

Lesley University

DigitalCommons@Lesley

Expressive Therapies Capstone Theses

Graduate School of Arts and Social Sciences
(GSASS)

Summer 8-17-2020

Music Interventions for a Child with Developmental Disabilities

Zishan Xiong

zxiong@lesley.edu

Follow this and additional works at: https://digitalcommons.lesley.edu/expressive_theses



Part of the [Art Education Commons](#), [Elementary Education Commons](#), and the [Social and Behavioral Sciences Commons](#)

Recommended Citation

Xiong, Zishan, "Music Interventions for a Child with Developmental Disabilities" (2020). *Expressive Therapies Capstone Theses*. 371.

https://digitalcommons.lesley.edu/expressive_theses/371

This Thesis is brought to you for free and open access by the Graduate School of Arts and Social Sciences (GSASS) at DigitalCommons@Lesley. It has been accepted for inclusion in Expressive Therapies Capstone Theses by an authorized administrator of DigitalCommons@Lesley. For more information, please contact digitalcommons@lesley.edu, cvrattos@lesley.edu.

Music Interventions for a Non-Speaking Child with Developmental Disabilities:

Development of relationship-based music therapy method in school settings

Capstone Thesis

Lesley University

Date: August 13th, 2020

Student's Name: Zishan Xiong

Specialization: Music therapy

Thesis Instructor: Marisol Norris

Abstract

This capstone thesis project explores a musical intervention (Development Interaction Through Music, DITM) for a 9-year-old girl with neurodevelopmental disorders in a school setting. Although there was research on the application of music therapy in different populations, there are relatively few documentations on music therapy in the field of special education. Some case studies have found that music therapy has a positive effect on people with developmental disorders (Thompson & McFerran, 2015). Clinicians need to engage in more clinical practice and collect case data as strong evidence. Music therapists who work with children with severe disabilities are recommended to build a communication platform to learn from each other to promote the development of music therapy. The Intervention of DITM was designed to use a therapeutic relationship as a promoter in music therapy to support the development of children whose social, communicational, and visual abilities are impaired. There were multiple methods used when collecting data, the most important of which included field notes and reflective journals, and artistic responses regarding the participant. Through implementation, result analysis and self-reflection, I found that the therapeutic relationship naturally grew the music experience and ultimately contributed to the progress of the participant. The core of the work was to provide a supportive environment, concrete objectives, and structured interventions for the client according to her needs. Through interaction with therapists and music, the musical talents of the participant were constantly developed.

Introduction

Children with special needs have always been one of the main research populations of music therapy (Thompson & McFerran, 2015). The interventions, methods, and goals of music therapy for children with special needs are diversified. Most of the interventions are music-based activities, such as singing, playing instruments, and discussing music (Geretsegger et al., 2014). These musical activities are often applied to achieve non-musical goals, such as improving the behavior of children with special needs, improving their cognitive, linguistic, emotional, and social abilities. In addition, with the use of music rhythm modes, sound modes, and other speed time characteristics, music therapy can also improve the nervous system function of children with special needs.

I spent a year and a half internship in a special education school for children with visual impairments. I witnessed the musical talent of each child and the positive changes brought by music therapy. According to my observation, people with visual impairments may be more sensitive to sound, and sound has become an indispensable way for them to explore the world (Park & Chong, n.d., p. 226). For example, sound can help them locate direction and objects, and listening to music can help them relieve anxiety and pain. Music can be used by people with impaired vision as a way of treatment and a means of self-acceptance, so that they begin to accept their own blindness, and can also become a medium of communication with others.

There was also a large group of children with Neurodevelopmental disorders in my internship site. Neurodevelopmental disorders can manifest as intellectual impairment, impaired motor function, learning disability, visual impairment, or non-verbal communication (Ryan, Berman & Bauman, 2019). Over a lifespan, the development of communication and social skills

is often a major focus. Music therapy has proved to be an important service to improve children's communication and social skills. However, during my research, I found that many interventions were limited to application with verbal children or children with visual impairment. Therefore, I wanted to explore more possibilities and more effective music therapy methods for a non-verbal group of people with visual and neurodevelopmental disorders through this project. For example, some existing music activities were changed so that children with low functions can easily participate in them.

During my internship, my mood also changed strongly, because I often played multiple roles at the same time. Sometimes I was a clinician, sometimes I was a music educator, and the rest of the time I was a supervisee. Initially, the lack of confidence made it difficult for me to be natural in the sessions, because I was afraid of being criticized by the supervisor. I often felt that my skills and methods were not perfect enough. When I was faced with challenges, I felt overwhelmed. I felt that I had succeeded, to some extent, when I later saw the client's positive response. While working with a low functioning 12-year-old girl, I had to be aware that my transition from negative to positive emotions interacted with my work. At first, as a learner who was improving their professional skills, I built a relationship with my client with inner fear and tension. With the increase of musical interaction, I felt a strong bond between us, which fostered trust within the therapeutic alliance and allowed her to respond to me musically. Interestingly, from the growing confidence and enthusiasm, I saw that I also benefited from this positive therapeutic relationship. I became increasingly convinced that therapeutic relationships have an incredible impact on the outcome of interventions. In the short term, I wanted to use art for self-reflection and inner criticism in order to find my identity as a clinician. In the long run, I wanted

to deeply explore the significance of therapeutic relationship in music therapy through the development of relationship-based interventions.

