember the mistakes which she made, and not repeat them. As we discussed, Tongtong only focus on one or two activities for improvement. At the session began, Tongtong greeted Jinyan with very brief introduction via music, then moved the activity to the toy hoop.

Image 5-29 Playing the hoops

Tongtong planned this activity to encourage Jinyan to express himself with verbal responsiveness. Tongtong practiced with Jinyan a few times and asked Jinyan to say 'Go and Stop'. She also gave the instruction to go through the toy hoop. However, Jinyan liked to play the drum rather than go through the toy hoops forwards and backward. Tongtong did not realise and still tried to play the children's rhyme one by one without stopping, but sometimes the musical tunes were not so smoothly connected. From my perspective, Tongtong copied my teaching well in terms of instrument range and session format; however, she forgot the aims of the musical activities. I used music to support children to play (without correcting the child's mistakes) as well as sharing the enjoyments with Jinyan via music. It was not only about how to teach, also caring about how the child was learning and feeling.

We had agreed what Jinyan's needs were, yet, Tongtong seemed adopt different activities from cycle 1, and not really understood the musical contents and meaning of the

interventions. For example, Jinyan liked playing drum while he went through the toy hoops. But, Tongtong seemed to ignore Jinyan's reaction and carried on with asking him focus on the toy hoops. In Jinyan's case with this session, I realized that Tongtong tried really hard not only in playing music, but also tried to control the session tightly. She needed to develop her observation skills in the sessions indeed.

Session 5

Over the four sessions teaching, Tongtong and Xiaoqiu were agreed that only using one activity in a session via imitation and turn-taking would be better. With previous sessions, Tongtong was teaching under pressure and she told me that she felt she could not control the session. It did not matter how hard she tried. I had a 'talk as a friend' with her and I told her that the idea of controlling the session was not bad, but she needed to adapt her idea of this in a different ways. Controlling the session did not involve asking the child to obey every rule. Controlling in music session means Tongtong was being able to deliver the session smoothly and the child enjoying what she taught. I hoped Tongtong could understand what I explained. We, as a group, had re-planned the rest of the sessions. The main focus was that the interventions are simplified into one for each session and practicing every week on instruments with vocal singing. I advised Tongtong try to avoid unnecessary piano playing.

In session 5, particularly, Tongtong used imitation and turn-taking via drumming activity in order to gain more attention sharing with Jinyan. She also played piano to accompany Jinyan's playing, but the boy's enthusiasm has not lit up, even though Tongtong worked intensively. This session only lasted fifteen minutes and Jinyan's mother asked to leave earlier because Jinyan did not feel comfortable.

Session 6

During session four to six, the major focus was on developing the mutual relationship between Tongtong and Jinyan. However, Jinyan's responsiveness seemed less active than the cycle 1 practice. His eyes looked dull and the instruments playing were not very positive.

Jinyan looked to the piano when Tongtong played, but he was not excited. His concentration was not really focused and his body was not relaxed. It seemed that Jinyan was nervous.

Image 5-30 Playing and scratching the drum

Later on with this session, Jinyan was restless and he used fingers to scratch the surface of the drum very softly. Xiaoqiu did not do anything to support him or stop him either. But I realise that this was a moment which could have caught Jinyan's attention back if Tongtong could come to the drum and playing with him. Otherwise, Tongtong could have improvised by playing softly on the piano to imitate Jinyan's movement. However, there was nothing happening. It many events like this that Tongtong and Xiaoqiu missed. Thus, the session seemed more and more low energy with boring playing. This session was completed at a very low level both in teaching and learning. I had a thought that my advice may have caused the problems within this session, because I have asked Tongtong and Xiaoqiu to simplify the activities and contents. Tongtong and Xiaoqiu said that the session simplified to only one type of activity led them to become dejected. They did not seem able to create various patterns with only one activity. I concluded that training in a comprehensive way was needed, which could not be done in my project.

Session 7

With the final stage of Jinyan's sessions in cycle 2, I had somewhat negative thoughts about Tongtong's use of DCTM. However, I still wanted to try some other things to see whether they would work for her. I talked with Tongtong and Xiaoqiu hoping that they could design the last two sessions based on my research purposes.

For Jinyan's seventh session, Tongtong and Xiaoqiu used their teaching style with their classroom rules. It was not a bad session in terms of completeness, Tongtong taught the

session with her plan in three dimensions of greeting music, movements and saying goodbye. Jinyan was following their rules and completing the tasks one by one. There were many events with attention sharing, however, there was no enjoyment and happy laughing around the session at all.

Image 5-31 Greeting music

Jinyan went to the room along and sat in a chair quietly. Tongtong was playing the piano with the greeting music which composed by me. Jinyan was softly playing the drum with both hands and Xiaoqiu was on the camera at that moment. Suddenly, Jinyan stood up and waving his hand to Tongtong when Tongtong called his name. I felt that it was an interesting moment, which was exactly like Tongtong's other class, but not a musical session. Jinyan seemed a little worried and nervous. His arms waved very lightly, which did not show his enjoyment or initiative. Tongtong said that you can sit down now after the greeting song. This session was still focusing on imitation; therefore, Tongtong asked Xiaoqiu to come forward and led the boy sit properly on his chair.

Image 5-32 Playing the drums with obeying rules

Jinyan sat again and Xiaoqiu was sitting close to him. Tongtong played chord progression and asked Jinyan to imitate what she had played. Jinyan looked at Tongtong at the beginning of this activity, but lost interest very quickly, then scratched again on the drum surface. This kind of movement happened before in Jinyan's sixth session. Yet, Tongtong did not

improvise on these movements, instead asking Xiaoqiu to stop him. In addition, Tongtong asked Jinyan to count with his fingers in one hand, but the other hand needed to be put behind his body as happened in session 6, too. Reading Jinyan's body language, his arms and legs did not relax and there was no smile on his face.

Session 8

On the seventh session, Tongtong used her typical teaching style to deliver the musical session; it was not bad, but the music seemed meaningless, as it did not affect Jinyan's communication. It also did not enrich their relationship. Jinyan's non-verbal communication was stiff. At the end of the session, Tongtong did not play piano, but she was chanting the music with Jinyan blowing the air balloon and it worked well. For Jinyan's eight sessions, I found that it more important to master the musical materials than selecting the musical items for the early years teachers. I had learned that the teachers needed to develop observation skills and child-centred thinking. There is no reason to implement the new techniques or new materials if the teacher was unable to understand it or use it. It was also important seeing that the role of playfulness was the key in this session.

5.4 Other children in group 2

5.4.1 Siqi's session

Tongtong, Xiaoqiu and I had a meeting to discuss what we need to focus on in helping Siqi in cycle 2. We would continue working on her sound making as well as sharing her enjoyment in music. Tongtong and Xiaoqiu choose to consolidate Siqi's ability to control her behaviour in order to achieve attention sharing and nonverbal communication. In cycle 2, Tongtong was still the main DCTM teacher but there were some sessions which Tongtong missed. On Siqi's session 5, Xiaoqiu, Jiajia and Mingming took over the session and played well with Siqi. On that day, Siqi unevenly walked into the classroom by herself. Her facial expression looked calm and she sat on a chair quietly with biting hands.

Mingming and Jiajia sat around her and played drum to greet Siqi. Alongside the drum rhythm, Mingming and Jiajia sang 'Siqi zhenbang' (means Siqi great) repetitively.

Image 5-33 Listening and playing

Mingming and Jiajia repeated five to six times, but Siqi sat quietly with a soft smile. Siqi did not respond to them directly. Jiajia gave a thumb up and said 'Siqi zhenbang', and repeated again. Siqi imitated Jiajia's voice saying very softly of 'bang' with heavy breathing. It seemed they were communicating to each other very briefly during their chanting.

Image 5- 34 Clapping hands and drumming

Mingming and Jiajia continued singing and clapping hands in this activity. Siqi seemed happy to listen and to watch. Siqi was looking at Mingming very patiently when Mingming clapped her hands. Siqi started to put her hands together, and she did not bite. I felt she wanted to clap her hands, but Mingming and Jiajia did not stop to help her, just enjoyed the little group of playing.

Image 5-35 Improvisation and imitation

Jiajia improvised on the piano and Mingming played drum with Siqi and Xiaoqiu. It was a great moment that Mingming used imitation skills to copy Siqi's hands reaction while Jiajia played on the piano. The image shows that Siqi seemed interested in seeing Mingming's action, meanwhile, Jiajia played arpeggio randomly, in simple C major broken chords to support this moment until Siqi stood up to bring it to an end. I was encouraged by seeing this example of how simple musical improvisational skills can be adopted for early years teacher to use in their daily teaching if they have training. This was the idea of improvisation and simplicity is the key. Improvisation does not necessarily mean playing with high level of piano performance skills.

Image 5-36 Jumping with sounds of 'mum, mum'

Jiajia used single note playing on the piano instead of playing the pre-composed music or tunes. Siqi was happily jumping around the room and was occasionally assisted by Mingming. Siqi stopped at the side of piano and twisted her legs up and down. Siqi faced to Jiajia on the piano and happily made the sounds of 'mm, mm'. Jiajia stopped playing piano and opened her arms to hold Siqi. It was a warm moment and I was touched.

Image 5-37 Obeying rules

Siqi was leaning on Xiaoqiu's shoulder and wished to have a rest, but Xiaoqiu gave a little push to get her to stand up properly. It was a moment that led to Siqi biting her hands again. Xiaoqiu's a little refusing destroyed the harmony of the whole session.

My reflections:

> I could see the potential of the imitation and musical improvisation adaptation in special needs education in Mingming's teaching which showed that simple musical improvisational skills can be adopted in her future career and by some other teachers, too.

5.5 Summary

In cycle 2, children from groups one and two exhibited erratic responsiveness. They only occasionally responded well to music and teachers, responding to drums more than other instruments. This was seen when Jinyan played the drum while Tongtong faced him closely and leaned down. They then took turns to play on the drum. Another example of responsiveness was seen in Siqi's session, when Mingming imitated Siqi's hand-posture. This attracted Siqi's attention, leading Siqi to smile and to the two sharing focus and attention. A further noteworthy example occurred in one of Xinyu's sessions when Mingming and Jiajia were able to calm her down and guide her to play actively. This was as a result of their combined use of basic Intensive Interaction type techniques and simple improvisational piano-playing. This indicates the positive impact of DCTM's joint use of music therapy and Intensive Interaction techniques on children's learning and communication abilities. It also shows that responsiveness and playfulness are as important as music.

On numerous occasions in cycle 2, children exhibited responsiveness to music. In Xuanxuan's fifth session with Xiaoqiu, Xuanxuan gave a natural response to Xiaoqiu's instruction by blowing a horn. This appeared to be due to Xiaoqiu's adept body language and imitation skills. In addition, when Tongtong sang music without piano-playing, eye contact between her and Yujing lasted longer compared with Yujing's previous sessions in cycle 2.

5.5.1 Focus group discussion – final meeting

The last focus group meeting was held on 20th April. Many topics were discussed and the group collaborated in formulating a summary of the practices used in the project, as well its outcomes, problems and what further requirements could be identified for future work.

Focus group participants sought to address the following questions: First, what immediate needs must be met for teachers to be able to offer quality support to children, and to establish and build further on the musical relationships they share with those children? Second, how do improvisation techniques affect children's responsiveness to communication? And third, what currently used techniques should be improved upon, and accordingly what changes should be made in the near future in the training of early years teachers?

Mrs. Zhang is the person who in charge of the curriculum in the community centre and she gave some explanation of teachers' lack of confidence in the area of special needs education. She described how special needs teachers are marginalised by society, since less attention is focused on them and they are provided with relatively low pay, which has a direct impact on teachers' careers. Accordingly, society does not afford special needs teachers with an appropriate level of dignity or respect for their work. However, it was found that while the aforementioned points surely affect special needs teachers' abilities to teach well, there are more decisive factors that stand in the way of teachers' success. Specifically, these are teachers' lack of musical training and their lack of a child-centred approach to teaching in class.

The group discussed this further. Improvising with lyrics, they agreed, is a useful technique and one that could be adapted in the near future, but for teachers to use this effectively they first require further training. From selected video clips, focus group participants could observe children's limitations in expressing themselves verbally. Moreover, it was evident in the sessions that children were more relaxed when they sang. Thus, teachers from the community centre purposefully changed the lyrics of familiar songs, but their performances were impaired since they were worried about making mistakes. This meant that the aims of lyric improvisation were not achieved: children remained nervous in class. Teachers needed to learn that music improvisation does not need to be performed flawlessly; it is not intended as a music show, it is a tool for teaching. Some mistakes are bound to happen while teachers improvise, but what matters is how they handle this and use it. This technique aims to encourage children to communicate through music and to help children to feel the changes and differences that occur in a musical journey. Hence, this required the use of a song with a variety of formats that would be able to enrich the teaching. To this end, with appropriate training, teachers could copy and imitate what I had started and then be creative with the elements they discovered and improvise in similar ways.

The director of the community centre, Mrs Lining, mentioned that she would like to gather the teachers together to discuss the next season's educational theme and teaching plans, and require every teacher to design their own teaching plan accordingly, and in a way that takes into account their own characteristics and areas of expertise. Mrs Zhang added that she hoped each teacher could use music improvisation in their individual teaching plans. This might encourage teachers to be creative and to understand more about the effects of music. Furthermore, Mrs Lining said she would like to invite Professor Na and I to supervise teachers in developing their lesson plans. This would involve finding out how musical rhythm activities can be implemented effectively in teaching in practice and offering guidance accordingly. In response to this suggestion, I explained that I would be limited in that I would only able to support their further work remotely.

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In addition, Mrs Lining observed that to satisfy children's learning needs in an appropriate time it would be necessary to make immediate improvements in the quality of teaching as well as to make gradual changes to the teaching environment. She emphasised that they would ensure that this programme was extended and that teachers' training was not interrupted. The action research approach would be used for further development, with each cycle completed within three months. Within each cycle, there would be a focus group to advise on the next stage plan, as well as the simplified evaluation scales implemented to summarise the individual session. Mrs Lining explained that their teaching materials had not been professionally collated and she expressed a desire to have their own textbook edited under professional supervision.

Mrs Lining regarded the cycle two practice delivered by Tongtong and Xiaoqiu as below the standard of practice I had delivered. However, she believed that this was an understandable outcome since these teachers' music experience was not comparable with my own. Nevertheless, she held a positive attitude toward musical improvisation techniques and the possibility of adapting them for future teaching. Specifically, she said that during the project she saw the potential that these techniques hold in terms of how effective they can be for stimulating children's learning, even though it would be difficult to carry out the necessary steps to enable them to be used by the community centre's teachers.

In China, special needs education seems less developed than in the West, and as the teacher training system was different in each area, our particular region of China was even worse in this regard. Thus, in northeast China, a relatively basic teacher training system led to limited forms of teaching. Financial strain added another major obstacle to positive outcomes. The traditional way of teaching was easiest for our teachers since they did not need to have the mental dispositions needed for improvisation or creativity. Nevertheless, it is necessary for teacher training to continue if the community centre is to continue with the project. Hence, the major concern for early years special needs education was how teachers would or could be trained: who was going to teach them and when.

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The head of the special needs school, Mrs Shen, elucidated how there were also problems in deciding what to teach and what textbooks to use. During cycle 1, she explained that while I could improvise, their teacher could not. So, at the beginning of the cycle, she felt that teachers needed to have suitable materials and content to support their teaching first, before they would be able to be creative. This led me to consider whether the Intensive Interaction method and practical guidance materials might be used to greater avail for those teachers. This approach may help teachers to gain the observation skills required to detect children's responses and cues during the session. Hence, with such fundamental skills, teachers may find more opportunities for responsive interaction. This is one example of how improvisational techniques are built upon over a series of steps; they cannot be learned and conducted effectively at once. Therefore, while teachers may be supplied with the necessary suggestions for a lesson plan, they will inevitably be insufficient, as teachers must first understand what is involved through practical experience.

Professor Na from the Conservatory of Music, Shenyang, said that currently the community centre needed to pay attention to textbook renewal. However, she emphasised that the main focus will be on how to promote musical skills, how to select teaching materials and how to develop evaluation methods that can best meet the children's learning needs. She expressed how she had no doubt that the extension of this project was of the utmost importance. In addition, she told Mrs Lining that these teachers were not going to be trained as therapists. Rather, they would be trained in the child-centred approach and in certain improvisation skills. She maintained that it would be crucial for children's education that teachers were better prepared, so that they could understand innovative teaching ideas and music therapy techniques.

Professor Na envisaged teacher training as divided into three parts: early years special needs educational teaching; music therapy techniques; and early years music education – which combines the latter two in a comprehensive way. Her last and foremost point was that video sessions could be reviewed for educational purposes to aid in evaluating and analysing teaching issues and to help teachers improve their observation skills.

5.5.2 Reflection on cycle 2

Some problems occurred in cycle 2. These were not mere practical issues; they concerned deeper issues, of how to help teachers to think differently about their work with the children. During cycle 2, I prepared teachers in advance by reviewing the teaching plan and the required techniques. However, due to their misguided intentions and views regarding to need to control children' behaviours, they were unable to carry out the sessions in a way that adhered to the purposes of the exercises. In particular, they missed many opportunities to interact with children. However, an interesting occurrence was that Mingming seemed to use imitation skills naturally and to share children's attention. This was not evident in Tongtong's approach to teaching. Rather, Tongtong was very strict on proper behaviour, whereas Mingming seemed to pay less attention to such concerns, which seemed to make a great difference to their sessions. This suggests that it would be fruitful to focus not merely on the more practical matters related to teaching the children, but also on challenging teachers' attitudes.

A variety of evaluation scales were used in this project: the original Nordoff and Robbins musical evaluation scales; Intensive Interaction evaluation scales, in cycle 1; as well as simplified evaluation scales for teachers, in cycle 2. These evaluation scales were used to record four different variables: 1) quality of teaching; 2) musical relationship building; 3) children's responsiveness in music; 4) effectiveness of adapted materials and style of music. The evaluation scales are included in the appendix (F and G) to show how teachers' teaching, children's responses and relationships were measured. Appendix (H 1-3) shows the holistic picture of the outcomes within this project including the main differences between cycle 1 and 2 detailed in Chapters 4 and 5.

