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The effects of music on communication and behavior in children with autism

Cheryl Ann Nicolosi

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THE EFFECTS OF MUSIC ON COMMUNICATION AND BEHAVIOR IN CHILDREN WITH AUTISM

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education

by
Cheryl Ann Nicolosi
March 2006
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BEHAVIOR IN CHILDREN WITH AUTISM

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Approved by:

Gary M. Sherwin, First Reader

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ABSTRACT

This study examined the effects of music on children with autism and their communication and behavior. The research was conducted at a university located in Los Angeles County in Southern California. The music clinic addresses the needs of children and adults with developmental disabilities including autism. The research was also conducted in different school districts in Southern California, including San Diego and Riverside Counties.

The hypothesis in this study predicted that music would enhance communication and decrease inappropriate behaviors. The results supported this hypothesis and also supported the research in the literature that music lowered the anxiety levels in all individuals, resulting in increased learning. Study observations were 1) the repetitive nature of music elicited structure, 2) different strategies in music therapy encouraged children with autism to generate a verbal response, 3) children engaging in meaningful activities in music therapy showed a decrease in inappropriate behaviors and an emergence in appropriate social skills, and 4) music gave structure and allowed for creativity in a non-threatening way.
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CHAPTER ONE
INTRODUCTION

General Statement of Problem

The implementation of music may lead to the enhancement of communication and appropriate social skills in children with autism and other children with disabilities. Music has the power to calm and to reduce anxiety levels. It also can stimulate by increasing the norepinephrine levels in the brain chemistry which promote attention processing (Panksepp, 1999). Listening to music decreases distractibility and increases the level of attention so that the individual can perform cognitive skills more easily and efficiently (Morton, Kerschner, & Siegel, 1990). The structure of music and the repetition of its words sets the stage for the capability of prediction of future activities. This kind of structure is a vital educational strategy to implement in the teaching of children with autism. Since children with autism have a neurological impairment and have sensory processing difficulties, the benefits of implementing music in their
treatment has demonstrated positive results in the area of communication and behavior (Borczon, 2000).

When a music therapist first initiates and makes contact with a child with autism, the child takes the first step in establishing a relationship with the therapist and building a level of trust. A social connection is developed and through improvisational methods, the child begins to make contact with another human being which is very difficult for children with this disability. The therapist then mirrors whatever the child is doing and self-expression and creativity begin to emerge. An improvement in motor skills is another benefit in implementing music therapy (Borczon, 2000).

Music therapy can be applied with an individual child with autism or implemented in a group situation in the classroom. It can be used with children with many different types of disabilities. It can be applied in a clinical setting or an educational setting. After a designated number of music therapy sessions, the information is then generalized and the music cues are faded.

The problem that many individuals are facing in requesting music therapy services is the lack of knowledge
of music therapy and its benefits in the field of education. It is still not recognized by many school districts in Southern California as a related service because of ignorance on the part of administrators and educators. The yearly budget for education has had an impact on obtaining these related services.

**Significance of the Thesis**

In 1998 the American Music Therapy Association united the American Association for Music Therapy founded in 1971 and the National Association for Music Therapy founded in 1950. The goal of this association is to advance the public awareness of the benefits of music therapy by gathering further research in the positive results yielded by implementation of music therapy. In the educational realm, music therapy is recognized as a service that provides a significant motivation and is a tool in the achievement of nonmusical goals stated in the Individual Education Plan (I.E.P.).

This applied research will show that music therapy is an effective tool in the area of communication and behavior with children with autism and children with other disabilities. Music therapy encourages turn taking and
playing and singing together which enhances communication skills immensely and increases appropriate social skills in a nonthreatening way. Because music is processed in both hemispheres of the brain, music can enhance cognitive functioning and may aid in the remediation of speech and language skills (Staum, 2000). The rhythmic component of music helps in organizing the sensory system in individuals diagnosed with autism (Edgerton, 1994). Therefore, auditory-processing and motor-processing skills are all enhanced. Music also provides structure which establishes a sense of security so the individual with autism may be encouraged to attempt new tasks that may have been threatening without the music (Brunk, 1999).