Therefore, I developed a music therapy intervention called Development Interaction Through Music (DITM). It is a relationship-based method which uses musical activities, musical elements of melody, rhythm, harmony, and instruments in spontaneous interaction facilitative for children with special needs, particularly in young children with neurodevelopmental disorders. Within therapeutic practice, children's musical intelligence is stimulated in deep levels of musical contact with therapists and shows a higher degree of participation and response. The goal of this capstone project was to bring about improved understanding of the ways music could be used to help young children with neurodevelopmental disorder and the adults interacting with them and teaching them.

Literature Review

Music therapy scholarship and research have offered literature that supports the use and benefit of music interventions with children with special needs. The purpose of this literature review is to orientate the scope and focus of the research. I will mainly focus on areas that are relevant to the development of the DITM method for children with special needs within school settings. The following review of literature will include: music therapy in special education, music therapy and music education, music and visual impairment, and music therapy and developmental disabilities.

Music therapy in special education

With the wide application of music therapy in the field of special education, a large number of relevant articles and research can help us to have a macro understanding of the current situation of music therapy in the field of special education. Pellitteri (2000) identified the

benefits of music therapy and how music therapy can be integrated into various aspects of special education services. For example, music as a right-brain process can facilitate language; music facilitates socialization and interpersonal interactions; music therapy can help to address many areas of mental functioning like impulse control. This research also illustrates the rationale of therapeutic alliance and asserts the importance of including music therapy in individual educational plans (IEPs). Therapeutic alliance is the nonjudgmental attitude of the therapist, which means a child's behavior is viewed as an expression of the self and an adaptive attempt to satisfy an underlying need. The clinical approach is to emphasize the positive and productive behaviors of the child. Rickson & McFerran (2007) outlined the history of research on the topic of music therapy in special education and provided a research path for future studies. They also gave basic knowledge about the structure and assessment framework of music therapy in special education. "A procedure of referral, assessment, treatment, documentation and evaluation shapes the clinical intervention in line with the Individualised Education Program (IEP) structure" (Rickson & McFerran, 2007, p.42). Music therapists reported they were assessing in the following domains: Motor skills, communication skills, socialisation, cognitive skills and musical responses.

Aigen (2014) conducted a study about the relationship between Nordoff-Robbins music therapy (NRMT) and music-centered music therapy. The first part of the study points out the characteristics of music-centered thinking and explains the central concept of the NRMT music child. "The music-centered perspective in music therapy is deeply rooted in one's personal experience in music" (Aigen, 2014). Music centered thinking places music and music experience in a central role, because it emphasizes the intrinsic value of music experience for human development. NRMT took the idea of music as a form of intentional human action from music-

centered theory to reflect one's connection with the world and himself by evaluating one's musical functioning. The second part of the study explain how music-centered thinking can promote the development of music therapy in many aspects by analyzing the commonality of the two theories.

Generally, when music therapy is connected with special education, the clinician plays the dual role of therapist and educator. In the next section, I will explore the similarities and differences between music therapy and music education.

Music therapy and music education

Although the same media and materials are used, the populations and goals of music therapy and music education services are different. Salvador & Pasiali (2017) identified that there are obvious distinctions between the concepts of "therapy" and "education". The former aims to promote the development of certain functions, while the latter aims to strengthen the cultivation of certain abilities. "Expressive arts therapists tend to often pursue artistic outcomes as a basis of psychological change whereas arts educators tend to consider artistic change as important in itself" (Salvador & Pasiali, 2017, p.94), Music-centered thinking (Aigen, 2005, p. 67) was set in opposition to psychotherapeutic thinking. They asserted music is not necessarily a tool for achieving something else. But they acknowledged that clients' capabilities such as impulse control, expressiveness, and social skills have been enhanced in the music experience and consider these results as secondary effects.

Smith (2018) clarifies the roles of a music educator and music therapist through a case study. What music therapists usually do is enjoy music with clients and help them develop various skills in a relaxed and non-judgemental context, combined with children's actual situations and developmental goals. Music therapists have the responsibility of playing the

unique functions of music, assisting children with special needs' development of areas such as physical function, perception of movement, cognitive skills, and social communication, and reducing the subsequent obstacles that may be caused by the existing obstacles, so that they can better integrate into society and adapt to life.

Salvador & Pasiali (2017) pointed out that there are also practical differences in the use of open space for art teaching and confidential space for art therapy. "Therapists also tend to work one-on-one or with small groups in order to assess, evaluate and monitor therapeutic outcomes, while music educators in school settings tend to work with intact classrooms of students" (Salvador & Pasiali, 2017, p.95).

In addition to differences in concept and clinical settings, training and certification of music therapists and educators in the United States is also different. Wheeler (2018) discusses the prerequisites for music therapist certification. Music therapists are required to hold a bachelor's degree or higher from one of seventy-two recognized colleges of AMTA and pass the board examination offered through the Certification Board for Music Therapists (CBMT). Elpus (2015) stated that certification requirements for music teachers vary by state. In general, traditional music teachers are required to hold a bachelor's degree in music or music education from an accredited university, meet certain course work requirements, and demonstrate mastery of music content and teaching methods.