Nordoff and Robbins music therapy evaluation scales were used to record and examine incremental changes in the quality of teaching and learning, as well as effectiveness in the adaptation of the music techniques. The use of Nordoff and Robbins scales alongside simplified evaluation scales illustrated that there were positive changes in the aforementioned variables, and that they compared differently in cycles 1 and 2. Moreover, by depicting the subtle changes in relationships between the children and the teachers or

me, these scales also demonstrated that music improvisational skills are a potential avenue for improving teaching and learning conditions.

The evaluation scale adapted from the Intensive Interaction record form (Hewett and Nind, 2001) focused mainly on teaching reflections, as well as large or small and positive or negative changes in the sessions. This was a useful tool and easy to adapt for teachers, since it lends itself easily to a comparison with Nordoff and Robbins musical evaluation scales. In addition, the Intensive Interaction evaluation scale was particularly appropriate since it can be used in general classroom teaching as well as music curriculum evaluation. Both Intensive Interaction and Nordoff and Robbins scales proved to be good exercises for teachers for improving their self-evaluation and subjective judgment skills.

Chapter 6: Discussion

Introduction

In this discussion chapter, I explore my findings in terms of similarities, differences and novelty compared with the existing literature in the field. These findings are invaluable to me, in that they have played a decisive role in my further implementation of DCTM in education. They also need to make a wider contribution. The list of claims I can carefully make from the study, and which are discussed in this chapter, include:

1. The potential of the DCTM intervention for supporting young children with autism in China has been demonstrated. Meriting discussion is:

    i. The different influence of different kinds of music on the participating children's emotion/mood, communication and learning;

    ii. The finding that while musical materials are not the most important factor in DCTM, upbeat music was the most attractive type of music for the participating children;

    iii. Findings about how to use music: the effective use of DCTM involved musical activities based on Nordoff-Robbins music therapy techniques in combination with Intensive Interaction techniques via imitation and turn-taking.

2. The participating teachers experienced considerable challenges in using the new techniques:

    i. The teachers had a limited degree of familiarity with musical and Intensive Interaction materials/techniques and practice;

    ii. Teachers were often overly concerned with correcting these children's behaviours compared with supporting their engagement in music and interaction;

    iii. The role of teachers in this research is intended to be to create a relaxed, safe learning situation that is pleasurable and stimulating; this can challenge cultural

norms;

iv. The key features of DCTM intervention that supported teachers in meeting the

challenge were the emphasis on sustaining and monitoring, planning and

supervision.

3. The evaluation scales played an important role in this action research project:

i.   Evaluation scales were important for informing the action research process of

learning and making changes to teaching practice;

ii. Evaluation scale data, combined with field notes and feedback, helped the teachers

and me to identify the problems, reflect on the relationships and develop

self-awareness;

iii. The evaluation scales contributed to the knowledge of early years special needs

education in the Chinese context, and in particular, showing how combining music

therapy and Intensive Interaction techniques could be applied with young children

who are communication impaired.

Based on these core aspects of how well the DCTM intervention addressed the children's

communication and learning needs, and what has been learned about the teaching issues

and the main research questions, I discuss these claims in greater detail.

My summary of how I interpret the findings is that the implementation of DCTM in this

Chinese early years special needs education context was relatively successful in the first

cycle in which the intervention was delivered by me, a trained music therapist. I was able to

combine music therapy and Intensive Interaction techniques to engage the participating

children. The children's positive responses and interactions with music through verbal and

non-verbal communication improved and this confirmed that this musical intervention has

the potential to change learning for children. Although there were some less satisfactory

outcomes for the children in the second cycle, when the teachers were delivering the

intervention, it provided me and early years teachers with real knowledge of teaching issues and challenges. This was evident in the pre and post evaluation scales discussion, particularly, the focus group discussion and collaborative reflection elaborated these more deeply. Also, the findings have indicated the type of music which children respond to the most (especially first cycle), and what music skills and materials teachers were the most comfortable with (second cycle), based on feedback and systematic video analysis. Most importantly, this music intervention is mainly intended for non-professional music therapists and pre-school education workers to use to enhance teaching and learning. It involves, understanding the importance of responsiveness. All these findings helped answer my main research question concerning how to introduce music therapy techniques for developing spontaneous communication social skills of young children with autism in China.

Alongside my discussion of what we can learn from the findings of this study, I discuss the limitations and constraints that affected the findings. One limitation was the time constraints of this project, which meant there was not enough time to run more cycles beyond the initial two cycles, in order to develop and explore the development of the DCTM intervention in more depth. Also, there was very little time to train these teachers in advance, or alongside the introduction of the practical intervention. Hardy and Joseph (2016) point out that the action research process is designed to be simple enough while still focusing on a primary task, and continues in cycles until the solution is effective. Thus, with just eight weeks' introduction for this research field of study, it was hard for these teachers to teach effectively with so little practice. There were also limitations due to the complexity of these teachers' professional teaching development needed to implement DCTM alongside issues in their general teacher training system, such as, financial shortages, cultural affection, personal characteristics etc.

6.1 Potential of the 'DCTM' intervention for supporting young children with autism in China

The research showed the potential benefit of implementing the DCTM intervention into the early years special needs educational area, particularly focused on these Chinese children with autism in order to improve their social communication ability. The literature had indicated the potential of music therapy techniques with young children with autism in the West (Bieleninik et al. 2017). It was also a largest trial conducted by Porter et al. (2012) provided empirical evidence on using music therapy for young children who experiencing social and emotional difficulties. Grob et al. (2010) conclude that the use of music therapy techniques has a positive effect on the speech development for children with speech delay. They point to this providing not only basic and supportive techniques, but also support to form and maintain the relationships. I found the same. I also found evidence that incorporating Intensive Interaction techniques was effective with this group of children. DCTM combined these techniques for use by practitioners who were not trained in music or Intensive Interaction. The best evidence so far on this kind of combined approach in the West came from Margaret Corke in the UK (Corke 2002, 2011). In China there has been no such research previously, but the literature had led me to anticipate developments in communication among these young children with autism whose language development was impaired. Geretsegger et al. (2014, 2016) argue that the role of musical interactions in improving children's development has been widely recognised, particularly, in the impact on social communication. Thus, musical techniques, such as music playing with flexible rhythm, via interactive activities of turn-taking and imitation were explored in my project.

6.1.1 The different influence of different kinds of music

Next I discuss the difference in influence of different kinds of music on the children's emotion and communication. Tomaino (2013) suggests that music rhythm, melody, harmony and song affect early child development, stimulating children's emotions and creativity. In

exploring the potential of DCTM it was important to begin to understand the differences

between Nordoff-Robbins, Western and Chinese music when introduced to children in China.

If DCTM is to be adopted or adapted further, one key question is what type of music to use.

The action research showed that these all these types of music had similar effects on these

children's learning. I found that the choice between Nordoff-Robbins, Western and Chinese

music was not critical to the success of the approach. Nonetheless, it is essential to have a

preliminary understanding of these three types of music and what they offer. I selected

songs and music from Nordoff and Robbins, Western and Chinese music, and I have shown

how these were being used in this study and the impact on children's learning.

Here, I discuss some examples. One music story song I used was Joshua Fought the

Battle of Jericho from Nordoff-Robbins song books selection (Nordoff and Robbins

1978, Folk song book). This music which was composed in the Middle Eastern musical

idiom with polyphonic writing on the piano and accompanied with the drums and

reeds horns, aims to develop the relationship between child and teachers via musical

interaction. It also improves children's self-confidence to participate in the different

music roles individually within this song, and then transfer the learning into their

everyday life. There was a session from cycle 1, (see Chapter 4, Yujing's 4th session) in

which Yujing responded to this music naturally and followed up without much

assistance.

I also used a contrasting Western folk song, If You're Happy and You know it, which is

characterised by repetitive pattern in a canon genre with single melody. This predictable

rhythm pattern in an upward trend melody is popular as it gains children's attention easily

and the lyric can be changed according to the children's needs. Music styles may also be a

factor in children's learning and responses. If You're Happy and You Know it is popular in

China with young children. This song's rhythm is regularly echoing; the melody is in

traditional ABA single trilogy form. It is easy for children to follow, and the rhymes are

comparatively easy to memorise. In addition, the upward trend canon is compatible with children's language patterns and psychological development in the early years. It was effectively used in DCTM, particularly in cycle 1 with both groups of children responding actively. Jinyan's attention focused on the drum beat and finger posture when I played this on the piano. He happily filled in the gaps with my verbal instructions. He not only responded musically, but interacted personally with his fingers. The 7th session with Yujing also demonstrated how this western folk song worked.

Because of the positive influence on children with the uptrend music in the form of repetitive pattern, I was particularly keen to bring in this Western composition technique with traditional sounds melody when composing the greeting and movement songs, mainly for developing children's verbal and non-verbal communication ability. For instance, on Yujing's 3rd session in cycle 1, the counting game with the pre-composed movement song which I composed with the uptrend chords progression, affected him. It seemed that my music composed for DCTM sessions had a similar effect on the children's responsiveness as Nordoff-Robbins, Western music.

In cycle 1 the children's responsiveness gradually increased to all the different forms of music. This was noted in the focus group discussions, particularly with the director of the community centre, Mrs Lining, who was convinced that different music or music activities might have an impact on children's learning if the sessions were delivered by professionals. She particularly added that live music was much better than the radio or recorded music to encourage children to play. There were no observable differences between the songs used. The most visible evidence showed in Jinyan's 1st session in cycle 1 through musical tempo and interaction with his body movement. For example, I greeted Jinyan by alternately singing Nordoff-Robbins and my pre-composed greeting songs without lyrics in his first session. However, Jinyan did not say or sing anything verbally, instead twisting his shoes, but he listened to the music for a little while after he came into the classroom. Jinyan did not

respond musically at the beginning, but interacted using his body movements. Gradually his responsiveness increased positively as the practice went on.

In cycle 2, the outcomes were slightly different. Here Tongtong delivered the DCTM and used greeting music and Western music, which the children responded to at the start. However, their enthusiasm waned as the practice went on, which was the opposite of what happened in cycle 1. For example, in Yujing's sessions, he responded in his first session with singing but without focus, and left the room to show his refusal. Based on the data analysis for cycle 2, I concluded that different music and musical materials affected these children differently in small ways, but the choice of music type was not a decisive factor in teaching and learning.

Sallavanti et al. (2016) point out that it is better to use complex music for cognitive purposes and relatively simple structures of music for emotional purposes. While this study showed that the use of music in the classroom was influenced by their own structure's complexity, my evaluation scales also reflected that simple structures of music with upbeat rhythm impact children's learning.

6.1.2 Musical materials and the upbeat music

From the video analysis, I could deduce that different types of music all have their own distinctive characteristics. Children showed their interest in and responsiveness to upbeat music with repetitive patterns. While the type of music was less critical to the success of DCTM, it is hugely important to use the right music at the right time based on child's emotional changes, facilitated careful observation. For instance, If You're Happy and You Know it and Joshua Fought the Battle of Jericho are two distinctive songs, but they have a similar impact on children's communication and attention sharing when the music fits in the right place with a repetitive pattern and upbeat music. Robbins and Robbins (2004) found

that playing and singing upbeat music leads to engaging and sharing children's joint attention more easily. My analysis of the data has reinforced this finding in the new context of China. It is also important to understand that subjective music structure is based on the practitioners' level of musical training, familiarity with the song and children's age (Hargreaves, 1984; North, 2008). Thus, the music selection is determined by the practitioner through the responsiveness of these children. The analysis of the data also suggest that most children were attracted by the fast, rhythmic music which caught their attention; all, that is, except one little boy in group 2, Sunzhongqi (see chapter 4). This was most plausibly because the classroom environment affected his emotions, leaving him less responsive.

In another example, in Siqi's first session in cycle 1, she and I would swing to the right or to the left with my supporting elbows many times based on the flexible rhythmic music. Siqi laughed and relaxed after repetitive movements. Siqi was an interesting girl who refused intervention from most of the staff, except when it came to my music. Her bodily movement became lively when I improvised rhythmically with upbeat music. Also, in cycle 1, Yujing responded to Western folk music via turn-taking through the mutual drum playing, especially upbeat drumming in his case. According to the data analysis and video, children appeared to like fast beats in general, which has an equally strong effect as the Western folk song, but the ability to improvise and cater for individual needs seemed to bring additional benefits for the children.

During the focus group discussion, Mrs Shen, the head of the special needs schools, was convinced that the ability to engage children with a suitable level of music was critical to improving these children's learning in the classroom, particularly if the right music was chosen (Chapter 4). This claim contributed to an element of understanding quality learning in DCTM intervention in the Chinese context, suggesting a need to know how to select music to use in a particular context. In cycle 2, the teachers and I discussed the music first; then, I gave them some suggestions on the usage of music and then I left them to select by

themselves. For example, I suggested that these teachers use children's songs, and I suggested that these teachers were better off selecting songs that were shorter than eight bars, with repetitive patterns as well as being rhythmically strong. However, they tried some music that I had been using in cycle 1 even though that music was over eight bars in length, and they hardly applied songs that combined music with improvisation skills. The real lesson that I learned from this practice was about how to help these teachers to select appropriate music materials. In further studies, I would be more likely to practice with the teachers first with a variety of musical songs and activities, in order to prepare these teachers to organise their musical list.

6.1.3 Effective use of musical activities combined with the Intensive Interaction techniques via imitation and turn-taking

While the type of music was less critical to the success of DCTM, the approach in terms of HOW to use music was hugely important. During the two cycles of practice, regardless of who delivered sessions, the most effectively used musical activities were imitation and turn-taking. Moreover, repetition is a central element in musical playing, particularly in Nordoff-Robbins music therapy practice (Johansson 2016) and in turn-taking activity. There was evidence of the children playing mutually in taking turns in cycle 1, Yujing's 3rd session and Jinyan's 6th sessions, cycle 2, Xinyu's 5th session with Mingming (early years teacher) and Jiajia (one of my music therapy students).

In Chapter 2, I discussed how turn-taking is the main element for a dialogue and enhances social interaction (Holck 2004; Geller 2002; Trevarthen 2000; Nadel 2002). In my practice, turn-taking built enthusiasm in the connection between the child and me or the early years teachers (see Chapter 4- Jinyan's 4th and 6th session; Siqi's 1st session; Xuanxuan's 4th session; Chapter 5: Xuanxuan's 5th session with Xiaoqiu; Yujing's 3rd session with Tongtong). The children took turns and imitated musical activities in the classroom. In the literature review,

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I also discussed the idea that developing turn-taking skills via improvisational musical interventions and finding techniques to intervene in children's learning would be a priority in this action research project. Geretsegger et al. (2015) suggests that capacity for interactive musical engagement may be viewed as spontaneously creating music together by using simple instruments and movements through music.

In this project, data showed how the children imitated and repeated rhythms, actions and verbal phrases within interactions. Children responded to music actively via turn-taking, combined with body-movement when either I or the early years teachers delivered sessions. For example, when Xinyu and I played in her 4th session, she was swinging her body in a musical rhythm via hand-clapping with me. It was a mutual playing moment; we took turns not only musically, but creatively using body language to communicate with each other. Xinyu was comfortable expressing herself this way. Thus, effectively using turn-taking and imitation would be the one of the major elements for successfully implementing DCTM intervention further (see the pre-and post evaluation scales in Chapters 4 and 5). In the focus group discussion, Mrs Lining (Director of the community centre), Mrs Zhang (Director of the curriculum) and Mrs Na (Professor of Conservatory of Music) said that the outcomes clearly showed the advantages of turn-taking and imitation in this designed music intervention. They commented on these, developing a positive relationship between learning and teaching and improving the learning environment (Chapter 4). Furthermore, they were convinced that the visible effectiveness of those improvisational skills on children's communication and attention sharing, particularly, showed in the activities of turn-taking and imitation in the music sessions. I strongly suggest that DCTM is different from other musical educational methods in that it uses simple musical instruments, singing and musical activities creatively in order to develop children's social adaptation abilities, in addition to learning outside of music.

6.2 Participating teachers considerable challenge in using the DCTM

There were clearly critical factors that affected the successful application of the DCTM intervention in this project. DCTM was more effective in cycle 1 than cycle 2. This reflected that early years teachers' degree of familiarity with musical materials/techniques and Intensive Interaction skills practice were limited and their possession of DCTM fundamental skills was low. Together we found that they lacked the confidence to teach differently or the foundation to be creative to get the most from DCTM. In addition, these teachers were often overly concerned with correcting the children's behaviour because of their high expectations regarding them conforming to behaviour standards. A supervision process, therefore, seems to e important.

It is significant that the teachers' degree of familiarity with musical and Intensive Interaction materials/techniques and practice were limited. To identify available literature on the application of Intensive Interaction or music therapy skills for early years teachers in special needs education research in China, I conducted electronic searches using NDTEP (National Database for Teacher Education Policy), Super Reader and Google Scholar. These searches found no references either to Intensive Interaction with a focus on early years special needs education in the Chinese context or to applying or combining music therapy skills in this context. However, there was an article describing the Intensive Interaction approach in the UK context that pointed out the challenges for untrained staff using those techniques (Nind and Samuel 2008), but also the benefits. My introduction of DCTM is likely to have been the teachers' first introduction to the skills and ideas involved. They had not been exposed to any of the similar approaches such as Son Rise, Floor Time or Play therapy.

Looking at related fields, I found a few sources that commented on the relationship between teachers' skills and pedagogy in training before their career and in-service professional development in China (Dinggang 2010), but there are gaps in empirical research on music

therapy and Intensive Interaction area with early years special needs education. Shao et al. (2014) identify that core competencies in relation to the innovative teaching are educational competency, social competency and technological competency. However, the traditional teacher training system lacks on the knowledge of social recognition and purpose of education. Thus, it is important to build into the teaching a supportive relationship with these elements alongside. Li and Zhang 2014 indicate that Chinese teachers generally lack competencies to affect the teaching, thus, teachers' competency is a key factor influencing teachers' teaching and students' learning. This led me to explore what actual competences teachers should have in the early years special needs educational area; particularly, what key features of the fundamental skills of DCTM would be needed in order to implement this music intervention effectively. These might include the sense of child-centred responsiveness; trusting relationships; classroom interactions and observational skills; reflective capacity and supportive relationships. These are all extremely important elements in the implementation of this musical intervention as shown in the action research cycles.