Since music processing is found throughout the brain, music may cue speech and provide a means for expressive and receptive communication (Brunk, 1999). Through an improved attention span, fine motor skills develop and academic performance increases. Therefore, it would be beneficial to allow music therapy to be a related service in the I.E.P. and to aid in the successful attainment of nonmusical goals.
Research Questions

1. Is music an effective tool in developing communication in children with autism and other children with disabilities?

2. How can music be implemented to have the most effective results in developing communication in children with autism and other children with disabilities?

3. Will negative effects occur from implementing music with children with autism and other children with disabilities?

Limitations and Delimitations

This study is a qualitative design based upon observational research and interviews. The data collected from this pilot project will inform and lead to future research.

Limitations

In the interview and observation process, the initial identification of music therapists was informative. As the contact phase of the process continued, the number of music therapists for the interviews and observations was limited.
A more rigorous plan needed to be implemented to further locate willing participants for this study. Locating and contacting music therapists developed their own emerging issues, such as no responses or lack of experience due to working with a different group of clients than what was needed in this case study. The list which the American Music Therapy Association (AMTA) generated only stated names of music therapists who were members of the AMTA. Therefore, many music therapists were not contacted due to lack of contact information. Another limitation was the lack of reciprocity and acknowledgement of email and phone messages. The number of interviews with music therapists was limited to four. A few music therapists who did not respond did not focus or participate in music therapy with a pure population of children with autism. Their area of specialty was working with geriatric patients or other adults with developmental disabilities. This information further limited the selection of interviews with music therapists who performed therapy with children with autism. Further pursuit of willing parents to allow their children to be observed for this study was another limitation to this research.
Scheduling interviews with music therapists took on its own challenging sequence of events. The limited amount of music therapists in Riverside County brought ventures into the surrounding counties in Southern California. These counties include San Diego, Los Angeles, San Bernardino, and Orange County. Traveling to these different counties to interview and observe music therapists needed to be scheduled around the actual times of the music therapy sessions with these children. Work-release time to complete these observations and interviews needed to be proposed and approved since these sessions occurred during the typical school schedule and work week, Monday through Friday.

The limit of children with autism also posed a problem in this research. The music therapists needed to inform the parents about this study. Permission to observe the music therapy sessions was needed and many parents declined to participate due to litigations occurring in Southern California in the special education area, especially with children with autism.

Another limitation was the language barrier between the interviewer and the Japanese respondent who spoke English as a second language. The difficulty was
transcribing the interview from the tape as well as lack of clarity in speaking English during the interview.

Delimitations

In designing the methodology to be implemented for this research, the lack of hours of observations of music therapy for children with autism posed a threat to this research. Therefore, the methodology includes both interviews and observations of individuals in different disciplines in the implementation of music with children with autism. A broader sample of individuals was developed to include instructional assistants, a teacher, a parent, and an individual with Asperger’s Syndrome, a form of high-functioning autism. Therefore, the research was fully inclusive and included interviews with individuals in other disciplines. The research imposes a global view of music application in different aspects of the life of a child that has autism. It also entertains the theory that information needs to be generalized so that it has applicable meaning to an individual’s life.
Assumptions

The following assumptions apply for this thesis:

1. Certain types of music create a calm environment and, therefore, reduce anxiety levels and have a calming effect on a child with autism.

2. Music creates a consistent, stable, and predictable environment with routine which provides structure for a child with autism.

3. Familiar cues from the melody, harmony, and rhythm in music provide comfort in a stressful or unfamiliar setting and provide predictability.

4. Music can facilitate learning and communication by elevating norepinephrine levels in the brain which control the attentional processes (Panksepp, 1999).

5. Music processing is found throughout the brain and the right side of the brain which controls rhythm. It helps the left side to develop speech and language.