Music therapy and music education can be understood as poles to some extent. Only by distinguishing their definitions and differences can therapists more flexibly decide how to use them together or separately. To help me better understand the effect of visual impairment of the participant on the treatment. Or how music therapy can be more effective for the participant with

visual impairment. In the next part, I will review the literature about the connection between the two.

Music and visual impairment

Swift et al. (2008) presented the Definition and Etiology of Cortical Visual Impairment (CVI) and discussed some effective treatment strategies. CVI is a “new” disability, because there is little research on it, which brings great challenges to the clinical work. For therapists working with children with CVI, it is important to have a deeper understanding that CVI is not a disorder involving only the eye, but a brain-based disability. Having an overall comprehension of CVI patients’ exhibition determines whether the therapists can provide appropriate services for them.

Park and Chong (n.d.) examined the differences in emotional responses to music between adults with visual impairment (VI) and adults with normal vision (NV). The results showed that people with visual impairment did not affect their music experience because of sensory disability, that is to say, there was no significant difference between adults with VI and people with normal vision in their emotional response to music. The phenomenon of sensory compensation often seems to be a controversial topic. Do people with visual impairment have any changes in their brain structure when they listen to music? Park & Chong (n.d.) stated:

Some brain imaging studies have provided evidence that the brain structures activated by visual stimulation are similarly activated when listening to music. Visually impaired people can also use music as a tool for social communication as well as a source of personal enjoyment (p. 226).

Metell & Stige (2016) reviewed the current literature regarding music therapy and visual impairment. They found twelve publications relevant to this focus. One researcher who has made outstanding contributions to the field of music therapy and to children with visual impairment is

Peggy Coddling. She (Kern, 2006) highlights “the impact music therapy has on development, especially in terms of sensory stimulation, motor development, orienting, and normalizing” (p. 104). For children with visual impairments, music therapists can offer music as a resource to create a space for mutual participation in daily life and support families by developing songs and activities.

The participant was diagnosed with developmental disorders, so it is important to understand whether music therapy has a positive impact on children with developmental disorders. Next, some literature on the outcomes of music therapy on communication and social aspects will be listed.

Music therapy and developmental disabilities

Thompson & McFerran (2015) provide research into the impact of music therapy on the communicative behaviors of young people with profound intellectual and developmental disability. Through four case studies, it is concluded that music therapy creates engaging and motivating conditions for interactions with others. Wetherick (2014) also conducted case studies to demonstrate that music therapy improves the social and communication skills of children with language disorders. As a result, the participants showed increased spatial speech and cooperative play in a variety of musical experiences. Sara’s (2019) article provides research into how music therapy improves social and communicative functioning of children with multiple disabilities. The author states the definition of music therapy as an interdisciplinary specialty, which helps readers understand clinical cases in the context of academic knowledge.

Moseeler (2019) examined whether the music therapeutic relationship was an important predictor of the development of social and communication skills among autistics. The application of assessment of the quality of relationship (AQR) and the Autism Diagnostic

Observation Schedule (ADOS) provided a result demonstrating that meaningful development is possible when the therapist is musically and emotionally aligned with the child's communication. Moseeler (2019) stated that, "the music therapeutic relationship to be an important predictor of the development of social skills, as well as communication and language specifically" (p. 2795).

Mendelson et al. (2003) explored the music-based intervention for improving communication skills in children with autism spectrum disorder (ASD) and children with intellectual disabilities. Participants in the long-term group of music therapy demonstrated significant increases in verbal responses. This conclusion provides experimental support for further promoting music therapy as an effective treatment method to promote social and communication skills in individuals with developmental disabilities.

Method

The purpose of this paper is to explore how to use music interventions to help a girl with visual impairment and neurodevelopmental disorders improve her social and interactive abilities. The following section provides a description of the project setting, participant, treatment goals, and project design and project method used within this capstone project.

Project Setting

This music intervention took place at the Lower School of a School for the Blind, which is a special education institution. In general, the students here are between 6 to 14 years old with broad spectrum of mental disorders, such as neurodevelopmental disorders, intellectual disorder, Autism, Attention-deficit/hyperactivity disorder, etc. The Lower School Program aims to educate the whole child, from implementation of traditional academics that will prepare each child

intellectually, to the teaching of self-help and social skills that will allow students to increase their independence.

Participant: Inn

Inn is a 9-year-old girl diagnosed with optic nerve atrophy and cortical visual impairment (CVI). She attends a school for the blind, sits in a wheelchair, and is non-verbal. Her hearing was evaluated in a sound field using behavior observation audiometry. Results supported normal peripheral hearing sensitivity. Inn's neurological and developmental history, and the present assessment results, are indicative of a neurodevelopmental disorder with associated intellectual impairment.

Inn attends group and individual music therapy session weekly. Inn's strengths are her love of music and her positive relationships with familiar things. She enjoys physical contact with staff, often reaching to the side to seemingly find them, and appears to enjoy co-active movement with staff as demonstrated by further reaching, smiling, and vocalizing. Inn communicates her wants and needs through total communication, including facial expressions (i.e. smiling), vocalizations with positive and negative affect, behaviors (e.g. biting), body movements (e.g. clapping and rubbing her hands, rocking her body forwards and backwards, kicking her feet, etc.), tangible communication symbols, and adapted signs and single voice output communication aides. Using total communication, she independently initiates a request to terminate an activity through her vocalizations, pushing items or people away, dropping unwanted items or attempting to bite her own arm. These requests continue to be shaped into more conventional communication through physical assistance to sign "finished."