There are also related factors beyond training which influence teachers' competency, including teachers' own character and beliefs. For example, in the cycle 1 practice with Yujing, the 3rd session which was interrupted by one of the teachers, who came into the classroom without asking permission. This incident indicates that the behaviour of the community centre teachers and the supportive relationship in this music intervention needs work. Thus, in order to ensure the successful implementation of this music intervention, it is necessary to have different levels of cooperation with the early years teachers doing DCTM and other teachers in the community centre.

In western education, a sense of child-centred responsiveness is a key factor for young children's learning, as discussed by Kellett (2000). She concluded the importance of this in a case study of one four-year-old with autism, Sam. This included research on Sam's progress in response to daily sessions of Intensive Interaction. The work of Sallavanti et al. (2015) also

guided me to design my project as child–centred interactive research practice in some ways. They argued that action researchers should be capable of making significant contributions to theory via the role of being an insider, while they need to be seen to engage with issues. This was particularly evident in this project, for instance when, in cycle 1 in Yujing's 1st session with me, we played hand-chimes in a natural way without verbal instruction, and I could actually sense the needs of Yujing in some way as a professional trained music therapist and music educator. My use of techniques of observation and simple imitation supported Yujing's movements, and I improvised with what Yujing brought even though it was the first session with many unpredictable factors, and I still guided him to explore more sounds. Essentially, we enjoyed each other's accompaniment. Video analysis indicates the challenging aspects of classroom interaction, and observation for teachers experienced in the classroom work (in accordance with Guskey 2002). In cycle 2, it quickly became apparent that these early years teachers' showed inflexibility and found being child-centred was a challenge.

To support these teachers in teaching, the fundamental techniques of interaction and observation seemed hugely important for them to introduce the DCTM with their daily teaching. It was not only because of the ways these skills benefit these children, but also because they increase these early years teachers' competency. In addition, this work prepares these early years teachers to be responsive. Belsito (2016) described the teaching-learning relationship as a conversation. However, in this project, these early years teachers did not quite interact with children in a natural communicative way. For example, the video showed that the teachers tried really hard to create a constructive classroom climate by trying to build close relationships via the music activities. However, they were continually keeping children to inflexible rules, which worked against both this atmosphere and being responsive to the child learner. For example, in cycle 2, Yujing's 5th session showed that Tongtong was concerned with Yujing obeying rules. Tongtong's inflexible classroom management seemed to add to Yujing's difficulty in interacting emotionally and physically with her. They were hardly playing together. Teacher communities, child and community centres are extremely complex entities and it is challenging to make them fit the

multiple relationships and interactions needed on different levels. The critical factor to improving child, teacher and community learning does not lie in any of these alone. The learning – teaching relationship is described as a conversation (Flores, 2015; Knewstubb 2016) and this conversation has many components.

There are endless opportunities for change for teachers in their careers (Hargreaves 2005). Some changes happen naturally in teachers' work, others are imposed by well-planned professional development training and systematic efforts to bring about changes in the classroom practices, in their attitudes and beliefs as well as the learning outcomes of child. Particularly, in this action research project, I found how difficult it was to help these teachers to make changes. Lund (2016, p.297) similarly indicates that 'old habits die hard'. For example, in helping Tongtong to make changes during her practice, classroom teaching and habits, I supervised her using review of video and discussion of session issues to support her in reflecting on her own teaching. In cycle 2, Jinyan's 2nd session, Tongtong used good body language to communicate with Jinyan. This was comparatively better than Tongtong's first taught session, and followed our after-session discussion and my supervision. There was only a minor change showing with Tongtong's teaching, but it happened. However, Tongtong did not keep up this good moment for long and it did not happen again in the following session. Tongtong is not used to this type of teaching, and even though she saw the differences in the responsiveness of the boy she did not change her teaching habits. Professional training activities are often designed not only to focus on systematic techniques, but also to encourage changes in teachers' disposition, attitudes, beliefs, and perceptions to be a qualify, competent and caring teacher (Knobloch, 2002). For example, in cycle 1 practice with two groups of children, I always adjusted my teaching ideas, attitude and teaching method to meet the child's needs, regardless of the research stages or a particular child. This was because the training I had was different from the training these teachers had. As a professional music therapist, I was not only trained in a child-centred way, but I am highly skilled in music, too, whereas, these teachers were trained following the traditional Chinese education system involving limited musical skills. There was a noteworthy session, Jinyan's 3rd session in cycle 1 practice with me, in which I changed the pre-planned musical

activities because of Jinyan's restless attitude, and this happened naturally. My professional training and the skills that have become natural to me, helped me to observe the boy's needs and make a noticeable change in the classroom teaching (see cycle 1 Chapter 4). In the method of action research, in cycle 2, when teaching with the same groups of children, Tongtong was able, with regular supervision and informal discussion after each session, to make some minor changes in her teaching attitude and perceptions of musical knowledge. Particularly, in cycle 2 with Jinyan's 2nd session, Tongtong took my advice, as she trusted my professional suggestions on her teaching and she used good body language to communicate with the boy. This resulted in the session being comparatively good. Tongtong learned and applied basic non-verbal communication techniques of holding the boy's hand to sing the children's rhyme; all this was based on classroom observation and interaction skills, although this activity did not last long enough. Furthermore, the informal discussion with Tongtong and Xiaoqiu after every session in cycle 2 became the main training activities which helped them to adjust their teaching attitude as well as improve their perception of music implementation in this project. Although the changes were not so obvious, Tongtong's teaching desire was to produce a good session, but the limitations of her traditional training and cultural expectations left problems with her opening out her teaching style towards a DCTM approach (see cycle 2, Chapter 5).

With this exposure of the misalignment between teachers' actual competences and those needed in this project, a question arises regarding how these early years teachers were trained in China. Watkins et al. (2011) points out that effective learning starts with the teacher. Thus, it is vital to understand the personal teaching style as a key influence on the learning and teachers practice development (Erickson and Pinnegar 2017). The results of the teaching performance in my project are visible from the video data analysis, and some of the influences can be inferred. Zhao et al. (2015) argue that increasing investment in basic education facilities and developing in-service training are the ways to help to improve the quality of pre-school education. However, if there is financial strain, then training quality teachers is the first priority to improve learning. In China, traditional teacher education has made a great contribution to all teachers' careers, including these teachers. Although the

trained teachers have professional knowledge in advance of teaching their specific subjects, teachers do not have enough professional knowledge in teaching techniques. This results in some cultural influence affections, limitations in teaching ideas and a lack of imagination and creativity (Zhu and Li 2011). All these factors restrict Chinese teachers' innovation in teaching methods.

The teacher training systems continue to develop, and date back to the 1950s (Gansu Education, 2013). However, only about 25% of teachers have been trained in colleges and there have been serious shortages of teachers in China. Professional music education based on social musical organisation has only been developed since the 1980s. Mainstream school music education in China has undergone historic changes, but it has also been a tortuous journey since the foundation of the Republic of China. Only some parts of China have the qualified music teachers who teach in the schools.

The music teacher training programme in China now has the general characteristics of being multi-level, multi-channel and multi form. However, even with a basic understanding of the teacher training curriculum, I could see that the practical teaching aspect of music teacher training seems insufficient and inappropriate, given the reality of teaching young children with special needs in DCTM interventions. It could not satisfy teaching needs in career with progressive learning needs, such as how to effectively organise the classroom teaching, how to communicate with students better, the flexibility of interacting or responsiveness to the students. Only four or six weeks of practical teaching experience are a serious shortage for the current educational system (Hu 2014). It would be really hard for these teachers to offer students a high level of learning environments. Because their teaching skills and lack of practice are well-known to Chinese teachers, these teachers are left with low status. Belsito (2016) stressed that a child's learning benefits when the learning environment offers a high standard of positive supports. In contrast, these early years teachers, with the same kinds of traditional training have a low degree of familiarity with musical materials and an

inadequate level of skills practice, which did not play a good role in the providing the quality of learning required.

Lack of familiarity with, and practice in, the DCTM intervention techniques limited these teachers' confidence to teach differently or build the foundation to be creative. Thus, there were problems during the second cycle of practice, when these early years teachers delivered the DCTM sessions. It was not because the music therapy techniques were difficult; it was that these teachers needed fundamental skills training in order to implement the DCTM method effectively. This requires both musical skills and the mentality of responsiveness or child-centredness. However, there was the exception that one member of staff – Mingming - and a music therapy student - Jiajia, who were more confident with being responsive (see Xinyu's 5th session in cycle 2). Data analysis in cycle 2 of these two exceptions highlight the importance of acting in a more intuitive and open minded way or in employing musical interactions and simple improvisational skills. Mingming in particular used 'mirroring reflecting' skills (as did untrained staff in the study by Samuel and Nind 2008). Her use of these skills in her DCTM with a little girl achieved better outcomes than in other sessions.

Barrett (2016, p.42) points out that 'children's musical play can be solitary, parallel or joint'. She also suggests that children's musical play reflects their understanding of communicative musicality. In DCTM, the key features were constructed under the influence of Nordoff-Robbins and Intensive Interaction approaches. In this project, the combined use of Nordoff-Robbins and Intensive Interaction techniques helped these early year teachers practicing with this new musical intervention, in particular, musical plays in improvisation and playfulness. Principles of Intensive Interaction, such as, responding, waiting, adjusting, improvising as well as observing (Nind and Hewett, 2005) are also fundamental skills in DCTM, evidence in my practice. However, early years teachers Tongtong and Xiaoqiu, tended not to use those techniques, including the much-encouraged improvisational skills.

Generally, they used the piano and percussion instruments better than other instruments, creating some space for attuning to the children. Drums are relatively simple and do not require a high level of musical skills among teachers or child learners. For example, Xiaoqiu used drums well within Xuanxuan's 5th session in cycle 2. They mutually played together and Xiaoqiu applied simple improvisational techniques in this session (see Chapter 5). There is no right or wrong way of improvising with the drums, piano, or other percussion instruments; there is only the teacher's or the child's preference, which is culturally affected. However, there is the possibility that it is not so culturally imprinted for everybody that nobody can step outside of it.

All the evidence indicated that the impact of DCTM on the children was affected by the teacher's ability to implement the musical intervention effectively, which in turn was impaired by their focus on correcting the children's behaviour. As I have argued, teachers' fundamental skills impact upon the quality of teaching and learning Knobloch (2002) and this was evident in DCTM. These participating early year teachers' intentions regarding correcting the children's behaviours stood in opposition to the DCTM teaching style and ethos. At the heart of DCTM intervention is focusing on improvisation with the child at the centre of what goes on rather than what teachers have prepared. Unfortunately, Tongtong and Xiaoqiu did not follow this key improvisation feature of the DCTM when they taught in the cycle 2 sessions, finding themselves distracted by correcting the children's behavior. Furthermore, according to the evaluation scales, the outcomes were that children's ability to communicate and share attention did not improve visibly compared with cycle 1. In addition, Yujing's progression in particular, seemed to go backward a little (see Yujing's 1st and 3rd session in cycle 2). Gordon & Patterson (2008) suggests the way in which teachers teach and the relationships they have with children reflects further evidence of bureaucratic effects on teaching styles. A particular example provided evidence that traditions, corrections and high expectations clearly impeded the development of teaching and effective learning during my research practice (see Yujing's 4th session in cycle 2).

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Based on the argument of Nind and Thomas (2005) that special education has been pre-occupied with correcting children's deficits, I have argued that the early years teachers were overly concerned with correcting children's behaviour and play. During cycle 2 practice, the teachers corrected children's behaviour most of the time. Tongtong and Xiaoqiu mostly delivered sessions with their instructions communicated strictly, but without involving guidance or helping the children to adjust their behaviour for themselves. For example, they always requested that the children behave themselves and sit up properly (see Yujing's session 4, 5 and 6 in cycle 2). They displayed misunderstanding of what they were to do with the child's emotions or behaviours. Hence, they reverted to getting children to submit, behave and complete the task rather than enjoying each other's company and interacting with the music. This is not a way of providing real opportunities for children with special needs to benefit from DCTM.

Nind and Thomas (2005) insist that we should trust our own feelings and our 'own knowledge as people' (p.97) of human emotional states to understand and teach others. This does not help here, because these early years teachers were so culturally affected by behavioural expectations that their tacit knowledge of human learning was affected. Tongtong and Xiaoqiu were keeping to the teaching rules very seriously even though they thought differently sometimes. For example, in cycle 2, (Chapter 5) with Jinyan's 4th session, Tongtong was afraid of losing control of the session, so even when she saw Jinyan's willingness to play the drum, she still insisted the boy should play what she had planned. The Intensive Interaction approach is concerned with enhancing the 'quality of teacher-learner interaction through reflective skills' (Nind and Thomas, 2005, p.96). A good mutual relationship between practitioners and- children is the essential guideline for early years teachers in teaching at the Shenyang Community Centre. Yet these teachers only focused on their own playing or planning (see Jinyan's 7th session) because of the influence of a traditional teacher training system and culture. Moreover, high quality teaching should work from the assumption that all students can learn (Darling-Hammond, 1999) rather than conform.

Chapter 6: Discussion

These early years teachers did their best to complete their role in the project, although they only had eight weeks' teaching practice with the new techniques, without proper professional training. Thus, I was grateful, although the outcomes were not ideal due to the influence of a traditional culture and training system. There are limitations regarding familiarity and practices, which show that these early years teachers missed children's subtle changes, and did not have the ability to make adjustments or understand the children's behaviour with a sense of child-centred responsiveness. However, there were subtle changes that showed that these teachers might be able to progress and teach better with DCTM techniques (see Chapter 5, Yujing's and Jinyan's sessions). On reflection, this does raise important issues. Mrs Zhang (Director of the curriculum, community centre, Shenyang) said that these young teachers did not simply prefer not using the DCTM method; it was because they were afraid of making mistakes. They did not train in a child-centred and musically creative way and so they did not adopt this readily. In addition, teachers' reactions and responsiveness in cycle 2 raised more questions than only those concerning musical skills and techniques.

Hargreaves (2005) arhues that many factors influence teachers' teaching and intentions: including their gender, age and stage of their careers. Culham (2004) discusses gender issues in Intensive Interaction, arguing that adopting the approach may be more complicated for male practitioners. During cycle 2 practice, I found that the male teaching assistant Xiaoqiu misunderstood about how to share a child's emotions. This may have had less to do with his musical skills or technique training, but possibly owed something to his male gender and very young age. The data indicated that the Xiaoqiu did not need any musical skills to support emotional atunement in the situation (see Siqi's 5th session in cycle 2). He only needed to understand at a level of human connectedness (Nind and Thomas 2008). Thus, I question whether gender norms might be an issue affecting Xiaoqiu's teaching.

Chapter 6: Discussion

In the focus group discussion, the Governor Sun said that 'the visible evidence from the video session regarding the children's active playing with the researcher, which was not because of the researcher used techniques masterly, it because indicated the musical therapy skills that can be applied into the special needs class for Yujing, Jinyan, Siqi, Xinyu and other children in the groups'. The evaluation scales indicated that the children' learning interests were stimulated and a variety of teaching content was added into the classroom teaching. I believe that the finding regarding the problems with correcting children's behaviours could contribute to the traditional teacher training system in China, as it can provide small practical cases to make up as a part of teacher training and curriculum reform in the field of early years special needs education. In addition, I suggested that what these teachers need urgently for their current teaching is an increase in competencies of understanding, rather than correcting, children's behaviours. More supervision and practice with teachers, while meeting more professionals who are interested in DCTM interventions to discuss the character of these teachers teaching in correcting behaviours, would be more useful for the teachers understand and accept the changes in their teaching styles more convincingly.

I intended that the role of the teacher in DCTM intervention is to create a relaxed, safe learning situation that is pleasurable and stimulating; this can challenge cultural norms. During the practice, I emphasised that the teachers needed to be more flexible with what they were going to teach. They had to create a safe and happy learning environment in order to help children to relax and enjoy the session, then, change the learning atmosphere to learn better. Being more specific, there were some fundamental skills in DCTM intervention that teachers needed, such as responding, waiting, adjusting, and observing. Those deep influences came from the approaches of Nordoff and Robbins (2004) music therapy and Intensive Interaction. Those behaviours were showing when I practiced DCTM in cycle 1, whereas teachers did little of this, even with supervision. Governor Sun said that 'trust relationship is the most important component for learning in the special needs area with young children and the improvising was the key' (Chapter 4, focus group discussion). In

particular, improvisation helps children with autism to improve their social ability, such as joint attention, concentration and developing their verbal and non-verbal communication abilities (Szweda 2015). In contrast, in the traditional Chinese educational system, teachers generally have the form of teaching plan, aims, goals and principles to follow. Culturally, teachers teach with less creativity and reflectivity and it hard to break with the teaching norms. In particular, teachers are not well equipped for early years special needs education with the full knowledge of autism, music therapy, or Intensive Interaction. Thus, they are afraid of breaking the cultural norms and being in a situation beyond their ability to control.

6.2.1 The key features of DCTM intervention that supported teachers in meeting the challenge were the emphasis on sustaining and monitoring, planning and supervision

As Samuel and Nind (2008) argue, the 'sustaining and monitoring' (p.123) of fundamental skills training needs to be emphasised for novice Intensive Interaction practitioners. This also applies in my study. Moreover, quality 'planning and supervision' (Samuel and Nind 2008, p.123) will have a strong impact on community educational programmes. For example, Tongtong and Xiaoqiu could benefit from tightly focused reflective discussion before and after the music session (see chapter 5 Yujing's 3rd session). However, they might deliver the session unsatisfactorily if they only focused on the currently session without reviewing and understanding the previous ones. In addition, Tongtong and Xiaoqiu did little monitoring within the sessions with regard to the children's playing and emotional engagement.