6. Music, language, and movement are intertwined in a child's development and cognitive skills, such as vocabulary building and problem solving are enhanced through movement stories (Landalf & Gerke, 2000).
7. Since social encounters are threatening to a child with autism, learning social cues with music accompaniment will reduce anxiety because of the consistency with the music, and participants feel emotionally safe (Diamond, 2000).

8. Music is an effective tool to encourage development in language, social/emotional, cognitive/learning, and perceptual/motor areas (Nordoff & Robbins, 1964).

Definitions of Terms

For this thesis, the following definitions apply:

1. AUTISM is a neurological impairment caused by a brain dysfunction which affects 1 out of 500 children and causes a lifelong developmental disability.

2. BRUSH THERAPY is a technique applied in the treatment of children with autism that occupational therapists use in their sessions in which a small hand brush is rubbed over the child’s body using a specified directional format.

3. MUSIC THERAPY is a technique used in the treatment of children with autism to promote development in language and positive changes in behavior.

4. MELODIC INTONATION THERAPY (M.I.T.) is a prompting strategy for sound production and expressive language development. The music therapist incorporates this...
strategy by speaking in a musical manner with two strong melodic notes, high and low, and two temporal notes, long and short.

5. PICTURE EXCHANGE COMMUNICATION SYSTEM (P.E.C.S.) is a visual means of children with autism and other communication difficulties to communicate in a meaningful and expressive way by exchanging a picture with a communicative partner with the positive outcome of spontaneous communication.

6. INDIVIDUAL EDUCATION PLAN (I.E.P.) is a written document in which a child study team decides on goals for a student to work on.

7. INDIVIDUALS WITH DISABILITIES EDUCATION ACT (I.D.E.A.) is a legislative document that gives people with disabilities rights to a proper education and access to many different things in their community so they can live as independently as possible.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

Autism

Autism is a neurological disorder caused by a brain dysfunction which affects 1 out of 500 children. Autism affects more boys than girls. They represent 80% of the Americans that have autistic disorders (Cowley, 2003.) Researchers studied groups of people and established an interesting pattern. Newborn girls gazed longer at faces than at mechanical mobiles while the boys gazed longer at mechanical mobiles than at faces (Cowley, 2003). In another study at the UCLA's Non-Human Primate Laboratory, male monkeys favored a ball and car while the female monkeys favored the doll and pot (Cowley, 2003). Since one of the deficits in children with autism is social skills, and children with autism are very detail oriented with a preference for parts over wholes and a tendency to process information one piece at a time, these studies may lead us toward more knowledge and understanding of this lifelong developmental disability and why there are more boys diagnosed with autism at this time.
Genetic factors cause most cases of autism which encompasses a spectrum from normal to abnormal. This complete behavioral disorder usually appears before a child turns 3 years old (Rodier, 2000). According to Patricia Rodier, a renowned embryologist, the results of a study suggested that autism originates in the early weeks of pregnancy when the embryo's brain and the rest of its nervous system are just beginning to develop. She based this suggestion on Stromland, Nordin, Miller, Akerstrom, and Gilberg's (1994) observation that about 5% of thalidomide victims had autism, which is about 30 times higher than the rate among the general population. Autistic traits often show up in a mild degree in family members, such as parents, siblings, and close relatives (Grandin, 1996). Some of these traits are intellectualism, shyness, learning disabilities, depression, anxiety, panic attacks, Tourettes Syndrome, and alcoholism. There is also a high correlation between Asperger's Syndrome and manic depression. Siblings of people with autism have a 3% to 8% chance of being diagnosed with the same disorder (Rodier, 2000). Studies of twins in the United Kingdom confirmed that autism was influenced by genetic as well as environmental factors. When identical twins shared the
same genes, both twins should have had a 100% chance of being diagnosed with autism. Instead only one twin was diagnosed with autism and the other twin only had a 60% chance of having autistic traits or symptoms (Rodier, 2000). Einstein's family history included a high incidence of autism, dyslexia, food allergies, high intellectual aptitude, and musical talent. He possessed many autistic traits (Grandin, 1996).