Inn's Treatment Goals

Communication/Social goal: When awake and alert, Inn will activate a switch to request more of an object or action, indicate an activity is finished, and request a turn in 3 out of 5 observed opportunities given physical and verbal prompting.

Objective 1: When awake and alert, Inn will activate a switch with a “more” tangible symbol paired with a real object to request continuance of a highly preferred activity or “more” of a highly preferred object in 3 out of 5 observed opportunities given physical and verbal prompts.

Objective 2: When awake and alert, given staff modeling of placing an object in a “finished” bin, Inn will accept physical assistance to activate a switch with a “finished” tangible symbol to indicate that an activity is finished in 3 out of 5 observed opportunities.

Objective 3: When awake and alert, Inn will activate a switch to request a turn in 3 out of 5 observed opportunities given verbal and physical prompts.

Music Therapy goal: Inn will maintain longer attention in structured music activities and reduce self-entertainment through music interaction.

Objective 1: Inn will show her attention for at least 6 minutes through rhythmic body movements or vocalization in a 10-minute vocal exploration.

Objective 2: During instruments playing, Inn will become more acceptable to the presented objects and respond to interaction in 3 out of 5 given opportunities.

Project Design

The project is designed to introduce the relationship-based music intervention for children with developmental disabilities with a single participant over the course of five sessions. Each session I utilized the core elements of the intervention to facilitate Inn's treatment goals and support client expression. Field notes, reflective journals, and artistic responses will be

utilized for the purpose of this project to explore the project method that provided a supportive environment, concrete objectives, and structured interventions for the client according to her needs.

Relationship-Based Music Method for Non-speaking Children with Developmental Disabilities

The purpose of the relationship-based music intervention for children with developmental disabilities is to get students to accept and express themselves as they are. Meanwhile, music therapy is also a service in students' individualized education program (IEP) to help them improve their social and communication skills. Therefore, the music intervention in school settings not only brings joy to the clients, but also provides various supports for their overall development. In this section, I will discuss the materials and assessment used in this intervention as well as the CVI intervention and music-making activities included in the method protocol.

Materials Used

To enable students to engage in music activities, materials for students with special needs must be prepared in advance before the sessions. Communication devices are mainly switches (assistive technology devices) and tangible symbols (i.e. music, hello, instruments, finish, goodbye). Switches give students the access to communicate with others with simple operations. Tangible symbols share a perceptual relationship with the items to help students to be aware of how objects look and feel. Both are essential for Inn, which has contributed a lot in any school curriculum, especially in music therapy.

A finish bin and CVI accommodations (i.e. black screens, flashlight) are also necessary materials. Many researches indicate that shiny or reflective objects that give off the illusion of movement are recommended for attracting the visual attention of a child with CVI. Therefore, I

chose a round, silver, shiny tambourine with a smooth surface and a shaker with lots of shiny beads.

Assessment

Assessment is an extremely important part of music therapy. It not only enables the therapist to have a deeper understanding of the client, but also measures the success of later interventions. However, music therapy-specific assessment for children with DD are limited. I referred to the individualized music therapy assessment profile (Baxter, Berghofer & MacEwan, 2007) and music therapy assessment (Boxill & Chase, 2007) to create a suitable assessment form for my client.

CVI Intervention

In the music therapy setting, in order to support the overall development of students with CVI, I will take about 5 minutes to complete CVI exercise. CVI exercise involves putting the object in front of a blackboard (here I use the tambourine), and then using the flashlight to shine on the object. The idea is using the light movement as a stimulus to attract the student's attention. The therapist also keeps a record of the data by observing the student's performance in CVI exercise every session.

Hello and goodbye songs

The beginning and the end of the session are accompanied by a song, which aims to establish a clear structure. The Hello and Goodbye songs can also be an intervention to improve social skills by greeting and interacting with therapist. Both songs are composed of a simple, light melody and clear lyrics, and the client is given two or three opportunities to greet with communication equipment in the space given by the therapist. The Hello and Goodbye songs are

meaningful activities to improve the students ability to transition between activities and engage in music therapy context more quickly.

Improvisation

Knapik-Szweda (2015) stated that, “improvisation as a therapeutic tool contains a musical structure and a clearly systematic approach which engages the child in a musical activity in a safe environment” (p.154). One of Inn’s strengths is vocalization, but most of her vocal phrases are stereotyped and repetitive. In the framework of improvisation, I will build an interaction by reflecting, imitating, and developing her vocal phrases. In addition, improvisation provides a freer space for music-making. Improvisation allows the clinician to focus on all the student’s reactions, even some details, rather than music elements such as melody and harmony. As a client, Inn will not be overwhelmed by complex content in songs, because it is reported that she may in trouble when her brain receives a lot of information at the same time.