Planning and supervision were the key features for the more successful DCTM music intervention. According to my data, there were two better sessions (Jinyna's 2nd session and Yujing's 4th session in cycle 2, chapter 5) in terms of outcomes delivered by Tongtong. Those sessions illustrated the role of supervision and monitoring as the keys to ensure the learning quality of DCTM within these teachers' conditions. Supervision and monitoring are not

generally available to teachers in China. Currently, in China, there are still expectations that young children, whether they are typically developing or have special needs, will behave, sit and act in accordance with traditional norms. White (1982) argues the importance of understanding the aims of education. The participating teachers did not seem to fully understand my original aims with DCTM, or at least take on those aims. The DCTM intervention aims to support, guide and help the children to learn and enjoy. It is not trying to train these children. Thus, continuing training on the key features of planning and supervision, sustaining and monitoring, stressing the core aims, may be a possibility to change the teachers teaching and the learning environment.

6.3 The evaluation scales

Evaluation scales were important to improving the action research process of learning and for making changes to teaching practice alongside the sessions. I used Nordoff and Robbins' (2004) music evaluation and Hewett and Nind (2001) Intensive Interaction reflective record forms to evaluate the cycle 1 practice and the early years teachers used simplified version of these to evaluate their practice in cycle 2. All sessions were videotaped for analysis and consecutively assessed in detail after each session, independently by me or by the early years teachers. Nordoff-Robbins assessment scales aided evaluation of developments for the first and last session of each cycle respectively. Using the Nordoff-Robbins scales I assessed the 'child-therapist relationship in musical activity' (CTR- see appendices) and using the Nordoff-Robbins scales II I assessed 'musical communication ability' (MCA- see appendices); both were measured on a 10 point scale where 0 denotes the lowest values and 10 denotes the highest values in the respective categories (Nordoff and Robbins 1979;2004; 2007).

Intensive Interaction evaluation scales were devised based on the published reflective record forms (Hewett and Nind 2001) to evaluate the big and small teaching issues after

each session. More importantly, these Intensive Interaction evaluation scales seemed to help with the therapeutic approaches in this project; guiding the learning challenges facing these early years teachers. Together the simplified evaluation scales helped the early years teachers to understand their own practice and make changes or learn from those in this action research project.

Noffke and Stevenson (1995) recognise that action research is used to explore and make changes in social contexts, not only in education, but other areas too. The idea of action research is to use feedback to reflect upon the living practice and research progress (Whitehead 1991; Elliot 1991; Kemmis 2009; Mclntosh 2010). The evaluation scales were an important way of doing this in this study. Thus, I saw the advantages of the action research framework fitting my study better. Moreover, they facilitated reflexivity on the gathered evidence as soon as I entered research fieldwork (as discussed by Postholn 2010), then changes in practice were implemented. Reflexivity was the most important part for both the teachers and myself, with respect to the field notes and the reflection journal. However, there were differences between the teachers and myself in evaluating the video recording and thematic field notes. The teachers did not use video analysis and field notes as the formative instruments for teaching, thus, sometimes they missed out the key points during the reviewing. This limited their capacity to reflect effectively on their teaching based on these data.

The focus group discussion showed the potential of the evaluation scales, as the scales showed the participants visible progress made by the children. This was true of musical responsiveness and relationships. For example, the children's confidence started to increase with using non-verbal communication, and social skills according to the cycle 1 evaluation scales summary (see Chapter 4). Closeness of relationship might not show in speech tests or other development tests alone, but the Nordoff and Robbins scales and Intensive Interaction assessment did reflect this aspect.

Chapter 6: Discussion

The important findings from the Nordoff-Robbins evaluation scales were confidence in interpersonal musical relationships and relationships developing. Discussion between the main stakeholders helped to ensure that the processes and findings were credible. In particular, the assessment of Nodorff and Robbins I&II evaluation scales showed the children's progress from a very low level (1) to the middle or even higher level (5), such as Yujing (Appendix C1). I have claimed that the evaluation played an important role in this project and produced evidence of the progress for both child and teachers/researcher that is credible. For example, the Nordoff and Robbins evaluation II underlines how the relationship developed between child-therapist/teachers. Jinyan's session analysis in particular showed improvement via the evaluation scale as well as the teachers' reflection on the body language changing (appendix B1). The role of the evaluation from the Intensive Interaction descriptive evidence was more about informing the practice rather than demonstrating the children's improvement. The data thereby played an important role developmentally and formatively rather than producing irrefutable evidence as in quantitative research.There were changes in musical behaviours and responsiveness between indicated by the Intensive Interaction scales. In addition, the evaluation scales based on the video data were co-ordinated with my action research aims, and enabled me to address many different issues at one time without losing the main focus. Thus, an early years teacher or I would make changes in practice and actually feel those changes in ourselves and our practice, which was an extremely important stage for the research process. Furthermore, evaluation of the post-assessment sessions indicated that the whole teaching process in this action research project was not so familiar for these teachers. Ultimately, the eight weeks' teaching practice did not give them enough time to become experts in the skills.

The focus group data lead me to argue that the evaluation scales are an essential part of this framework of action research. As I discussed, there is the advantage that an action research framework seeks change during and through the research. In particular, in the iterative cycles, the evaluation is on each cycle's conclusion, using the summary of the evaluation scale to reflect upon the working and teaching, how effective the teaching is, and what

problems arose with the classroom engagement. This was beneficial for the DCTM implementation in the context of this project. For example, the evaluation scales strongly indicated that DCTM was positively implemented into the Community Centre's current teaching programme and improved the children's learning. The evidence for this showed particularly in cycle 1 (Chapter 4).

The evaluation scales in this project were, especially helpful to the teachers and myself in identifying problems and developing self-awareness from the field-notes. For example, we have Jinyan's 1st session with Tongtong in cycle 2. Tongtong's field note wrote that 'I felt good about the beginning of the session with Jinyan when we sang together. But I was confused about why I lost the boy when I changed activity to the counting game. I still used the piano'. This illustrates Tongtong's level of understanding and her practical skills in music according to the systematic analysis of her field notes. The video evaluation scales reflected that Tongtong played discordant chords on the piano. In addition, Tongtong's observational skills were not good enough to lead the child's playing. It seemed that the feedback and her field notes helped her to understand her teaching issues in order to make some changes in the next session.

This is a good aspect of the action research framework with the mini iterative cycle structure. Each session is a mini cycle to identify the issue, to make changes then re-plan the new session based on the reflexivity and evaluation scales' suggestions. As reported in the literature, changing educational practice is known to be difficult; the research evidence indicate that sustained change has to be supported by reinforcing teachers' knowledge and beliefs (Fisher and Wood 2012). In the action research project, critical feedback and reflective practice were the ways of sustaining the changes for teachers (as discussed by Whitehead and McNiff, 2006). My initial question in this action research project asked 'how can music therapy techniques be introduced to benefit the communication development and educational experience of young children with autism in China?' This required reflection

on our exploratory efforts. In order to be reflective, feedback is critical. The teachers and I

shared feedback and an informal discussion after each session and this strengthened the

teachers' beliefs in terms of teaching style's changing. Over time, in particular, the post

observation on video data analysis consistently showed that the iterative feedback enabled

the teachers and me to broaden our focus on how to use the DCTM techniques to impact on

children's learning. However, sometimes the feedback was less effective to the early years

teachers (see Chapter 5).

My reflection journals ensured that the regular focus group discussion helped me to

collaborate with research participants. Focus group transcripts also reflected the

relationship between the focus group and myself in this research project, in which the

expert group supported my work and the situation, suggesting to me how to cope with a

variety of roles. For example, Professor Na said 'these teachers were not going to be trained

as music therapists, but need to be aware of the child-centred thinking with certain

improvisation skills'. Thus, 'as the researcher, you need to prepare teachers better in line

with changing and understanding innovative teaching ideas helping these teachers on music

therapy techniques adaption would be crucial factors.' This example shows how the expert

focus group was my guide in my research journey. Professor Na also pointed out that the

video session, used in an educational way, would help to improve these teachers'

observational skills in particular. Those methods were not only new to the teachers, but also

useful and beneficial to them in their teaching context.

The evaluation scales showed that it is worth trying to combine music therapy and Intensive

Interaction techniques with young children with autism and impaired communication

impaired as I did with DCTM. This new intervention has never been researched in the UK

context, China, or any other country. Throughout this action research the evidence

confirmed that this DCTM method can be used in the current programmes in the Chinese

context, and can be adapted for use by regular staff under supervision. The teachers need

more training and support to apply the evaluation scales effectively as part of the DCTM intervention training in observation skills and feedback to their peers.

In my study, my focus was to explore how a set of music therapy and Intensive Interaction techniques (DCTM) could contribute to learning for young children with autism in China, and could be employed by local professionals and teachers. Exploring the responses of young children and teachers to those techniques would help in gaining more understanding, improving the quality of learning and teaching in autism education and special needs education. Evaluation scales have made an important contribution to all these aspects.

The evaluation scales also helped to maintain the action research style of thinking, which was vital to me and the early years teachers in feeling a sense of ownership over the research. Evaluation often refers to a periodic or summative process (Martinez, 2017), whereas in my action research practice, evaluation was conducted after every single session. There was an advantage to using assessment scales with the video recordings to help teachers develop self-reflection and awareness to refine their own teaching in detail. Thus, the evaluation scales linked with video analysis were critical for this action research. Video show that what the participants' think, do or learn is still true, when they return to it in another time or in another context (Fisher and Wood, 2012). In particular, in this project, the post-video observation and analysis were key to self-awareness. In the traditional teacher training of these teachers, they were not using video in an educational way, to evaluate their teaching, to reflect and to identify issues. Thus, video recording is one of the important elements for ensuring that classroom teaching improves the training system and self evaluation in the action research project.

I have discussed my findings and research issues in this chapter. The next chapter will explore the limitations, implications and conclusions for this action project.

Chapter 7: Conclusion

This research project was the first systematic exploration of an intervention combining elements from music therapy and Intensive Interaction to help young children with autism in China. Through this research, I identified an absence of empirical research from the special needs education field, particularly applying music therapy with young children with autism in developing countries. This can be seen in my literature review (and in the work of Marley 1984; Bunt 1994; Brusica 2005; Nordoff and Robbins 2004; Aldridge 2005; Oldfield 2008). The intervention DCTM in this project was designed by me, for use by staff who are not trained as music therapists. Using action research, I explored how DCTM musical interventions could be implemented within the current educational system, aiming to enrich the children's learning and help the teachers' teaching in community centres in China. The systematic analysis of field notes, video recordings, evaluation scales and reflective journal have been important parts of the research evidence, and have indicated the main teaching issues, practice progress, as well as the potential of this kind of intervention. These findings and data contributed to the wider related knowledge area of special needs education in China.

7.1 The findings

Nordoff and Robbins' (2004) music therapy was shown to have a strong impact on children's communication abilities before this research, particularly for children with autism. Music in the classroom was known to create a learning environment that makes most children want to learn (Sze and Yu, 2004). Although a number of approaches for children with autism have had positive effective, not all children benefit from any individual approach (Prizant etc., 2003). Furthermore, we knew that difficulties with social communication are a core feature of autism (White et. al, 2007), and that music has been found to help (Spiro and Himberg, 2016). However, the role of particular aspects and types of music is unclear (Duffy and Fuller, 2000).

Chapter 7: Conlusion

Thus, in this small study, I focused on finding the potential of DCTM intervention in supporting social communication development and explored specific techniques indicated by IMT and Intensive Interaction. There was evidence from one long-term study (Kasari et al, 2012) of the value of focusing on joint attention and play, but we did not know, whether Nordoff - Robbins' techniques would have the same effect in the Chinese context with Chinese children. It was particularly uncertain what would happen if these were delivered by Chinese early years teachers rather than professional music therapists. Given the combination of lack of trained music therapists in China and the potential of music techniques this was an important area to explore. My findings have clarified, in particular, that DCTM has the potential to benefit young children with autism, but that teachers of young children with special needs in China face considerable challenges when building these new techniques into their daily teaching.

The DCTM was designed to include elements of Intensive Interaction where there is also an empirical evidence base (Kellett and Nind, 2003). While this approach was initially developed by and for teachers in the UK and researched with them (Nind and Hewett, 1994), people have tried Intensive Interaction with untrained staff who were beginning to learn and use Intensive Interaction techniques, and non-trained practitioners, who tried music therapy techniques in working with young children with special needs. For example, Samuel and Nind (2008) found that Intensive Interaction can be used by untrained care staff in the UK and Corke (2002), a trained play therapist, applied music therapy techniques with combining play therapy and Intensive Interaction for young children in special schools. However, no one merged both techniques within the special needs educational field, or explored the impact of these two techniques on children with special needs in either the UK or China by Chinese teachers.

In my study, I designed DCTM to combine music therapy and Intensive Interaction techniques together for use by Chinese early years teachers, whose training is quite different

from western trained teachers because they are not trained in a child-centred way. The teachers struggled with following the child's lead which is integral to both Intensive Interaction and Nordoff - Robbins music therapy. These teachers were influenced by a teaching culture of setting high expectations of children, especially in terms of correcting children's behaviour and play. The way in which these teachers teach and the relationships they have with children reflect further evidence of bureaucratic effects on teaching styles in the community centre in Shenyang. I found that the lack of musical confidence and familiarity with DCTM fundamental skills limited their development in DCTM teaching. Thus, if these teachers fundamentally engaged with the DCTM method, there must be some degree of different impact on the quality of learning. Moreover, sustaining and monitoring, planning and supervision support from professionals would be needed to ensure that these teachers would find a facilitative role in the future, teaching with DCTM.

In conducting the action research, finding ways to balance the dual roles of practitioner and researcher created some dilemmas for me. For example, I had to focus on the teaching when I delivered DCTM sessions in cycle 1, but lost the insight of the observer as the action researcher; conversely, when I concentrated on acting as a researcher, then I may have missed some of the self-awareness required as a practitioner. While I worked alongside the teachers, I did not really work collaboratively in the real context of teaching. I found that helping these teachers to think differently about their work with children was a real challenge and one to focus on for the future.

In this project, I worked closely with a kind of advisory expert focus group with whom I had regular meetings, discussing teaching issues and planning for the next stage of the research. The group did affect my practice, but not as much as I expected because they did not all have professional knowledge of music therapy, and they had never heard of Intensive Interaction before this practice commenced. The focus group had a critical role, but it was not a comprehensive role, so I had to rely on myself for the music therapy part; it was my

own ideas, and reading Margret Corke (2002), that gave me inspiration around the Intensive Interaction. However, the focus group people were familiar with the context, community centre, parents and children as well as the teachers, thus, they were supporting me in running the sessions, keeping the children and parents engaged in working with this project. They also encouraged the teachers and myself to carry on, until the fieldwork of this action research project was complete.

In terms of action research, there was much action in this study. As action research focusses on changing and improving learning and teaching (McIntosh, 2010), it helped my research design to build the real teaching context, in order to explore the impact of DCTM on these children's and teachers' learning. McNiff (2014) points out that action research is a way to connect theory and real practice, summarising knowledge and making a change. Whitehead (1989) and Whitehead and McNiff (2006) coined the term living theory for where the qualities of individuals generate explanations of their educational influences in their own learning, learning of others and learning of social formation. They encourage educators to apply the action reflection cycles to express concerns, develop action plans, act and gather data. The uniqueness of this living theory is that each living theory is generated by individuals for specific contexts (Whitehead and McNiff 2006).

Moreover, the working process of an action research study is about openness and criticality rather than the certainty throughout the research project. In addition, the reflexive skills of action research inspired me to gain a deeper understanding regarding the relevant techniques for these children and teachers' learning as well as the DCTM implementation. Cain (2011) points out that self-reflexive and observational techniques are necessary for teachers' classroom-based action research because the findings are not generalisble. I positioned myself as insider and outsider during the action cycles in which operated sessions in the class as practitioner and discussion/observing sessions outside of the session with early years teachers. It was important that I was able to stand back to observe the early

years teachers' teaching actions systematically in order to improve the learning and teaching. Further action research cycles may extend this study to deeper and wider levels of improvement of these children's learning, with the staff able to stand back and reflect more themselvels. Thus, more action research cycles would allow us to identify more teaching issues and make more effective changes for the children's learning. Simultaneously, more cycles would provide an opportunity for me to develop more understanding about my DCTM intervention.

7.2 The Development of Communication through Music intervention

The DCTM was something I developed as an intervention. I designed it to bring together some relevant skills and elements of Nordoff and Robbins' (2004) music therapy and Intensive Interaction (Nind and Hewett, 1994), to create an intervention that non-musicians or non-music therapists could use in China, in order to benefit children with autism, as well as enrich their teaching programmes. I acted to explore the impact of different types of music on these Chinese children's spontaneous communication, finding that the most effective musical activities involved imitation and turn-taking, but that the choice of Chinese or Western music for this made a tiny difference only, not observable difference. Therefore, I have been able to conclude that the music materials and elements are not a decisive factor in successfully using DCTM. DCTM turned out to be a worthwhile intervention to introduce music therapy and Intensive Interaction techniques to improve children's learning environments and encourage these children to respond to music. Regardless of the short-term or long-term implications for these young children's learning, I was able to identify aspects that needed adjustment in order to implement the approach successfully and in order that early years teachers could use it comfortably in China. The evidence strongly indicated that both elements of music therapy and Intensive Interaction techniques were necessary in cycle 1, as these two together made the music intervention successful when I applied them with my music therapy background. Whereas in cycle 2, I found that the music therapy and Intensive Interaction fundamental skills were not developed enough

when applied by the early years teachers using DCTM. Therefore, while the action research showed the potential of the DCTM concept in reaching the children with autism and the intervention design was good, I learned that any future implementation of DCTM in China with these early years teachers is going to take more well-planned support and training than I anticipated at the beginning of this study.

The benefits of the DCTM for the children did depend on who was using it and how effectively they delivered it. The teachers sometimes struggled. The primary training of the participating teachers was not based on child-centred principles and lacked material on music techniques, Intensive Interaction or similar approaches. Thus, as the director of the community centre noted, there are three steps of training needed in order to help these teachers successfully bring in DCTM in their future classroom teaching: design a suitable training plan, set up a professional model, and establish time scales for the teaching practice. The data showed that this is possible – the condition is that the teachers possess fundamental dispositions and skills suited to the approach, as well as certain techniques of musical training. This is absolutely central to the successful implementation of the DCTM method. I have been able to conclude that the teachers' fundamental skills in relation to DCTM and their disposition towards their role in this have a significant impact on children's learning.