Autism has a broad spectrum of diagnostic categories. Each category merges into the next so there are no definite boundaries. Kanner/Asperger Type is one form of autism. Asperger's Syndrome is the mild type of high-functioning Kanner-type autism. Temple Grandin is an example of a person diagnosed with Asperger's Syndrome which is on the high end of the autistic continuum. People with Asperger's Syndrome have normal speech and thinking patterns. Most people with autism are visual thinkers, but once again not every autistic individual is packaged nice and neatly into a specific category. There are always exceptions. Some Kanner/Asperger types may exhibit rigid thinking patterns coupled with a calm temperament while some display normal thinking patterns with lots of anxiety and sensory issues (Grandin, 1996).
Another type of autism is Regressive/Epileptic. Many of these individuals are low-functioning with low intellectual quotient (I.Q.) scores. Some may have mental retardation and their ability to understand speech and to communicate is very difficult. They may pass a standard tone test, but not hear complex speech sounds (Grandin, 1996).

Many of these children experience subtle epileptic seizure activity, such as staring. Their auditory sensory processing may be so badly jumbled that they do not understand receptive speech. They may need to learn visually. Once they learn to read, they may learn to speak. Aggression may be exhibited because of these seizures. Some behaviors are directly related to frustration due to lack of communication, painful auditory stimuli, or unawareness of a change in the routine (Grandin, 1996).

Some children with autism can only use one sensory channel at a time. Donna Williams, an individual with autism, explained that when people spoke to her, their words became all jumbled (Williams, 1992). She needed to learn to have her sensory systems work together. Through brush therapy, she integrated her sensory processing. When
she was relaxed, she could focus on one sensory channel at a time.

In Stromland et al’s 1994 study, all of the subjects born in the late 1950s and early 1960s exhibited some of the malformations for which thalidomide is known (Stromland et al., 1994). Some of these deformities include stunted arms and legs, missing ears and thumbs, and neurological dysfunctions of the eye and facial muscles. In this study it was discovered that most of these victims with autism had anomalies in the external part of their ears but no malformations of the arms or legs. This pinpointed the injury to have occurred 20 to 24 days after conception. It was also confirmed in this study that the motor neurons of the cranial nerves are located in the brain stem and develop at the same time as the external ears. All the subjects with autism had abnormalities of eye movement or facial expression, which are operated by these cranial nerves. These thalidomide results draw attention to the brain stem. By studying the interaction of environmental factors with genetic background we can learn more about the brain damage that underlies autism.

The embryo’s nervous system is starting to form at 20 to 24 days after conception (Rodier, 2000). Since autism
is a neurological disorder, sensory-processing problems need to be identified and addressed. Autism is a disorder in which some parts of the brain are underdeveloped while other parts are overdeveloped. Individuals with autism have a defect in myelinization. Myelin is the insulation around the nerve cells. The lack of this insulation may be the cause of the mixing of sensory input from the eyes and ears and why some children with autism may seem to “space out” (Grandin, 1996).

Temple Grandin shares her experiences with autism and how each child with autism responds differently due to a variance in the pattern of neurological impairment and the severity of the neurological problem (Grandin, 1996). As a child she was very sensitive to sounds and visual stimuli. Sometimes she appeared to be deaf, so she would choose to shut out or “tune out” the painful sounds by engaging in repetitive behaviors for which children with autism are very well known. The fear of a noise that hurts the ears may lead to major temper tantrums and bad behaviors.

She claims that her ears are like a microphone that amplifies sounds. If she tries to tune out the background noise in a noisy environment such as the airport, she may unintentionally tune out the voice she is speaking with on
the telephone. She also states that children with autism need to be protected from loud noises. Sudden loud noises hurt just the same as a dentist's drill that touches a nerve. This is why children with autism cover their ears. An environment that is conducive to learning must also take into consideration the auditory sensitivities that a child with autism experiences. Loud noises may be compared with that of a jet engine blasting through the child's brain (Grandin, 1996).