Instrumental playing

Compared with the vocal improvisation, the intervention of instrumental playing is more structural. Structure is not the typical feature of musical instrument playing in the Lower School Program’s music therapy setting, but it can contribute to the treatment goal of Inn in turn taking. Structure means that a basic framework is composed of a stable rhythm, fixed melody, and harmony. It can be a song or a loop of harmonic progression. Repetitive instructions and explicit pauses in songs can gradually help in modeling the concept of turn taking. Over time, student can develop an understanding of when to continue playing and when to stop and listen to others. More importantly, the instruments exploration can improve the ability of Inn to interact with objects. Inn usually shows low acceptance and tolerance for objects, and she tends to empty the

space in front of her. By contacting the instrument for a longer time, Inn will be expected to hold more objects independently and show purposeful interaction with them.

Results

Session one

Inn was brought into music therapy by a teacher assistant. After a brief check in with the teacher assistant, I learned that Inn had just suffered from a seizure and she was in an uncomfortable state. Inn spent about 2 minutes trying to concentrate her vision on a tambourine as observed, which took longer than usual. While I was playing the Hello song on the guitar, Inn's head turned to the direction of the music and she kept clapping and saying "ah, ah, ah." When the "hello" switch was presented to Inn, Inn activated the switch under the verbal and physical cues I gave. Instead of use the switch functionally, her activation seemed to be pushing the switch away. At the end of the Hello song, I melodiously stated "Now get ready to stop." She stopped for 10 seconds and then returned to self-entertainment again. Interestingly, Inn's clapping and vocalizing were not chaotic, but rhythmic. I tried to establish a rhythmic connection with her to let her know that I was with her. Next, I improvised a harmonic progression G-G-D-G in G major and reflected Inn's beat. I heard Inn pitched in key several times, which surprised me. After that, these sounds gradually formed musical phrases similar to scales (Figure 1).

Based on the unexpected performance of Inn, I came up with the idea of making some changes to the treatment plan. The original singing improvisation had no structure, and the melody and rhythm may be changed with the Inn's response. I wanted to splice Inn's music fragments into a structured song and use it in future sessions to see how Inn would react to it. The vocal improvisation also ended with the instruction of "Now get ready to stop," but this time

Inn did not stop. I provided a “finish” switch to model the end of an activity. Like activating the “hello” switch, Inn’s behavior seemed to push it away.

The second half of the session was instrumental playing. I improvised songs as a framework for activities, which are composed of a simple melody, specific lyrics and Inn’s language (I call Inn’s vocalization as “Inn’s language”). Inn needed more physical support when playing instruments, so I held the instruments and gently touched her arms with them. Once Inn felt the instruments, she touched them briefly and push them away. Every time she pushed away, I used “my turn” to label her actions. Similarly, when the instrument was presented again, “Inn’s turn” was used to label. The session ended with a Goodbye song. Inn seemed to have higher energy when she left compared to the beginning of the session.

Before this session, I was not sure if Inn’s behavior of pushing was expressing resistance, but I can be sure that I felt depressed and tired. I repeated the same thing in every session, and the response from Inn was always rare. I found that even if I had reviewed her files many times and understood all the diagnoses, I could not really understand the thoughts and behaviors of a child with mental retardation who was also non-verbal. Maybe when Inn was listening to music, her brain was running too much information, but people cannot see it. People who work with Inn can only try to understand the expression of Inn by making assumptions, because Inn can never tell people how she thinks. The artistic response (Figure 2) was completed when I went home to review the data for that day, showing the image of Inn in my mind. She needed someone to have more patience to interact with her.



Figure 1: Inn’s pitched phrase from session #1



Figure 2: Artistic response to session #1

Session two

Before the session, I was told that Inn was in a good mood. It took Inn about 30 seconds to focus on tambourine, which was shorter than last week. Before I saw her eyeball move, Inn reached out her right hand and touched the tambourine, making a little noise. My guess was that the sound of the object helped her locate it in a shorter time. It was often unclear as to when Inn's switch use was purposeful.

In the vocal improvisation, the interaction between Inn and my voice sounded like a dialogue with similar musical phrases. Like the last session, I recorded her music fragment (Figure 3). I tried to speed up the rhythm, and she followed me reflected in her rapid clapping and rubbing hands. She followed me four times in five dynamic changes, which seemed to be more active participation. Tambourine and shakers were presented to Inn at the same time, to assess whether Inn had the ability to make choices. Inn reached out with right hand and touched the tambourine. I paralleled as "you reach out to the tambourine, which means you want that." Inn showed increased familiarity with the structure of the activity by playing more organizationally as observed.

I was eager to learn more about Inn and connect with her. This artistic response (Figure 4) implied that Inn was a colorful and optimistic music child. I realized that her changes were subtle, and I needed to be sensitive enough to her response to capture more music clues. Once her musical cues were developed and extended, she was likely to resonate with them. The song I wrote for Inn was composed of a repetitive chorus and a verse. The verse is the framework of the song, in which simple melody and lyrics create a specific and concrete context.



Figure 3: Inn's music fragment from session #2



Figure 4: Artistic Response of session #2

Session three

Inn was brought into music therapy by a teacher assistant. Inn's eyes repeatedly directed towards the tambourine within a five-minute CVI exercise. This time I did something different with switch work: I put my hand under her hand to activate the switch together. Instead of pushing the switch away, she showed a gentle hand to support co-active movement. I assumed

that teaming-up together might be a way to improve Inn's tolerance to objects. I played Inn's music (Figure 5) I wrote in advance on the guitar. When I sang the chorus, Inn was excited, as demonstrated by clapping, laughing, and vocalizing. I found that the faster I played, the more active Inn became. Interesting rhythm changes made her more focused, and she was more responsive to the direction of "Now get ready to stop."