The emphasis in DCTM is not only about the new musical materials added into the field and their applications; it is all about the re-creation of Nordoff and Robbins' (2004) techniques, using Western or Chinese music accordingly, and the cultivation of an idea of improvisation and following the child's lead (Nind and Hewett, 2005). Moreover, the idea is not about taking off the peg Chinese or other music, or adding in a few new songs, it is about what the teachers do with the music and with themselves to engage the children. I did compose a few songs to support DCTM intervention, in which elements from Nordoff and Robbins' music were combined with characteristics of Western musical composition. These songs were not

purely traditional Chinese folk modes; however, these songs can be adjusted according to these children's needs. There is no music that can be applied to all or only these children, but it is possible that teachers, with more support with musical techniques, can satisfy the different needs of these children through the rhythm, style of music or lyric improvised. DCTM implementation is mainly about the idea of how these teachers engage with this intervention and how well these teachers use the skills of responsiveness, spontaneity, observation and reflection in interacting with the children. The evidence shows that the songs might be sung, the children's moods might improve; but without the teachers' ability to use musical improvisation for engagement, a real rapport is impossible (see Chapter 4, Yujing's session and Jinyan's session). Thus, musical training is important, but the teacher's DCTM competency is more important to implement this musical intervention, therefore, teachers and their in-service professional training with DCTM are essential. The teachers in this study tended not to improvise (see Chapter 5, Yujing's session and Jinyan's session); they faced challenges to change their thinking in order to engage with this new type of teaching. Furthermore, modelling and monitoring are also key features to these early year teachers. Such teachers need experienced professionals to demonstrate the practice, and leaders to encourage and supervise them to improvise in the classroom. The research of Samuel and Nind (2008) indicated this in the UK context, and I found it in the Chinese context.

7.3 The Implications

Overall, I have come to the conclusion, based on analysis of the data from this research that young children with autism in China can benefit from intervention involving music and Intensive Interaction, particularly the musical activities in DCTM of imitation and turn-taking (see Chapters 4 and 5). In the thesis, there is also the practical contribution of beginning to understand what might work in the Chinese context, as well as the theoretical contribution of understanding why there might be limits. The theoretical contribution concerns the 'understanding of the child-centredness' idea, showing how an injection of child-centredness

might enable children and staff to develop their ability in different ways. Child-centredness underpins the rationale in both Nordoff-Robbins music therapy and Intensive Interaction and it has had a large influence on my own practice. In my action research the practical and theoretical contribution are linked by the living theory (Whitehead and McNiff 2006) that a child-centred mindset is needed when implementing DCTM. Practical contributions and theoretical contributions are perfectly married in my study and cannot be separated from each other.

The children in my study responded to DCTM, which I developed based on music therapy and Intensive Interaction techniques. To realise the potential of DCTM, there would need to be changes in teachers' training. More attention would need to be paid to developing the relevant DCTM competencies among early years teachers. This has implications for the fundamental training of staff, addressing, not just skills, but mindsets and attitudes. The latter requires training, as well as effective supervision and planning, which can build teachers' confidence and motivation levels. There are also implications from this study regarding the wider value of using video recording to build self-awareness.

In the future, Chinese early years teachers who may use DCTM are going to need a lot of help around musical confidence and Intensive Interaction skills like attending to children and responding with micro-adjustments to engage and hold their interest. The DCTM method could benefit more young children with autism in China if Chinese teachers are able to implement it effectively and confidently. It could become a supplemental programme to the current early years special needs education curriculum, if the local special needs schools, organisations or private practice could see its potential and choose to adopt it.

7.4 Limitations and constraints

Through this action research project, I have learned that music and musical therapy techniques have the potential to change learning and teaching if delivered by the professional musical therapists. This was building on and echoing existing knowledge from the literatures of Nordoff and Robbins (1977; 2004); Edgerton (1994); Aldrige (2005), in particular, for young children with autism. In addition, there numerous studies connecting improvisation and progress for individual with autism in Western cultures (Nodoff and Robbins 1968, 2004; Alvin and Wanwick 1993; Edgerton 1994; Wigram 2006; Ullock 2004; Thaut 2008; Kim 2009; Gold 2009; Lim 2007, 2010; Petra et.al 2013). However, there was still limited evidence on the influence of improvisation for spontaneous communication with young autistic children, particularly in the Chinese context. Moreover, before this study was conducted, we did not know whether the same effects on young children with autism would be evident if music therapy tehcniques were combined Intensive Interaction techniques and adapted into Chinese music and contexts. I have also learned that non-professional musical therapist and early years teachers could utilise these sorts of skills to shift teaching and learning in a positive direction for young children with autism in China.

While the study has moved knowledge forward it is not without flaws. There was the limitation that the time constraints in this project meant there was not enough time to run more cycles, beyond the initial two cycles, in order to develop and explore the development of the DCTM intervention in more depth. In addition, there was very little time to train these

teachers in advance and alongside the introduction of the practical intervention. Thus, with

just eight weeks introduction my research design made it hard for these teachers to teach

effectively with so little practice. Apart from the time shortage, there were also limitations in

the context of these teachers' professional teaching development on DCTM or in general

teachers training system, with financial shortages, cultural and personal characteristics also

having an impact.

7.5 The personal perspective

Personally, I gained an in-depth understanding of the realities of applying DCTM in the

Chinese context and experienced a way to intervene with young children with autism via

music in China. This study has prepared me for further research in the wider field of early

years special needs education in China. If I came back to the research, I would do some

things differently based on what I learned. For example I would incorporate more

supervision and practice with more detailed pre-planning with the teachers, building more

confidence and preparing the teachers better with their techniques. In particular, I would

work with teachers on developing a child-centred way of thinking and practicing via proper

DCTM professional training. Without doubt, I would spend more than three months

implementing the action research design. For the action research framework and design, I

would incorporate elements of action research cycles, in which the first cycle would be for

the teachers, the second cycle would be for me to model the session during the practice,

and the third, most important cycle would be with teachers in charge of the session

delivering with me working alongside them. I would act as an assistant in this last part,

working alongside the teachers in the classroom. I would work on developing the reality of

collaboration in frequently exchanging roles of observer and teacher and building shared

reflections as part of enhancing the reflective element and the confidence to improvise. The

final cycle will be the teacher taking over on their own with my support. This design could

get into the teaching much more, focusing on the teachers' learning rather than research data collection. Finally, it would also allow for the further development of evaluation scales and regular assessments, which are critical for further research projects. The developed evaluation scales and research cycles would reflect the research progress in different stages, to reinforce the key elements of the DCTM and ensure they are embedded in the new project, while also focusing on any teaching issues and challenges, simultaneously, suggesting solutions to the problems as they arise.

As a musician, professional music therapist and music teacher, I have been on this learning journey in pursuit of an ideal mixture of approaches. There were things I learned and difficulties I experienced, but the most valuable thing I found was that all my findings can contribute to the wider research practice in early years special needs education in China. Because of this there will be more young children with autism or children with special educational needs who benefit from this small project.

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Appendix A: Ethic forms

A.1 SSEGM ETHICS SUB-COMMITTEE APPLICATION FORM

SSEGM ETHICS SUB-COMMITTEE APPLICATION FORM

Please note:

- *You must not begin your study until ethical approval has been obtained.*

- *You must complete a risk assessment form prior to commencing your study.*

- *It is your responsibility to follow the University of Southampton's Ethics Policy and any relevant academic or professional guidelines in the conduct of your study. This includes providing appropriate information sheets and consent forms, and ensuring confidentiality in the storage and use of data.*

- *It is also your responsibility to provide <u>full and accurate information</u> in completing this form.*

1.   **Name(s):Li Hao**

2.   **Current Position: Research Student**

3.   **Contact Details:**

   Division/School   School of Education, University of Southampton, UK

   Email: amandahao_2008@hotmail.com

      lh1e12@soton.ac.uk

   Phone

4.   **Is your study being conducted as part of an education qualification?**

   Yes

5. **If Yes, please give the name of your supervisor**

   Professor Melanie Nind

6. **Title of your project:**

   Introducing Music Therapy Techniques to Early Special Education in North-Eastern

   of China

7. **What are the proposed start and end dates of your study?**

   Starting date: 18th March 2014

   Ending date: 31st Dec 2015

8. **Describe the rationale, study aims and the relevant research questions of your study**

   Rationale

   There are two core objectives to be focused on in the overall research, firstly to explore

   the value of introducing music therapy techniques and the role of music therapy in

   bridging the gap between the needs of autistic children and current programs in special

   education in North-Eastern China. This will include professional perspectives in shaping

   and responding to a music therapy intervention; secondly, to examine the effectiveness

   of music therapy techniques on the spontaneous communication development and

   social skills with young autistic children in special education in North-Eastern, China.

   This will include evaluation of the children's responses.

   Aims

   This research study is an action research project, which aim to explore how music

   therapy techniques can be introduced in the education of young children with autism in

   North-Eastern China to enhance their communication development and their

   programme of education. In order to unfold this primary aim, there are three branches

   needs to focus, firstly, to explore how young children with autism in North-Eastern

   China respond to the introduction of music therapy; secondly, to experiment with the

use of improvisational music therapy techniques with young children with autism in North-Eastern China to identify the musical components showing most promise for enhancing their communication abilities and general educational development; finally, to engage music/education professionals in North-Eastern China in the task of developing an effective set of music techniques that they can use and from which young children with autism can benefit.

Research question: How can music therapy techniques be introduced to benefit the communication development and educational experiences of young children with autism in North-Eastern China?

9. **Describe the design of your study**

This will be an action research project.

The action will focus on the introduction of music therapy techniques. The goal is to bring about improve understanding of how music can be used to help young children with autism in tandem with bringing about beneficial change for young children and the adults communicating with them and teaching them.

- The recruitment of experts group (professionals) with expert adults (10-15 people in total) to gain an overview of Special Needs Education information in the North-East region of China. The all focus group professional from mainland China, who will take part in group semi-structured interviews regularly. This will be audio/video-recorded and I will analyse the recording for key information. Any partial transcription will be done by me.

- The recruitment of (10-15 children in total) young autistic children will participate in this study.

- Researcher self – participant in the project

10. **Who are the research participants?**

- Up to 10 professionals will participates in this research project, who are all adults (aged 18+), heads of Special needs schools, staff from rehabilitation centres, and

those assisting autistic children for educational training and other therapeutic treatment,   including university professors, special school music teachers, early year experts, and medics with expertise in autism.

- Up to 15 children with autism play important roles in the project, which major impaired in the communication ability.

- Researcher/music therapist participates in the study simultaneous involves two roles in this action research project.

11. **If you are going to analyse secondary data, from where are you obtaining it?**

None

12. **If you are collecting primary data, how will you identify and approach the participants to recruit them to your study?**

Experts group (professionals)

- Identified through the local organisations and schools where they have important contributions to the autism teaching involvements in the focus groups.

- Approached via an introductory 'recruitment' letter – an example of which is attached with full information about the study.

Young children with autism

- Identified through the school database and focus group suggestions list.

- Approached via an introductory 'recruitment' letter to their parents, which is attached with full information about the whole study.

There will be an intervention letter to invite people joint the research project. In addition, the research will give the details of explanation regarding the research purpose and anticipated outcomes.

Researcher **self reflection**

13. **Will participants be taking part in your study without their knowledge and consent at the time (e.g. covert observation of people)?   If yes, please explain why this is necessary.**

    N/A

14. **If you answered 'no' to question 13, how will you obtain the consent of participants?**

    Experts

    - Initial consent will be sought via 'recruitment' letter, to be followed up with the attached consent form.

    Young children with autism

    - Initial consent will be sought via recruitment letter to their parents, to be followed up with the attached consent form.

    Researcher self

    - Researcher self as an active participant in this action research project

    Please see the attachment of a template consent form

15. **Is there any reason to believe participants may not be able to give full informed consent?   If yes, what steps do you propose to take to safeguard their interests?**

    As part of this study, the participants of young children with autism, who are not be able to give full informed consent. To keep the rights of these children, I will propose the parent consent form to safeguard their interests. It is will be the first step to gain the parents' consent for commencing this project and reiterated at the producer of the study.

16. **If participants are under the responsibility or care of others (such as parents/carers, teachers or medical staff) what plans do you have to obtain permission to approach the participants to take part in the study?**

This research project will involve with young autistic children under age of eight years old, who will unable to sign any documents or paper, the permission to approach these participants to take part in the study, I will gain the permissions from both school/community and their parents.

- Initial step, it is essential to obtain the permission from the school/local community via the 'recruitment' letter for each young child with autism, who attending the school/community programme

- Secondly, to gain the parents' consent via designed parent consent form and will be collected before the research started.

17. **Describe what participation in your study will involve for study participants. Please attach copies of any questionnaires and/or interview schedules and/or observation topic list to be used**

Experts groups (professionals)

4-6 audio/video (it will divided into 2 cycles, each cycle consist of focus group meeting of 2-3) will be recoded within semi-structured interview and lasting approximately one hour.   Interviews will be transcribed by me only. They also emerging from previous analysis of the interviews information and informing a second analysis.

During this the focus group, participants will be welcomed, made comfortable and invited to discuss in turn, up to 7 questions, which they will have seen in advance. Their discussion will be audio-recorded. The questioning route will not cover over sensitive topics. The topics will be:

1. General picture of special needs education in China North –East region, last 30 years as well as current situation/status.

2. Key mile stone of special needs education

3. What special needs education system is like? What is special needs education regulation/policy? How is Special Needs Education curriculum designed?

4. When autism was officially recognised? What kind of intervention people use? Any change since autism was recognised? Significance issues identified? How professional diagnosis autism?

5. Arguments about special needs education or inclusive school education

6. Existence of music therapy in North-East region of China

7. How Special Needs Education/professional Music Therapy people trained in Liaoning.

18. **How will you make it clear to participants that they may withdraw consent to participate at any point during the research without penalty?**

This will be made dear during the provision of information at the consent process. At the conclusion of the workshop the participant will be informed that it has been completed and asked whether they are still happy for the conversation to be used as part of the research. A local point of contact will be established for the individual to contact if they decide at a later date that they would prefer to withdraw their consent so that this opportunity is accessible to them and the research can be informed.   In addition, it is also convinces for participants contacting the local point if the researcher overseas in order to finalising the research project. However, individual participants can contact researcher freely at all time and researcher will contact participants regularly during the whole period time of the research project.

19. **Detail any possible distress, discomfort, inconvenience or other adverse effects the participants may experience, including after the study, and you will deal with this.**

None anticipated. The recording could be paused on request or in case of problems.

20. **How will you maintain participant anonymity and confidentiality in collecting, analysing and writing up your data?**

Experts group (professionals), as ethical concerning of anonymity is not just an ethical issue, but also a legal issue. The researcher will use of pseudonym participants names

while writing up the data, particularly in this project. Furthermore, professionals will have the option to edit or censure their interview transcripts or to engage in confidential dialogue with project researchers at their request. Aside from anonymous quotes, the data will only be available to the research team.

Young children with autism even more sensitive issue. Researcher will use of pseudonym participants names while writing up the data, particularly in this project. Aside from anonymous quotes, the data will only be available to the research team.

21. **How will you store your data securely during and after the study?**

   All data from focus group interviews, and teaching observations/recordings will stored electronically within the password protection and stored on a laptop and backed up on a secure online location according to university policy.   The password will only be known to the researcher and supervisor.   The laptop will be either in the direct supervision of the researcher or locked up at all times during the study.

   Paper records will be kept to a minimum during the study, and will be kept in a locked location when not in use or while being transported.   Personal information (names, no other data) will only be included on printed information where it is essential (e.g. consent forms or interview schedules) and this will be either scanned for secure electronic storage and destroyed, or placed in locked storage, immediately after use.

   After the study only electronic records of personal data will be retained and stored securely as above.

22. **Describe any plans you have for feeding back the findings of the study to participants.**

   Participants will be offered the opportunity to receive a summary of findings following the research, which may be provided by email either directly to the participant or to an NGO, employer or other third party that they identify or through which contact with the individual was made.   Alternatively, they may request a telephone call to discuss the findings with the researcher following the study by arrangement.

23. What are the main ethical issues raised by your research and how do you intend to manage these?

As the research project will take place in real world circumstances, involve human participants, especially young autistic children, and the findings will be published, it is necessary that ethics approval is sought. Within the action research project, live observation and video observation will be utilised, it is therefore a potential ethical problem in this action research project may arise due to the unfolding nature of the qualitative research process. Because action research is never fully planned in advance, the researcher has not always had the opportunity to think through and resolve potential ethical problems that may arise in the process of conducting the study, so the researcher will need to solve ethical dilemmas while the study is in progress. The ethical responsibility for research subjects rests ultimately with the researcher.

24. Please outline any other information you feel may be relevant to this submission.

N/A

A.2 Participant Information Sheet

Participant Information Sheet

Study Title:

Study of Autism/Special Needs Education – Focus Group with Adults

Researcher: Amanda Li hao   **Ethics number**: 1S

Please read this information carefully before deciding to take part in this research. If you are happy to participate you will be asked to sign a consent form.

What is the research about?

The purpose of this research workshop is to gain the explanations and supply general information of how special needs education has developed in China (North-East region of China in particularly) over the last 30 years. It will provide a foundation for my research and give all readers a holistic picture of Chinese special needs education. The project overall is about developing an intervention involving music therapy for young children with autism n North-East region of China.   You will be given the questions in advance and asked to discuss your knowledge and views.

Why have I been chosen?

The participants in this workshop are all adults (aged 18+), heads of Special needs schools, staff from rehabilitation centres, and those assisting autistic children for educational training and other therapeutic treatment,   including university professors, special school music teachers, early year experts, and medics with expertise in autism.

What will happen to me if I take part?

If you agree to take part, we will arrange to meet at a time that is convenient to you, it will not cost you anything to take part.   Once you have given your consent to take part, we will have a group discussion, which will probably take about two hours, about your experiences of Special Needs Education in North-East region of China. The conversation will be recorded

and I will later analyse the main themes to provide background information for my doctoral thesis.

Are there any benefits in my taking part?

I hope that you will find taking part an interesting experience.   The results of this workshop will benefit special needs children, particularly autistic children, as well as SND professionals. It may be useful to health professionals who want to improve the experience of treatment for children with autism in the future. There is very little research that explores the experiences of educators from the North-East region of China.

Are there any risks involved?