In addition, Inn also benefited from using the co-active method to play the shaker. I put my hand under her and rubbed the beads on the shaker. She was able to play for about five seconds with my support, longer than before. However, according to the observation, Inn did not show the comprehension of turn taking. Whether it was her turn or mine, she kept vocalizing and reaching. In general, this was the best session we had. Inn was still giggling when she left the classroom.

It was the first time I saw such a sweet smile from Inn, and the first time I felt the strongest connection with her. I clearly remembered that my energy level increased with her activity during the session. As shown in Figure 6, I felt that Inn and I were using music to communicate and listen back and forth. As a therapist, the surprises that clients give us can change our day. Of course, through this case load, I have gained more and more confidence and I would like to work with groups of children and adolescent in the future.

Inn's music

♩ = 110

This is Inn - 's mu- sic Inn - 's mu- sic
sing it fast or slow - This is Inn - 's mu- sic
Inn - 's mu- sic sing it fast and slow -
Yee - - Yee - - Yee - - Yee Yee - -
Ah - - Ah - - Ah - - Ah Ah - -
Yee - - Yee - - Yee
Ah - - Ah - - Ah

Figure 5: Figure 1: Inn's pitched phrase from session #3

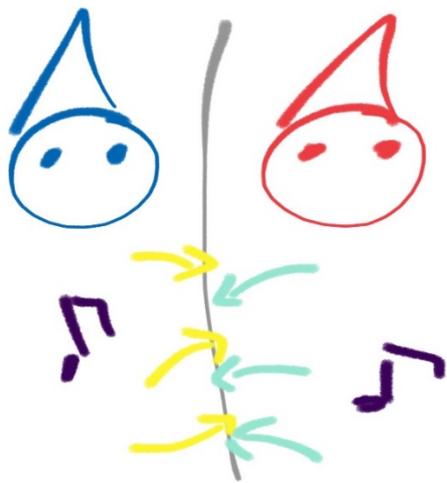


Figure 6: Artistic Response of session #3

Session four

As a preparation, I discussed successfulness of activating the switch by using the movement of light to help Inn's focus with a team member. It took us one minute to do the CVI exercise, and Inn saw the tambourine in only 30 seconds with the help of highlighting. In the past, under the verbal and tapping prompts, Inn needed more waiting time to activate the switch. This time with a flashlight on the switch, Inn completed the task in a shorter time. When Inn's music was presented again, Inn's facial expression seemed to tell me, "I'm looking forward to this interesting song." She was still active and responsive to the accelerating beat. In addition, she had a new musical phrase (Figure 7) which was composed of a descending scale.

Based on my good relationship with Inn last week, I kept the co-active method in the instrument playing structure. Surprisingly, Inn hit the tambourine six times on her own, although I could not confirm whether it was functional or purposeful. Next, I used specific instructions to model turn taking. When it was my turn, I patted Inn's hand and told her: "This is my turn, listen, listen." I did not start playing until she stopped reaching out and clapping. I repeated this process about six times. Near the end of the session, Inn looked quieter.



Figure 7: Inn's pitched phrase from session #4

Session five

In order to enhance the relationship with Inn, I went to her cottage and transferred her to the music therapy classroom. As usual, we spent a few minutes on the CVI exercise. Time spent with Inn to varied from session to session and was directly related to her state of comfort and alertness on a given day. I changed the musical phrase composed of the descending scale that Inn

appeared in the last session into the chorus of Inn's music (Figure 8). Inn enjoyed clapping with the rhythm and tried several times to speed up so I could follow her. I found that her movements and changes in music were somehow related. Under observation, she used clapping to match slow music and rubbing hands to match fast music.

Inn's greatest progress showed in playing instruments. During my turn to play the tambourine, she was able to keep quiet most of the time. When she activated a switch paired with "my turn," she returned to playing and reaching. While she still needed to give repeated verbal cues, her efforts were always honored. After playing the instrument, Inn put the tambourine in the finish bin under my physical assistance to indicate that an activity was finished.

Compared with Inn's first session, I realized that both Inn and I were making progress. To some extent, Inn has taught me a lot. The most crucial thing was being natural with our clients. Initially, I was disappointed by Inn's resistance, and such negative emotions unconsciously affected my state. I strongly hoped that Inn could give me responses and then I could impose my expectations on her. In fact, clients are always themselves. The goal of music therapy is never to change clients into other people, but to always be with them, helping them explore their infinite potentials. The last artistic response (Figure 9) shows what I want to say to my future self: "Try to always follow your clients."