There are no real risks to being involved and you are not obliged to talk about any experiences you feel uncomfortable discussing or find distressing.

Will my participation be confidential?

Confidentiality is very important in this project. The recording and any documents will be stored on a password protected computer so that they cannot be accessed by anyone else. Information will be kept safe in line with UK laws (the Data Protection Act) and University of Southampton policy.   In addition, anonymity as a vehicle via which confidentiality is 'operationalised'. Researcher will not store subjects name and addresses on hard drives, using identifier codes and store list of subjects and their codes in a locked cabinet.

What happens if I change my mind?

You have the right to withdraw at any time and this will not have an effect on any of your rights.

What happens if something goes wrong?

If you are unhappy with the way the research is conducted at any time you may contact Head of Research Governance Dr. Martina Prude M.A.Prude@soton.ac.uk

Where can I get more information?

Research Governance Office

George Thomas Building 37

Room 4055

University of Southampton

Highfield

Southampton SO17 1BJ

rgoinfo@soton.ac.uk

Where can I get more information?

A.3 Consent form

CONSENT FORM

Study title:

Researcher name:

Ethics reference:

Please initial the box(es) if you agree with the statement(s):

I have read and understood the information sheet and have had the opportunity to ask questions about the study.

I agree to take part in this research project and agree for my data to be

I understand that my responses will be anonymised in reports of the research

I understand my participation is voluntary and I may withdraw at any time

Data Protection

I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will only be used for the purpose of this study.

Name of participant (print name)………… …………………………………………

Signature of participant…………………………………………………………..

Date…………………………………………………………………………

A.4 Informed parental consent form

INFORMED PARENTAL CONSENT FORM

PURPOSE OF STUDY:

Your child is being asked to participate in a research study on music and communication training in children with Autism Spectrum Disorders (ASD). The purpose of this study is to explore how the music therapy techniques in singing and instrumenting will impact the communication and language in children with ASD. The study will examine the effect of music therapy as part of developmental communication and language training in the current special education program of children with ASD.

PROCEDURES:

The researcher will visit the school/community where your child is currently attending. At your child's convenience and daily schedule of the school/community program, the researcher will arrange to meet your child at a room at the school for all subsequent research procedures.

Your completed consent form will give permission to the researcher, Li Hao (1) to use your child's standardized music therapy assessment scores and (2) to access your child's score on autism rating scale and (3) to ask your child's teachers /caregivers about his/her use of musical and daily behaviours. All screening procedures for your child will be completed by the researcher.

Your child will be randomly assigned, like the flip of a coin, to one of three training conditions: western music therapy program, combining music therapy program or pure Chinese music therapy program. He/she will be assessed individually. On the first two weeks of the exploring session, the researcher will run a pre-assessment session to your child, and two practice trials session (songs/music generally used in music therapy sessions) will be

given to the child prior to the pre-assessment. The pre-assessment will use target songs that are functional vocabularies. The pre-assessment will be a form of fill-in-the blank, intra-children's musical characteristic and the ability of verbal communication. The pre-assessment will include three target songs (popular tune used worldwide) with all children, all phrases that are structured with no lyrics. The researcher will sing the first part of each phrase, and then leave off the space. A co-researcher therapist will also be presented with each space. The objective of the procedure in the pre-assessment will be to prompt your child to fill in the space with either vocal or instrumental at the end of a phrase upon hearing the first part of the phrase. The pre-assessment will take approximately 20-30 minutes depends on the child respond.

Your child's music therapy sessions during the project will be video-taped.

Researcher and independent observer who specialize in treating young children with disability will responds for data coding. The researcher and independent observer will watch each video tape one time and will evaluate your child's session. The results of the study for your child will be shared with you.

RISKS:

No foreseeable risks or discomforts are anticipated for your child by participating in this study.

BENEFITS:

No benefit can be promised to your child by participating in this study. However, there is a hope that the children will enjoy music as well as the researcher will benefit from the study about increasing the understanding of whether the combined music therapy and musical intervention techniques can effectively address the needs of Chinese children diagnosed with autism. Furthermore, this action research project will be providing more resources for the field of special education in China. From a Chinese music therapist and music teacher perspective, this new program and intervention are more likely to be accessible to Chinese researchers and scholars in the field of music therapy.

ALTERNATIVES:

You have the alternative for your child to not participate in this study. During the study, you may stop your child's participation at any time. You and your child have the right to refuse to participate in the study and nothing will happen to you and your child as a result. Your child's care at their school/community center will not be affected.

COSTS:

No costs are anticipated for you as a result of participating in this study.

PAYMENT TO PARTICIPANT:

No monetary payment will be given for participation in this study.

CONFIDENTIALITY:

The researcher will consider your child's records confidential to the extent permitted by law. The U.K. Department of Health and Human Services may request to review and obtain copies of these records. Your child's records may also be reviewed for audit purposes by authorized University of Southampton Graduation Office or other agents who will be bound by the same provisions of confidentiality. The researcher, Li Hao has authorized access to your child's records of pre-post music therapy assessment result by the agreement with your child's school/community centre. These records will be kept in electronic format (e.g., data base, PDAs, etc) and paper format.

The collected data will not hold any information that will identify your child. Data will be closed by special number rather than by your child's name. Hard copies or discs containing your child's records will be secured in a locked file cabinet to which the researcher, Li Hao and her supervisor, will have the only access. Your child's speech during the pre-and post-tests will be video-taped. The video tape will be kept by the researcher, Li Hao until the research project is completed.

RIGHT TO WITHDRAW:

Your agreement for your child's participation is voluntary; you and your child have the right to withdraw from this study. If you do not want for your child to participate or do not follows the procedures, the researcher can also remove you from the study without your consent.

OTHER PERTINENT INFORMATION:

Professor Melanie Nind will gladly answer any questions you may have concerning the purpose, procedures, and outcome of this project. If you have any question concerning the research study or your child's participation in this study, please contact Hao Li, MM, MT-BC at lh1e12@soton.ac.uk. If you have any question about your child's right as a research participant in this research, you can contact University of Southampton, Human Subjects Research Office at

PARTICIPANT AGREEMENT:

I have read the information in this consent form and agree to allow my child to participate in this study. I have had the chance to ask any questions I have about this study, and they have been answered for me. I am entitled to a copy of this form after it has been read and signed.

Name of Your Child

Name of Parent(s) or Caregiver

_____   _____

Signature of Parent(s) or Primary Caregiver   Date

_____   _____

Signature of person obtaining consent   Date

Videotaping

By signing this section you give consent for your child to be video-taped during this study.

_____   _____

Signature of Parent or Primary Caregiver   Date

_____   _____

Signature of person obtaining informed consent   Date

A.5 Inform Letter

Li Hao MM, MT

University of Southampton

School of Education

MPhil/PhD Program

Email: amandahao_2008@hotmail.com

Lh1e12@soton.ac.uk

Feb 3, 2014

Dear Parents,

Your child is invited to participate in an Action research project for development of communication through music in children with Autism Spectrum Disorders (ASD).

The project is designed to bring about improved understanding of how music can be used to help children with autism in tandem with bringing about beneficial change for the young children and the adults communicating with them and teaching them. Furthermore, in the task developing an effective set of music techniques that local professionals can used and from which young children with autism can benefit.

As part of this project, your child will be assigned to one of three different groups' conditions western music therapy program, combining music therapy program or pure Chinese music therapy program. The videotapes will be watched by researcher and independent observer who specialize in treating young children with disability, including children with autism. They will also respond for data coding. The researcher and independent observer will watch each video tape one time and will evaluate your child's session. In addition, other professionals

(focus group) will also watch selected videos at the each action cycles. The results of the study for your child will be shared with you. Ultimately, the results should help determine whether music techniques are effective involvement method for the development of communication in children with ASD.

If you would like for your child to participate in this project, please sign the attached consent form and return it to your child's teacher. If you would like to discuss this project with me in greater detail, please do not hesitate to contact me. Thank you.

Sincerely,

_____

Li Hao, MM, MT

Appendix B: Jinyan's analysis on Intensive Interaction and Nordoff and Robbins in cycle 1

B.1 Jinyan's analysis on Intensive Interaction in cycle 1 (1-8 sessions)

INTERACTION DAILY RECORD

Interaction partners: **Jinyan, Xiaoqiu and Li**

Date and time: **1ˢᵗ session**

Place and situation: **5ᵗʰ floor, Community centre, Shenyang**

What happened? **(describe the sequence)**

Free playing with the child

Music singing

Saying goodbye

What was significant? **(new, different, possibly progress)**

Jinyan was playing with his shoes while listening to the music.

How did it feel? **(my response and performance)**

I believed that Jinyan's performance showed, he was capable to share his attention if he attracted, otherwise, it chaotic.

Other comments

I need to clearly separate my wishes and the session aims when I teach next time. Because the priority aim for Jinyna is helping with his language communication, not models a perfect boy.

INTERACTION DAILY RECORD

Interaction partners: **Jinyan, Xiaoqiu and Li**

Date and time: **3ʳᵈ session**

Place and situation: **5ᵗʰ floor, Community centre, Shenyang**

What happened? **(describe the sequence)**

Train music via Imitation and Turn taking

Musical instruments playing

Saying goodbye

What was significant? **(new, different, possibly progress)**

Jinyan was randomly playing the instruments out my plan, but he showed his ability of playing and positively creativity as an autistic child.

How did it feel? **(my response and performance)**

I believed that Jinyan needs more encouragement to explore the things and seek out information.

Other comments

Jinyan was on a happy mood and his eye contact was regularly with me during the Session, it may affect by the holiday mood.

INTERACTION DAILY RECORD

Interaction partners: Jinyan, Xiaoqiu, Li

Date and time: 4th session

Place and situation: 5th floor, Community centre, Shenyang

What happened? (describe the sequence)

Drum playing

Musical instruments playing

Saying goodbye

What was significant? (new, different, possibly progress)

Jinyan was playing the drum with changing positions, slow and quick motions.

How did it feel? (my response and performance)

I felt that Jinyan liked upbeat music by showing his interesting and positively responsiveness on piano music.

Other comments

Jinyan was exciting and he showed different expression with different musical motions.

INTERACTION DAILY RECORD

Interaction partners: **Jinyan, Xiaoqiu, Li**

Date and time: **5th session**

Place and situation: **5th floor, Community centre, Shenyang**

What happened?   (describe the sequence)

Greeting music

Improvisation with Jinyan's body movements

Saying goodbye

What was significant?   (new, different, possibly progress)

Jinyan was playing the drum with changing positions which similar with previous session, stop and play patterns.

How did it feel?   (my response and performance)

Jinyan showed his interests on the upbeat music with changing musical patterns such as, *If You Happy You Know It* in the different musical patterns played by Li on the piano.

Other comments

Session plan needs to carefully design, it needs to avoid complication and it is not a time to challenge him yet with complex musical patterns.

INTERACTION DAILY RECORD

Interaction partners: **Jinyan, Xiaoqiu and Li**

Date and time: **7th session**

Place and situation: **5th floor, Community centre, Shenyang**

What happened?   **(describe the sequence)**

Greeting music

Improvisation with children's rhymes

Saying goodbye

What was significant?   **(new, different, possibly progress)**

Jinyan and I were holding hands together to chant the rhymes.

How did it feel?   **(my response and performance)**

Jinyan liked music and enjoyed my session which showed with his very relaxed body
language.

Other comments

Improvisation with the children's rhymes seemed good for Jinyan at this stage.

INTERACTION DAILY RECORD

Interaction partners: **Jinyan, Xiaoqiu and Li**

Date and time: **8ᵗʰ session**

Place and situation: **5ᵗʰ floor, Community centre, Shenyang**

What happened?   **(describe the sequence)**

Merge the contents for the last session

Instrumental playing with clapping, stamping and reciprocal playing

Saying goodbye

What was significant?   **(new, different, possibly progress)**

Jinyan closed his eyes with smile while playing the drum. I played variety pattern with the children's rhymes, and he had no problem to follow.

How did it feel?   **(my response and performance)**

I felt exciting by Jinyan's responsiveness via his musical reactions. My own teaching seemed more smoothed than the very beginning.

Other comments

His responsiveness encouraged me and his enjoyment, particularly, his shyness with covering eyes.

B.2 Jinyan's analysis on Nordoff and Robbins in cycle 1 (first sessions)

SCALE 1.   CHILD- THERAPIST RESTIONSHIP in COACTIVE MUSICAL EXPERIENCE

Child_____Jinyan_____DOB _____Date_____session____1____

Therapist ___Li____rater ___Li and Xiaoqiu____Rating Date___29th Dec_____

P	R	LEVELS OF PARTICIPATION	QUALITIES OF RESISTIVENESS
(7) /		Stability and confidence in Interpersonal musical relationship	Through identification with a sense of accomplishment and well-being Resists own regressive tendencies
(6) /		Mutuality and co-creativity in the Expressive mobility of music	a) Crisis-toward resolution b) No resistiveness.
(5) /		Assertive coactivity. Working relationship. Self-confident purposefulness.	Preservative compulsiveness Assertive inflexibility. Contest
(4) /		Activity relationship developing.	Perversity and/or manipulativeness
(3) 0.5 /		Limited responsive activity.	Evasive defensiveness.
(2) 1 / 2		Wary ambivalence. Tentative acceptance.	Anxious uncertainty. Tendency toward rejection.
(1) 1 / 3		Unresponsive non-acceptance.	Apparent obliviousness. Active rejection. Panic/rage reaction when pressed.

Appendix C: Yujing's analysis on Intensive Interaction and Nordoff and Robbins in cycle 1

C.1 Yujing's analysis on Intensive Interaction in cycle 1 (1-8 sessions)

INTERACTION DAILY RECORD

Interaction partners: **Yujing, Xiaoqiu and Li**

Date and time: **first session**

Place and situation: **Fifth floor, Community centre, Shenyang**

What happened?   (describe the sequence)

Played greeting music;

Played instruments;

Said goodbye.

What was significant?   (new, different, possibly progress)

Yujing accepted my physical assistance which seldom happened with other staff in the centre. It was possible that Yujing enjoyed this session in listening.

How did it feel?   (my response and performance)

I felt happy that finally Yujing found his instruments with our guidance.

Other comments

It might encourage him more to explore the things and seek out information. There was one thing I need to remember, which is more patience in waiting for response.

INTERACTION DAILY RECORD

Interaction partners: Yujing, Xiaoqiu and Li

Date and time: session 3

Place and situation: Fifth floor, Community centre, Shenyang

What happened? **(describe the sequence)**

Verbally talking with the boy and free exploration;

Playing the greeting music;

Playing the instruments;

Saying goodbye.

What was significant? **(new, different, possibly progress)**

Yujing's attention was gone because of the distraction from a teacher coming into the classroom without asking. However, it was a good sign that Yujing's second half of the session was a return to our team work again.

How did it feel? **(my response and performance)**

It initially showed that Yujing liked reed horn and played it with good breath control when I gave him enough guidance via body language.

Other comments

With my assistance, he played well and almost on time with the time signature. He responded to my verbal instructions accordingly. There is one thing I need to remember, which is more patience in waiting for response.

INTERACTION DAILY RECORD

Interaction partners: **Yuijing**

Date and time: **4th session**

Place and situation: **fifth floor, Community centre, Shenyang**

What happened?   (describe the sequence)

Instruments playing

Multiple tasks adding in

Musical story - *Joshua Fought the Battle of Jericho*

Saying goodbye

What was significant?   (new, different, possibly progress)

His imitation ability was better than I learned from his teacher. His concentration faded away when the multiple tasks were added in. however, the reed horn brought him back.

How did it feel?   (my response and performance)

I felt that he enjoyed this session when the level of music fit him well, otherwise, his attention was gone quickly.

Other comments

His ability of understanding and cognition were better than I had previously learned. Also, the level of music affected his performance.

INTERACTION DAILY RECORD

Interaction partners: Yuijing, Xiaoqiu and Li

Date and time: 5th session

Place and situation: fifth floor, Community centre, Shenyang

What happened?   (describe the sequence)

Instruments playing with greeting music

Piano playing with drum imitation

Saying goodbye

What was significant?   (new, different, possibly progress)

His imitation ability was better than I learned from his teacher, particularly with the drums and reed horn.

How did it feel?   (my response and performance)

I felt that he enjoyed this session when we played drum and piano together.

Other comments

His imitation ability and rhythmic playing are getting better with practice.

INTERACTION DAILY RECORD

Interaction partners: **Yuijing, Xiaoqiu and Li**

Date and time: **6th session**

Place and situation: **fifth floor, Community centre, Shenyang**

What happened?   **(describe the sequence)**

Instruments playing with greeting music

Piano playing with drum imitation

Saying goodbye

PS: there was another early year teacher who joined in only for this session.

What was significant?   **(new, different, possibly progress)**

This session was chaotic.

How did it feel?   **(my response and performance)**

I felt making a mistake that I let Yujing's mother cross the boundary. It was hard to treat the delicate path between controlling and respecting.

Other comments

Yujing might need more directive leading in this situation with many people in the session.

INTERACTION DAILY RECORD

Interaction partners: **Yuijing, Xiaoqiu and Li**

Date and time: **7th session**

Place and situation: **fifth floor, Community centre, Shenyang**

What happened?   (describe the sequence)

Instruments playing with '*If you're Happy you Know it*'

Piano playing with drum imitation

Saying goodbye

What was significant?   (new, different, possibly progress)

This session was better than the last session.

How did it feel?   (my response and performance)

I felt that the level of his understanding of verbal instruction and musical activity improved.

Other comments

Yujing did not play, but he calmed and getting into the music mood gradually by showing his body and facial changes.

INTERACTION DAILY RECORD

Interaction partners: **Yuijing, Xiaoqiu and Li**

Date and time: **8th session**

Place and situation: **fifth floor, Community centre, Shenyang**

What happened?   **(describe the sequence)**

Instruments playing with '*Catch the beat*'

Piano playing with drum imitation

Saying goodbye

What was significant?   **(new, different, possibly progress)**

We challenged him with his language communication and verbal practice through musical turn-taking and imitation.

How did it feel?   **(my response and performance)**

I felt that the level of his language communication and musical activity of turn-taking and imitation activity changed.

Other comments

Repetitive practicing suited him better with this music.

Appendix D: Multimodal analysis forms for Yujing and Jinyan

D.1 Yujing's multimodal analysis forms in session 3, 4, 5, 6

Multimodal analysis		Modes of musical communication	Mode of gaze	Modes of gesture	Session format & series
	Li's (my) action	I played reed horn and sat in front of Yujing. I asked Yujing verbally to play the reed horn in different length. I was modeling to blow the reed horn twice.	I looked at Yujing's movement intensively, particularly, when I hold the reed horn and he blows it.	I hold the reed horn and gave him her arm to support him lean forward to reach the instrument.	Session 3 Individual
	Yujing's action	Yujing sat on the chair and sway his body when he waiting. He looked at my hands with holding the reed horn. He smiled and stretching the arms to show his impatience emotions.	There was only thing to attract Yujing's eyes after he gets in the room. He really wants to play freely with blowing reed horn.	He blows the reed horn and briefly touched drums with sway's body.	
	Actively playing together	We were really playing together with reed horn blowing.	Yujing looks at me steadily while I hold the reed horn and his eyes follow my hands up and down.	I support Yujing's shoulder when we play together the reed horns.	

Figure 4.5-3 DCTM Video session analysis

Yujing's session (3)   on 17th Dec 2014

Timeline   10:05   10:36   11: 06

Yujing

Facial expression   entirely devoid of expression--with big open eyes

Direction of gaze   Piano --changing to drums and reeds horns

Playing drums   hands on the drum-------------   with basic beat--playing on the counting rhythm

& reed horns

Li

Piano &   playing the music and singing the tune with the particularly words with the third sounds

Verbal

Facial expression   Smiles ---

Yujing

Longer looks   about half minute look at me playing on the drum

Listening to the music   he kept playing his drum and same time Yujing was using the other hand to blow the reed horn

&

Li   Interaction   we were in one rhythmical pattern, but Yujing seemed more on his own playing with the reed horn

Narrative and Reflective notes

	Early years teachers	Researcher	Focus groups
Field notes	He was briefly communicating with the therapist in the session. It seemed like he liked the reed horn very much and did connect with the music and the music therapist. Yujing explored different musical instruments which were displayed in the room and chose the reed horn. He accepted the therapist's helping when offered in the second half of the session with playing the reed horn.	I started with blowing the reed horn with different lengths and tried to attract Yujing. However, he automatically blew the reed horn very loudly. It was such fun for him. Yujing needs more control with his breathing regarding his pronunciation problems, therefore I asked him to play in a pattern instead of free playing. I tried different time signatures rhythm and finished the session with the playing together the reed horn.	
Reflection journal	Yujing responded to the new instrument playing naturally. For example, he picked the instrument up and blew it without any verbal instruction. He likes music in general, but he did not play the drums with us, his only focus was on the reed horn playing. His attention sharing lasted longer with this session.	Yujing's reactions in the reed horn playing were good enough to show his ability of sharing attention. With my assistance, he played well and almost on time with the time signature. He responded to my verbal instructions accordingly. There is one thing I need to remember, which more patience in waiting for response is.	

Multimodal analysis		Modes of musical communication	Mode of gaze	Modes of gesture	Session format & series
	Li's (my) action	I played Nordoff and Robbins music on the piano and saving the space for Yujing to fit in. During the musical interaction, I did not give the verbal instruction, but body language of heading and fingers pointing in order to help Yujing to fit into the music.	I played music and looks at Yujing's movement intensively, particularly, when I stopped playing and pointing out.	I pointed her fingers and nodding her head	Session 4 Individual
	Yujing's action	Yujing sat on the chair impatience after the bell playing. But focus again when we change the instruments to reed horn.	Yujing's eyes carefully looked reed horn again after we changed instrument.	He blows the horns and briefly touched bells.	
	Actively playing together	We were playing in turns via reed horn playing.	Yujing looked at me steadily while I play the piano and his eyes follow my hands up and down.	I gave hints to Yujing by pointing finger and nodding head and his eyes followed.	

Narrative and Reflective notes

	Early years teachers	Researcher	Focus groups
Field notes	He was communicating with the therapist in the most of time during this session. It seemed he did connect with music. He explored different sounds of musical instruments which were displayed in the room, such as hold a bell very closed to his ears and shaking it. He accepted the therapist's helping when offered the physical supporting with bell playing.	Actually, Yujing started this session with playing the bells initiatively. I started to play the musical tune after him plumping the bells. However, he lost concentrations twice during the bells playing and I tried to change the patterns, but there was no significant change. He made eye contact again when I offered him reed horn and his focus back to our musical playing.	
Reflection journal	Yujing has some changes which we could see it during those sessions, particularly, this session when he played reed horn with the therapist in Nordoff and Robbins music. His joint attention is seriously impaired, but in this session, he only has one or two instants we lose the connection with him, therefore, it was a huge step for Yujing.	Yujing's reactions was not surprised me in this session, but I felt encouraging. He showed his level of understanding about music as well as the cognitive ability. Particularly, the moments we lose him, the reason is that he may needs more challenges than I planned. Probably, it was too simple task for him at those moments.	

Yujing's session (4)

Timeline   14:13   14:36   15: 03

Yujing

Facial expression   bend his head down---appeared enjoy in a blowing horn

Direction of gaze   look down to the table ---focusing on the reeds horns

Playing piano   hands on the reed horn---playing the reed horn with musical turn-taking

& reed horns

Li

Piano &   playing the music and singing the tune and leave the spaces for Yujing to fill in

Verbal

Facial expression   Smiles --

Yujing

& Li

Eye contacts   briefly eye contact with me

Listening to the music   he kept playing his reed horn and same time Yujing was blowing reed horn on time

Interaction   we were playing in a pre-composed music tune and Yujing seemed more enjoyed reed horn playing than the activity

Frame-by-frame Figure 4.7-4

		Modes of musical communication	Mode of gaze	Modes of gesture	Session format & series
Multimodal analysis	Li's (my) action	I improvised chords progression on the piano and deliberately addressed on time signatures by playing heavily. During the playing, I played mixed time signatures in order to develop his attention level.	I played piano and looked at Yujing's playing on the drum and reed horn carefully, especially, when I changed musical patterns.	I nodding her head and wave her arms when the music changes.	Session 5 Individual
	Yujing's action	Yujing sat at the chair first when he played drum and reed horn. He moved around in the room with verbal instruction later on.	Yujing's eyes focus on the piano and particularly when the music played heavier.	He plays drums, reed horn and briefly touched drums	
	Actively playing together	We really reciprocal played via reed horn playing.	Yujing looks at me steadily while I stopped or played heavier and his eyes focus on the different motives.	I supported Yujing to blow the reed horn when they played together	

Narrative and Reflective notes			
	Early years teachers	**Researcher**	**Focus groups**
Field notes	He was not communicating with either teaching assistant (early years teacher) or therapist in the session. It seemed like he did not like music at all and did not connect with music or the music therapist. He explored different musical instruments which were displayed in the room and tried out each kind. hand-chimes.	I started with musical singing and tried to connect with Yujing. However, he ignored me and explored the musical instruments around the room almost the whole session. I tried different musical songs and finished the session with the rhythmical music. He made eye contact with me a few times when exploring the instruments.	
Reflection journal	It seemed normal for Yujing, who responded to the new things the very first time. For example, new instruments and new style of teaching implemented in his music session, but his responsiveness were still considerable good and shared attention as well. Yujing was really active playing in the music session when he interested.	Yujing's reactions in this session were good and he really enjoyed mini instrumental ensemble. Along with the time went on, he started leading the session for a while. Yujing's movements were accompanied by our music and he showed his musical understanding and level of responsiveness in music. His attention sharing was also lasting longer compare with the previous session. .	

Yujing's session (5)

Timeline   00:35   01:36   02: 08

Yujing
- Facial expression   A concentrate looks-------------------------------happily facial expression ---------------------appeared enjoy in the drum playing

- Direction of gaze   look up to the piano ------------------------------focusing on the drum ----------------------------entirely attention on his drum

- Playing piano   hands on the drum--------------------------------------playing the drum with musical turn-taking

  & drum

Li
- Piano &   playing the music and singing the tune and accompanying for Yujing's drum playing

  Verbal

- Facial expression   Smiles --

Yujing
& Li
- Eye contacts   briefly eye contact with me

- Listening to the music   he kept playing his reed horn and same time Yujing was blowing reed horn on time

- Interaction   we were playing in a pre-composed music tune and Yujing seemed leading the musical playing with drum rhythm

Frame-by-frame Figure 4.7-5

Session 7

Multimodal analysis		Modes of musical communication	Mode of gaze	Modes of gesture	Session format & series
	Li's (my) action	I played the piano and given the verbal instruction on counting activity. At the same time, I was nodding my head to Yujing when it was his turns. During the playing, I was intentionally to save some time to wait yujing to respond.	I was playing on the piano and looked at Yujing with his movements on his hands and feet. Especially, I waited to see his reaction after my nodding head.	I exaggerate the smile and gestures of playing, such as the lifting arms and nodding head.	Session 7 Individual
	Yujing's action	Yujing played happily with a smile on his face. Particularly, he gave a heavy play after my hint as well as entirely attention.	Yujing focus on my piano playing. Very often he looked up when I nodding her head.	He clapping his hands and drums concentrate.	
	Actively playing together	We mutually played together via drum and piano interacting.	Yujing looked at me occasionally with his body movements in pattern with drums playing.	I supported Yujjing's drum playing on the steady beats.	

Narrative and Reflective notes

	Early years teachers	Researcher	Focus groups
Field notes	Yujing was communicating with the therapist with actively body movement on this session. It seemed he enjoyed playing and physical movements accompanying by the therapist's piano music. He moved around room without any assistance successfully. Yujing interested in playing turn-taking with me in the second half of the session .	I started with instrument playing and tried to encouraging Yujing to play. However, he seemed that he wanted to lead. He was stand up doing some physical movements at the second half of the session. I followed and supported him with the rhythmical playing. He made eye contact with me regularly after he smoothly fill in and shout out the rhythm patterns.	
Reflection journal	It happened naturally for Yujing, who responded to the therapist's playing and there were some things that he did well in this session. For example, therapist asked him to stand up and made some movements, and then he excited walking around, also to blow the reed horn at the same time. It seemed that the musical turn-taking activity impact on his joint attention.	Yujing's reactions in this session were showing his talent. I was surprise that Yujing could complete the task on his own without any helping. For example, walking around the room with blowing the reeds horn which fill in the musical space. This session goal was designed particularly a little harder than used to. It might need to rethink the level of his session design in order to fit him properly.	

Figure 4.6-7 Thematic analysis in field notes and Journals

Jinyan's session analysis (session 3rd)   on 6th Jan 2015

Timeline   10:03   10:35   11:00

Facial expression   Smile ------------------------- Eyes open with big smile---------------------------- Smiley face with happy unreadable sounds

Direction of gaze   Shakers ---------------------- shakers and chairs --------------------------------- Li and drum

Jinyan | Playing shakers   holding shakers with both hands------ with sound-------------------------------------- playing patterns

& chairs

Li | Drum & Verbal   playing the music and singing the tune with numerical counting

Facial expression   Smiles ---

Eye contacts   about half minute eyes contact between Jinyan and I

Jinyan | Listening to the chanting   he stopped playing shakers suddenly, then started again with playing shakers and chairs

& Li | Interaction   Jinyan played shakers and emphasized the 3 and 4 beats when I played drum and counted

Frame-by-frame Figure 4.8-3

D.2 Jinyan's multimodal analysis in session 3

Multimodal analysis		Modes of musical communication	Mode of gaze	Modes of gesture	Session format & series
	Li's (my) action	I played the drum and count 1 to 4 in order to match the Jinyan's rhythm. At the same time, I emphasised 3 and 4 beats with calling his name. During the playing, I was intentionally to save some time to wait Jinyan to respond.	I was drumming and looked at Jinyan's playing shakers and chairs. Especially, I waited to see his reaction when I called his name during the playing.	I exaggerate the smile and gestures of playing, such as the lifting arms and big smile.	Session 3 Individual
	Jinyan's action	Jinyan played shakers for a while, then stopped with happy smile. Started again with pattern of shakers and chairs continuously playing in turns. He paid attention when Li called his names in the middle of game.	Jinyan focus on his shakers and his chairs while he played. Very often to look up when I called his name.	He played shakers and chairs concentrate.	
	Actively playing together	We mutually played together via drum and shakers/chairs interacting.	Jinyan looked at me occasionally with his shakers playing, soon after steadily swapped looks while he played in pattern with shakers and chairs	I supported Jinyan's playing with drum on the steady beats and we played together on time.	

Narrative and Reflective notes

	Early years teachers	Researcher	Focus groups
Field notes	Jinyan was communicating with the therapist in the second half of this session. It seemed he enjoyed playing and did connect with music and the music therapist. He played musical instruments which were not in the plan and tried out successfully. He interested in playing shakers and chairs as well as attracted by the therapist's calling -responding game in the second half of the session .	I started with drum playing and tried to connect with Jinyan. However, he seemed that he wanted to lead the playing with his pattern at the second half of the session. I followed and supported with the rhythmical drumming. He made eye contact with me regularly after he was playing in patterns. It was happy mood which may affect by the holiday breaks or others unknown.	
Reflection journal	It happened so quick for Jinyan, who responded to the new things. For example, the new teacher, new instruments and new style of playing. There were some things that he did well, such as the responding to the drumming and calling his name which rarely happened in other classes. He likes music in general, also it seemed that the instrumental ensemble impact on his joint attention.	There were some moments in Jinyna's third session to show his talent. Such as he created a new pattern to play and established a rapport with the therapist and early years teacher for a moment. Even though, he played instruments out of my plan, but he showed me his ability of playing and creativity which are so important for an autistic child. Therefore, I need to encourage him more to explore the things and seek out information.	

Jinyan's session (4)   on 11th Jan 2015

Timeline   12:03   12:25   13:00

Jinyan

Facial expression   smiley face -------------------   laughing with head lean back ------------------------laughing with happy sounds

Direction of gaze   Drum -----------------------   up and down with drum's changing -----------------------drums and me

Playing Voice   hands on the drum--------------   with fingering '1' and '2'----------------------------------playing drum with counting

& drum

Li

Piano & Verbal   playing the drum and singing the tune with chanting numbers

Facial expression   Smiles and laughing all the way--------------------

Jinyan
& Li

Regular eyes contact   regularly looked at me with drum playing went along--

Listening to the music   he played stopped playing his shoes without any movements when started to play the piano

Interaction   he random played on the drum and matched music unevenly

Frame-by-frame Figure 4.8-4

		Modes of musical communication	Mode of gaze	Modes of gesture	Session format & series
Multimodal analysis	Li's (my) action	I played drum as well as calling Jinyan's name and saving some space in order to wait his responding. During this turn-taking playing, I played drum according to the details of Jinyan's reaction, such as frown, smile ect.	I looked at Jinyan's movement with drum playing intensively, especially, when I was calling Jinyan's name.	I exaggerated the gestures of drum playing and smiling face. For example, the lifting arms, surprising facial expression ect.	Session 4 Individual
	Jinyan's action	Jinyan responded to the drum beat actively at this moment. He paid attention into this mutual playing with relaxed state. For example, Jinyan was lifting his arms leisurely free.	Particularly, Jinyan gave a quick look when I called his name.	He played drum and changed body position following my movements with drum.	
	Actively playing together	We build up a trusted relationship by drum playing in turns.	There were regularly eye contacts between Jinyan and I when we were drumming in turns.	I supported Jinyan's playing by waiting for his responding and counting at the same time.	

Narrative and Reflective notes			
	Early years teachers	**Researcher**	**Focus groups**
Field notes	He was connecting and building up a rapport relationship with the therapist in this session. It seemed that he like the way of music being played. Such as changing the drum position during Jinyan's playing. He communicated with therapist by responding to her drum playing and taking turns during the plays. Jinyan indeed showed the sense of trust by lean back his head on therapist's shoulder.	The drum playing really caught Jinyan's attention and connected him via turn-taking in drumming although the beginning the session was not smoothly ran. However, he created his own rhythm in playing and tried to lead us in the playing. I tried to follow up and supported him by hold my playing back in order to give Jinyan's more space. Such as, he gave the instructions in 'slow' and 'quick' motions.	
Reflection journal	It seemed normal for Jinyan, who responded to the new things the very first time. For example, the new teacher, new instruments and new style of teaching. There were some things that he did well, such as the drumming. He likes music in general, but his joint attention impairment is serious problem.	I felt that Jinyan was very relaxed with emotionally and physically. His reactions really showed that as a young autistic child with his understandable behaviours in responding to new things and meeting a new person. However, there was still regret in that I need to prepare more instruments if possible. It might encourage him more to explore the things and seek out more information.	

Jinyan's session (7th)   on 3rd Feb 2015

Timeline   18:10   18:45   19:00   19:40

Facial expression   concentrate looks --------------- smile------------------ look at me with big eyes open----------   smile

Direction of gaze   Me and drum --- lifting arm -------------------------------- feet

Jinyan   Playing Voice   hands on the drum------------ counting sound---stomping feet

& drum

Drum & Verbal   playing the drum and chanting the words with 'drum, clapping hands and stepping feet'.

Li   Facial expression   big Smiles ---

Longer looks   eyes contact last longer than I expected about two and half minute

Jinyan   Listening to the music   he was playing drums, clapping his hands as well as stomping feet with my instruction

&   Li   Reciprocal playing   Jinyan and I were playing fun over this session, particularly this moment, mutual played in drums, body movements

Frame-by-frame Figure 4.8-7

Multimodal analysis		Modes of musical communication	Mode of gaze	Modes of gesture	Session format & series
	Li's (my) action	I played piano and chanted the lyrics in Children rhyme to support Jinyan's basic tempo on drum. During this activity, I did not give him any extra verbal instruction, but exchanged looks with Jinyan with my head nodding to his drum.	I played music same as the last session and looks at Jinyan on the drum intensively.	I wave my hands and nodding my head.	Session7 Individual
	Jinyan's action	Jinyan sat beside of the drums which in half circle after he gets into the classroom. He paid attention to Li's playing at the beginning of the session.	There is only focus for Jinyan at this moment on my playing.	He played drums, tapping the tight with briefly touching his face.	
	Actively playing together	We really communicate via turn-taking in piano and drums playing together.	Jinyan looked at me concentrate when I played piano with chanting.	I supported Jinyan on the drum with his basic beat.	