Inn's music 2

♩ = 110

This is Inn - 's mu- sic Inn - 's mu- sic sing it fast or slow

8 - This is Inn - 's mu- sic Inn - 's mu- sic sing it

15 fast and slow - Ya - - - Ya - - - Ya - - -

20 Ya - - - Ya - - - Ya - - - Ya - - - Ya - - -

23 Now get ready to stop

Figure 8: Figure 1: Inn's pitched phrase from session #5

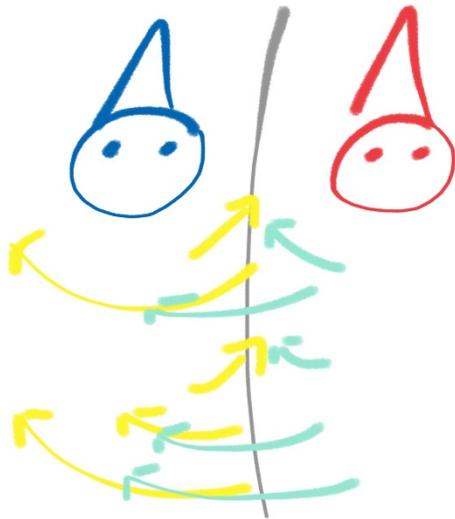


Figure 9: Artistic Response of session #5

Discussion

Inn has continued making progress towards communication and music therapy goals this month. When an instrument or switch was provided, Inn seemed to be more successful in locating and feeling it by using lights to highlight objects. Once Inn felt the switch, she was able to gently activate it before pushing it away. While it was unclear as to Inn's comprehension regarding switch content, her ability to accept items has observably improved. In structured music activities, Inn used a switch with a "more" tangible symbol to request continuance of an activity, and would often benefit from extended wait time, repeated verbal cues, along with tap and touch cues. Inn was also able to activate a switch, paired with "it's my turn", to request a turn on an instrument. Cue levels varied from session to session, and there was some decrease in cue levels at the end of this month.

It is hard to tell if Inn's social and interactive abilities have been improved in this month, because I did not have the chance to see her socializing with others in other settings such as other classrooms or at home. It is also hard to do neural tests on her brain to get data, because we do not have these instruments in the school setting. As shown in Table 1, through observation of her response to some specific aspects, we can observe the how responsive and active Inn presented than before attending the sessions. I had been working with her for two months before the intervention was executed. These two months have paved the way for our therapeutic relationship. After this new intervention was introduced, I clearly felt that her passion for music therapy reached a peak. She reduced her time for self-entertainment and showed more willingness to focus on the music experience and interaction.

Table 1: Inn's Observed Responses to Intervention

Date/Reaction	Pause when I say "now get ready to stop"	Pause when hearing music cadence	Repeat Musical Fragment	Pitching in key	Follow the dynamic change
1/30	3/5	1/3	1	5	3/5
2/6	3/6	2/4	1	6	4/5
2/13	5/6	2/4	2	4	4/5
2/20	5/6	2/3	0	7	5/5
2/27	6/6	2/3	1	6	4/5

Her benefits from relationship-based intervention are mainly reflected in two aspects dominated by cognitive function: language and behavior. In terms of language, the resonance achieved by exploring voice has expanded her vocal span, and I have seen her constantly changing the stereotyped repetitive vocalization. Her voice pattern from the beginning of "Ah, Ah, Yee, Yee" later added with melody "Ya, Ya". In terms of behavior, different levels of co-active movement and physical touch increase the possibility for her using objects in functional and purposeful ways. Through the development of music therapy intervention and analysis of the results of intervention, as a learner, I have also gained from many aspects.

First, I learned from direct contact with clients that therapeutic relationships play a crucial role as facilitators of intervention outcomes. Non-verbal children with visual impairment lack the means to communicate with the outside world, so the primary task of therapists is to use music to build connections to fill this hole. Once trust is established, music can have a more positive and profound impact on these children.

Second, self-reflection helped me to identify how subjective emotions as a therapist affected my work attitude and style. It's hard to be non-judgemental and highly sensitive when working with clients when I was frustrated with their resistance. Once I got positive response from clients, self-satisfaction and increased work enthusiasm would be reflected in the music to make the music more infectious.

Furthermore, literature review let me have a further understanding of the structure and significance of music therapy in the field of special education. I am more convinced that music therapy is an irreplaceable service for children with developmental disabilities, because music can not only stimulate children's creativity but also help them achieve non-musical goals. What's more interesting is how music contributes to connecting children with visual impairments to the outside world. Although the research related to this topic is limited, I became interested in exploring the relationship between the two fields. I hope that music therapists who work with children with visual impairments like me can exchange ideas and learn from each other to promote the development of music therapy.

References

- Geretsegger, M., Elefant, C., Mossler, K., & Gold, C. (2014). Music therapy for people with autism spectrum disorder. *The Cochrane Database of Systematic Reviews*, 6, CD004381. <https://doi.org/10.1002/14651858.CD004381.pub3>
- Salvador, K. ed., & Pasiali, V. (2017). Intersections between music education and music therapy: Education reform, arts education, exceptionality, and policy at the local level. *Arts Education Policy Review*, 118(2), 93–103. <https://doi-org.ezproxyles.flo.org/10.1080/10632913.2015.1060553>