4.9-7

	Early years teachers	Researcher	Focus groups
Narrative and Reflective notes			
Field notes	Jinyan was particularly communicating with therapist in the session. It seemed he naturally played together with her. He has a little shy by covering his eyes in the second half of the session and showing his trustiness with the music therapist via musical instruments ensemble. Jinyan did not assisted by any of us physically and complete all the objects which pre-planned.	I started with piano playing and chanting which naturally connected with Jinyan. However, Jinyan tried to lead the session which supported by my musical hints. Such as, I slow down the music when Jinyan tried to stop or otherwise. I played two traditional children rhyme which worked well with Jinyan's movements. Such as , music supporting his running, clapping hands ect.	
Reflection journal	It seemed that this was a musical communication class indeed for Jinyan, who responded to the therapist smoothly with drum playing. Also his body movement very relaxed without any stiffness during plays. There was one thing need to mention that Jinyan was smile all the way through this session. It is laugh from his heart. Such as, he smiled when there was nothing happened yet and his hands relaxed to stretch up.	Jinyan's reactions were really into the music when we played together at the instrumental ensemble. We communicated via body language, music as well as verbal sounds. Jinyan was responding to my music and also react with my verbal instructions without any assistance at the most of time. Such as, he sat on the chair properly after we played 'stop and run' activity by my request. I may try next time that I may challenge him more and to see what will happen.	

Appendix E: Examples of Music Interventions

E.1 Intervention II   Singing (chanting) with instruments

Intervention II Singing (chanting) with instruments

Goal areas:

Verbal and physical imitation, self-expression, eye contact, sustained attention and joint attention

Musical experiences:

Playing and responding to a rhythmic communication

This music is composed to practice verbal sounds of 'o, wu, la, mao, etc with the filling the gap with numbers, but proper words. The song example: (insert a music)

Verbal prompts in a rhythmic instrumental playing.

DCTM –drum talk: presenting the musical stimulus that encourages communication between teachers or therapist and children. Rhythm and beats are the abilities that children can feel, hear and play. They are conveyed with the meaning of communicative both in verbal or nonverbal. This activity is more difficult because the children not only sing some verbal sounds, but also to control their physical movement associate with the verbal.

Strategies in DCTM:

DCTM – drum talk begins with the nonverbal stimulus and requiring drum playing as the response. Drums talk or drum and a piano interact is form of nonverbal communication. Leaving the music space is positive reinforcement for the child to respond or communicate via instruments or verbal sounds. Children with autism might encourage responding very quickly because of the musical indication and temptation. Implementing this activity, a child encouraged with musical stimulus or other item in his/her communication.

Pair the teaching instruction and direction with chanting. The teacher or therapist starts singing a melody without lyric which less anxious about the situation of children's communication impairment. The teacher or therapist can attract children's attention with the strong beat while singing. If the children cannot respond to the sing by verbal or instrumental playing on the target of the musical space, a certain times of repetitions should provide more opportunity for children to respond.

Two or three times of repetitions, when the children became familiar with the musical indication to the numbers, teacher or therapist might mixture the number in advance level of playing or singing. The teacher or therapist should always encourage children with upbeat drumming or the needs of children's favour.

E.2 Intervention III   Go and Stop or 'Freeze' game. (Run or Stop;

Jump or Stop)

Intervention III Go and Stop or 'Freeze' game. (Run or Stop; Jump or Stop)

Goal areas

Understanding of the subject of go, run, jump, clapping-hand, stapping-feet, touch the floor, stop etc. joint attention and sustained attention, listening skills, self-expression, coordination of mobility etc.

Musical experience

Singing or listening to the live music playing

Playing or singing the music in a flexible tempo to match the needs of the children's activities.

Pre-composed song by Li Hao (Insert a music)

Let's run………quickly run, quickly run, run……………… and ready to stop, STOP!

Let's walk……….slowly walk, slowly (quickly) walk, walk, walk………… and ready to stop, STOP.

Then sing the verse three with Jump, four with Clapping-hand, five with Stepping feet, etc.

Playing rhythm instruments

Strategies in DCTM

The music includes various verses and provides opportunities for children to follow musical indications when children need to go, run, clap etc and stop. The teacher or therapist should support children with a live musical direction during the singing or playing. Irregularly appearance of 'stop' in the singing or playing is also recommended.

The teacher or therapist creates more opportunities for children to say the target words via musical prompts. Playing and singing music live, give the children a chance to play or sing naturally along with music, but record music cannot. Repetitions are necessary for this intervention because it develop the pattern perception skills in children with autism. Self-expression and sustained attention has improved during the activity playing.

The therapist or teacher encourages the children to lead the activity when they become familiar with the intervention. Whoever leads the activity should initiate the order with the target. This also develops the children's joint attention and sustained attention with the activity develops.

E.3 Intervention VI   Counting games

Intervention VI counting games

Counting songs

Instrumental playing with the numeric

Goal areas

Imitation, turn-taking, academic skills or counting and listening, sustained attention, joint attention, self-confidence and self-expression, eye contact etc.

Musical experiences

Singing or playing to the live music or song.

For example: What number is this, listen, X X, X X.X X
—

Listen to X X, XX X, XX XX, (Chords progression)

Playing Instrumental while counting the numbers, say or sing 'one, two' or one, two, three' play instruments for echoing the beats. (Insert a music)

Second song example: singing without instrumental playing based on the previous practice. Singing in a various tempo and giving the children a pause hint before the 'numeric space or other targets words'. It might difficult as the beginning and the repetitions are necessary.

Strategies in DCTM

Utilize the musical or verbal stimuli in this activity. The music therapist or teacher is better to use live playing or singing because they can repeat any part of the music if it is needed. If this intervention is the first time introduced in the music session, the teacher or therapist might play the song with the assistant and provide the opportunities for the children to listen only. With a close observation of the children during presenting the music, then considers the appropriate the tempo and add verbal or instrumental prompts.

Use percussion instruments for counting needs. Diversifying the rhythm and beats diversification are the main elements in this activity. Implementing those might provide the children more chances to develop a rhythm pattern that is critical for their communication development.

All the children should be encouraged singing or singing and playing the entire song by imitation or memory. Eventually, the children sing the song by imitating, but understanding the meaning. However, the children might unconsciously recite the music after or out of the music session. Those simple imitative singing and playing becomes (an effective reinforcement) the consolidation for children to obtain the communication skills.

The teacher or therapist might change lyrics or introduce new subject areas with the same melody song when the children show the ability to count the numbers in the music. The way of change lyrics in a song aims to increase the generalization of verbal sounds and learning numbers with younger children with autism.

E.4 Intervention V   Instrumental Ensemble

Intervention V Instrumental Ensemble

Goal areas

Verbal and nonverbal communication, listening skills, social interaction, turn-taking, joint attention and sustain attention, receptive musical behaviours, mini group coordination etc.

Musical experiences

Listening and interacting in a music circle

Example music: Joshua fight battle of Jericho (N-R)

There are two teaching assistance and a child with music therapist in a session which is an individual session format. Therapist arranges the instruments with instrumental ensemble plan and briefs the teaching assistances before the session start.

Playing various instruments in a musical movement activity

Setting up the instruments on a table which place in a middle of the room, encourage the children with verbal prompts to play the instruments on the table. Children should play an instrument echo the verbal prompts, such as therapist says 'play two beats on a drum', then the children select a drum and play two beats with hands or beater without particular requirement.

Example music: if you happy you know it

Strategies in DCTM

A child communicate depends on what he/she wants or a motives.

Normally developing children is different between children with autism in acquiring the verbal communication skills. Children with autism have communication impairment, such as, they have difficulties to use words to ask for what they want. Therefore, a positive intervention to teach autistic children's communication skills should be able to predict the teaching effect of motivational reinforce such as children's favourite musical instruments.

Children could control over their social environment by using /playing musical instruments. This control should be helpful to enhance the value of language teaching in general, responsiveness to language and the ability to start specking first words, and also to build up the crucial roles of the speaker and listener for further verbal development.

Playing the instrumental ensemble, the music therapist or teacher should very clear direction with active verbal prompts such as 'it is your turn' and wait, it is my turn', or 'it is drum player's turn/ after the child or teaching assistant's playing, the teacher or therapist should ask 'what instrument did the player play?' if the child respond incorrectly, the teacher or therapist encourages the child with verbal prompts, such as 'let's play the tambourines again tambourines.' The most importantly, the child should always be praised after each turn to play the instruments by the teacher or therapist.

Selective instrumental playing in a musical activity is an effective technique to teach joint attention and turn-taking skills in the foundation of communication. This particular instrumental ensemble intervention should be facilitated with live singing and accompaniment by the teacher or therapist that provides appropriate verbal prompts and direction.

Appendix F: Yujing's evaluation on DCTM intervention in cycle 2

Yujing's 1st session evaluation report on DCTM intervention by Tongtong

	Report on the DCTM intervention (Yujing's 1st session)			
			Communication	
	Musical activity	Imitative and interactive play	Non-verbal communication	Verbal communication
Quality of learning	There were musical activities arrangened for Yujing by Tongtong and Xiaoqiu. Singing and playing drum did not work for him.	We moved to the toy hoop playing, I gave the order and Yujing reacted with Xiaoqiu assitance.	There were some non-verbal communications.	There was no verbal communication
Relationship development	The relationship seemed does not developing via musical activities	Yujing had no attention to imitating the rhythm.	We seemed reamin a positive relationship by the Instruction-following game.	None
Children' responsiveness	There was not really responding from Yujing.	Yujing interacted to my instruction precisely.	Communicate by th ebody movements in the toy playing.	None
Reflections	I felt a little nerves with Yujing's first session and it was a little difficult to use some materials which same as Yujing's sessions in cycle 1.			

Appendix G: Jinyan's evaluation on DCTM intervention in cycle 2

Jinyan's 1st session evaluation report on DCTM intervention by Tongtong

Report on the DCTM intervention (Jinyan's 1st session)				
	Musical and Intensive Interaction		Communication	
	Musical activity	Imitative and interactive play	Non-verbal communication	Verbal communication
Quality of learning	There was actively musical responding at the beginning of the session. He was happily greeting to us and Jinyan seemed a little refused when I tried to insist with playing the toy hoop instead of letting him playing the drums.	We were happily playing the drum with counting game and Jinyan waving his arms, clapping his hands and showing his finger postures.	There were some non-verbal communications with some body movements.	It seemed a short verbal communication via chanting song when we greet each others.
Relationship development	The relationship seemed reamining in a positive way during his first session.	Jinyan shared his attention by following my greeting songs singing and playing.	There was a good moment of nonverbal communication when Jinyan, Xiao and I greeted mutually via hands clapping, singing and playing the piano.	We seemed positively remaining our relationship by greeting songs singing.
Children' responsiveness	There were quite good responsiveness from Jinyan by his body movements and singing songs.	Jinyan interacted to my instruction actively during the musical turn taking via the counting game.	Communicating by the body movements in the greeting song playing.	Jinyan respond to my greeting song playing on the piano at the beginning by chanting and singing the song.
Reflections	I prepared this session quite well and had a discussion with Li and Xiaoqiu. Overall, the session seemed run through smoothly and Jinyan enjoyed session with the musical activities and instrumental playing.			

Appendix H: Pre-Post and Overview evaluation scales

H.1 Pre-assessment session evaluation

Overall responses of group 1 children to pre-assessment sessions

<table>
<tr><td colspan="2">Pre-assessment</td><td>Turn-taking</td><td>Imitation</td><td>Initiation</td><td>Sharing-attention</td><td></td></tr>
<tr><td colspan="2"></td><td></td><td></td><td></td><td></td><td>Teachers</td></tr>
<tr>
<td rowspan="3">Musical Evaluation</td>
<td>Rhythm</td>
<td>Most of children rarely interacted with me on time even in two bars, only two boys seemed to follow up rhythmically with music plays.</td>
<td>Simple, repetitive imitation seemed working for those children, but there was not the judgment, only exploring.</td>
<td>They unconsciously initiated the instrumental playing which was more like investigating the different sounds.</td>
<td>Hardly sharing the attention with me through music responsiveness.</td>
<td rowspan="6">Teachers thought they did not hav
musical knowledge to play freely
and they did not have the techniq
piano like professionals. Their mo
thing was changing the teaching s
they were trained in the old tradit
Teachers discussed that children s
and enjoy the way I played.</td>
</tr>
<tr>
<td>Vocal</td>
<td>Most of the children were at the level of babbling and echolalia, but it happened that one of children asked me to play piano again by lifting my hands to the piano keys and sang at the same time.</td>
<td>It was difficult to identify whether the children imitated me vocally. Only some babblings I could hear.</td>
<td colspan="2" rowspan="2">It might be the first time to play with those children, therefore they did not show the initiation and attention to the vocal and tempo changes in the music.</td>
</tr>
<tr>
<td>Tempo</td>
<td>Playing music in slow tempo seemed to work better with children during the session.</td>
<td>Keeping tempo steady and giving children security, so they felt comfortable</td>
</tr>
<tr>
<td rowspan="3">Intensive Interaction Ev</td>
<td>Nodoff and Robbins evaluation</td>
<td colspan="4">Based on the Nordoff and Robbins evaluation, most of children were on the level of limited responsive activities. Some of children were anxious and played uncertainly. Only a few of them tended toward rejection when I asked to play with me.</td>
</tr>
<tr>
<td></td>
<td>Turn-taking</td>
<td>Imitation</td>
<td>Initiation</td>
<td>Sharing attention</td>
</tr>
<tr>
<td>Intensive Interaction</td>
<td>Children did not actively interact with me, but they did have some expression on their faces when I tried to encourage them to take turns.</td>
<td>I tried to attract their attention via music activities, in order to imitate mutually.</td>
<td>One of children asked me to play piano again by lifting my hands to the piano keys and sang at the same time.</td>
<td>Children were pay attention to listen to the music, such as, their facial expression with a mouth open, small smiles, etc.</td>
</tr>
</table>

H.2 Post –assessment session evaluation after cycle 1

Overall responses of group 1 children to post-assessment after cycle 1

Post-assessment		Turn-taking	Imitation	Initiation	Sharing-attention	Teache
Musical Evaluation	Rhythm	Children mostly interacted with me on different level; only two boys seemed to follow up rhythmically with music plays.	Instrumental and body movement imitation seemed work for most of the children in different levels. In particularly, upbeat and repetitive music impact on these children positively. For further practice, it needs to explore more on this.	These children hardly initiated or led the instrumental playing. However, they seemed interesting and focusing at the end of the cycle 1 practice both in instruments and body movement.	Generally sharing the attention with me through musical playing. Especially, when I played the upbeat music, the eyes contact last longer.	Teachers were little worried a could be delivered the sessio musical techniques, teaching materials as well as used inst professionals. Their most und changing the teaching style b trained in the child-centered convinced that children enjoy with my teaching. Based on c discussion after each session, the next cycle practice with a
	Verbal and non-verbal	Most of children responded me via instrumental turn-taking which was non-verbally communication. Only Yujing could make some of verbal communication rarely.	Verbal imitation seemed difficult for these children, only few children made consciously verbal imitation during the cycle 1 practice.	During the cycle 1 practice, the ability of initiation did not develop much, but the attention sharing improved comparing with the beginning of the cycle 1.		
	Tempo	Playing music in slow tempo seemed to work at the beginning of the cycle 1 practice, but upbeat music seemed that children more active taken turns in the session.	At the beginning of the cycle 1 practice, keeping tempo steady which given children sercurity, but changing the tempo alongside with the sessions moved on, which encouraged children to expressing themselves via imitation.			
	Nodoff and Robbins evaluation	Based on the Nodoff and Robbins evaluation, most of children were on the level of limited responsive activities. Some of children were anxious and played uncertainly. Only a few of them tended toward rejection when I asked to play with me.				
		Turn-taking	Imitation	Initiation	Sharing attention	
		At the beginning of the cycle 1, children did not actively interact with me, but over the eight weeks of musical practice combining with the simple Intensive Interaction techniques, these children		These children enjoyed child-centered music sessions,	Children paid attention to listen to the music, such as, their facial	

H.3 Overview of the evaluation scales after cycle 2

	Overview of evaluation scales on this project		
	Cycle 1	**Cycle 2**	**Examples in music**
Quality of teaching	Live music playing was the significant difference between traditional teaching and my teaching. In addition, flexibility and improvisational were the major characteristics in cycle 1 teaching.	Live music played by early years teacher which was not a preference of their choice. They used this type of teaching inflexibly and they found it difficult to deliver improvisational skills during the teaching in cycle 2.	New materials has the potentials for the commu centre, but with lack of teachers training with th year teachers, DCTM intervention seemed a little for them to develop with their daylily teaching. F example, Tontong delivered session with her obe However, Mingming used new materials better t others. For example, in Siqi's fifth session in cycl
Relationship building up	Trust relationship was built up in cycle 1 practice. For example, physical support, touching hands, leaning on the shoulder, head against head convey the children' trust and interest.	Trust relationship did not develop any further in cycle 2 because the children seemed nervous and could not relax to play, evident in their facial expression and body movements.	The relationship was build up via music in cycle 1 little development in the cycle 2.Particularly, the music attracted children's attention and mutual relationship developed. For example, Xuanxuan' session with Xiaoqiu on drum playing showed th relationship development.
Children's responsiveness	Body movements and instrumental playing clearly used to respond to music and me in a positive way.	Children responded to Tongtong and Xiaoqiu occasionally with obeying rules in a passive way.	Most of children were on the level of limited resp activities. For example, Jinyan showed moments expressed responsiveness related to the music a at me with excitement in his last session in cycle 1.However, those moments rarely happened in c
Effectiveness of adaptation on music/intensive interaction materials and styles	Improvisational skills positively affected children's attention sharing and communication ability via musical turn-taking and imitation.	Musical improvisational skills when they appeared did have a positive effect on children's communication.	Both on cycle 1 & 2, the new musical materials a impact on the children's learning. For example, c were more active in cycle 1, such as, a big smile, to cover the eyes etc. in Jinyan's session. In addit Tongtong played the right music and flexible mus patterns for children to fix into it; Yujing's eye co lasted longer.