- Wheeler, B. (2018). The therapeutic use of harp: Modalities, programs and training. *American Harp Journal*, 37.
- Elpus, K. (2015). Music teacher licensure candidates in the United States: a demographic profile and analysis of licensure examination scores. *Journal of Research in Music Education*, 3, 314.
- Ryan, A. M., Berman, R. F., & Bauman, M. D. (2019). Bridging the species gap in translational research for neurodevelopmental disorders. *Neurobiology of Learning and Memory*, 165. <https://doi-org.ezproxyles.flo.org/10.1016/j.nlm.2018.10.006>
- Mendelson, J., White, Y., Hans, L., Adebari, R., Schmid, L., Riggsbee, J., Dawson, G. (2016). A preliminary investigation of a specialized music therapy model for children with disabilities delivered in a classroom setting. *Autism Research and Treatment*. <https://doi-org.ezproxyles.flo.org/10.1155/2016/1284790>
- Thompson, G. A., & McFerran, K. S. (2015). Music therapy with young people who have profound intellectual and developmental disability: Four case studies exploring communication and engagement within musical interactions. *Journal of Intellectual & Developmental Disability*, 40(1), 1–11. <https://doi-org.ezproxyles.flo.org/10.3109/13668250.2014.965668>
- Swift, S. H., Davidson, R. C., & Weems, L. J. (2008). Cortical visual impairment in children: Presentation Intervention, and Prognosis in Educational Settings. *TEACHING Exceptional Children Plus*, 4(5). Retrieved from <https://search-ebSCOhost-com.ezproxyles.flo.org/login.aspx?direct=true&db=eric&AN=EJ967486&site=eds-live&scope=site>

- Sara Marta Knapik-Szweda. (2019). The significance of the process of music therapy for children with multiple social and communication disabilities. *Voices*, (1). <https://doi-org.ezproxyles.flo.org/10.15845/voices.v19i1.2732>
- Mossler, K., Gold, C., A, szmus, J., Schumacher, K., Calvet, C., Reimer, S., & Iversen, G. (2019). The therapeutic relationship as predictor of change in music therapy with young children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, (7), 2795. <https://doi-org.ezproxyles.flo.org/10.1007/s10803-017-3306-y>
- Wetherick, D. (2014). Music therapy and children with a language impairment: Some examples of musical communication in action. *Psychology of Music*, 42(6), 864–868. <https://doi-org.ezproxyles.flo.org/10.1177/0305735614547716>
- Aigen, K. (2005). *Music-centered music therapy*. Retrieved from <https://ebookcentral-proquest-com.ezproxyles.flo.org>
- Park, H. Y., & Chong, H. J. (n.d.). A comparative study of the perception of music emotion between adults with and without visual impairment. *PSYCHOLOGY OF MUSIC*, 47(2), 225–240. <https://doi-org.ezproxyles.flo.org/10.1177/0305735617745148>
- Metell, M., & Stige, B. (2016). Blind spots in music therapy. Toward a critical notion of participation in context of children with visual impairment. *Nordic Journal of Music Therapy*, 25(4), 300. Retrieved from <https://search-ebshost-com.ezproxyles.flo.org/login.aspx?direct=true&db=edb&AN=117577075&site=eds-live&scope=site>
- Kern, P. (2006). Connecting and learning through music: Music therapy for young children with visual impairments and their families. *Music Therapy Today*, 3(1) 99– 105. Retrieved

- from <http://www.wfmt.info/Musictherapyworld/modules/mmmagazine/showarticle.php?articletoshow=162>
- Smith, J. C. (2018). Hidden in plain sight: A music therapist and music educator in a public school district. *International Journal of Music Education, 36*(2), 182.
- Pellitteri, J. (2000). The consultant's corner: Music therapy in the special education setting. *Journal of Educational & Psychological Consultation, 11*(3/4), 379–391. https://doi-org.ezproxyles.flo.org/10.1207/S1532768XJEPC113&4_06
- Rickson, D. J., & McFerran, K. (2007). Music therapy in special education: Where are we now? *Kairaranga, 8*(1), 40–47.
- Aigen, K. (2014). Music-centered dimensions of Nordoff-Robbins music therapy. *Music Therapy Perspectives, 32*(1), 18–29. <https://doi-org.ezproxyles.flo.org/10.1093/mtp/miu00>
- Boxill, E. H., & Chase, K. M. (2007). *Music therapy for developmental disabilities* (2nd ed.). Pro-Ed.
- Baxter, H. T., Berghofer, J. A., & MacEwan, L. (2007). *Individualized music therapy assessment profile: Imtap*. Retrieved from <https://ebookcentral-proquest-com.ezproxyles.flo.org>
- Swift, S. H., Davidson, R. C., & Weems, L. J. (2008). Cortical visual impairment in children: Presentation intervention, and prognosis in educational settings. *TEACHING Exceptional Children Plus, 4*(5)
- Knapik-Szweda, S. (2015). The effectiveness and influence of vocal and instrumental improvisation in music therapy on children diagnosed with autism. Pilot Study. *Journal of Education, Culture & Society, 1*, 153.

THESIS APPROVAL FORM

Lesley University
Graduate School of Arts & Social Sciences
Expressive Therapies Division
Master of Arts in Clinical Mental Health Counseling: Music Therapy, MA

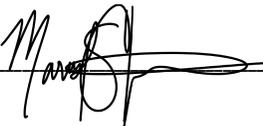
Student's Name: Zishan Xiong

Type of Project: Thesis

Title: Music Interventions for a Non-Speaking Child with
Developmental Disabilities: Development of relationship-based
music therapy method in school settings

Date of Graduation: August 17, 2020

In the judgment of the following signatory this thesis meets the academic standards that have been established for the above degree.

Thesis Advisor:  _____