Methodologies Implemented in the Treatment of Autism

With the fear of noises and the intolerance of painful auditory stimuli, it seems logical to state that self-
coping strategies need to be taught to a child with autism so that he can still successfully achieve goals set in an educational setting or environment. Relaxation techniques coupled with music and self-guided imagery can be introduced and taught at many different levels so that a child with autism can benefit and reach his maximum potential for learning. By channeling auditory stimuli in the environment with melody, harmony, dynamics, and rhythm, a child is allowed the opportunity to fulfill his maximum
potential for growth. As Dr. A. Tomatis states, one must hear a sound first in order to produce that sound (Tomatis, 1988). A child will protect himself from sensory overload.

By implementing techniques or methods which address sensory input, such as auditory integration training, 60% of children with autism may become desensitized to auditory sensory overload. One such program of auditory stimulation was developed by Dr. A. Tomatis, a French Ear, Nose, and Throat Specialist. The goal of this auditory stimulation, the Tomatis Method, is to develop or reestablish communication when it has been lost or impaired. The vestibule, which is part of the inner ear, controls balance, coordination, and muscle tone, as well as processes sensory input. When a child feels overwhelmed by too much sensory input, this vestibular sensory-integration processing is not functioning properly. At this point, a child may protect himself from the sensory overload by isolating himself. The goal of the Tomatis Method is to regulate the vestibular function and assist the child with autism to restore the desire to "tune in" and to listen to the outside world. Tomatis found that in order to produce a sound, one must hear that sound first. The ear controls the voice. So he developed an electronic device that both
filters sounds and switches them on and off. He used special headphones in connection with a vibrator that was placed on the top of the skull. This vibrator transmitted sounds directly to the bone. Filtered music or a voice is gently transmitted to the child.

Since many children with autism are hypersensitive to sounds, the intensity of their pain can be unbearable. In response to their hypersensitivity, they may respond by placing their hands over their ears, self-stimulate, or have temper tantrums. The skin and bones are equally conducive of sounds. Since children with autism do not have the protective mechanism that other people do, the Tomatis method helps to desensitize them to sounds. By engaging in auditory training for 10 to 15 days, 2 hours per day, a child with autism may learn to adapt to our world.

Music-based therapies are becoming more prevalent in the treatment of autism. Besides the Tomatis method, other Auditory-Integration Training (AIT) approaches are utilized. There are some well-controlled data available for AIT (Rimland & Edelson, 1995). But these data alone are insufficient to support the claim that the filtering of music or modulation is critically essential for the
positive outcomes of music therapy. More research needs to be completed. Researchers found that there is as much benefit from listening to unfiltered and unmodulated music as there is from AIT music (Bettison, 1996). It does seem quite likely that certain music-based experiences do offer positive outcomes for the growth and development of children with special needs, including children with autism.

An experiment was conducted on four separate groups of chicks. Each group was exposed to four auditory conditions. Two groups received musical treatment, one with modulated music and one with unmodulated music for 10 successive days (1/2 hour in the morning, 1/2 hour in the afternoon). One control group received no music and the other was exposed to an audiotape of female and male voices (Panksepp, 1999). The stimulation had a mild effect on the facilitation of growth of the chicks but has had a big effect on the brain chemistry. Two days following the music treatment, brain norepinephrine (NE) was largely elevated. NE promotes attention processes within the brain. Whether these positive effects are attributed by the music or fluctuating sounds still needs to be researched. Music, in itself, was found to have beneficial effects on the
neurochemical components. It is widely accepted that music is the “language of the soul,” and provided in limited doses and modest volumes, cannot hurt children.

Music Therapy

Music is a “universal language” which has been around since the beginning of time. Music has the power to calm and to stimulate and has been applied as a method of treatment. This application of music is music therapy which can create and promote positive changes in human behavior (Staum, 2000). It was first established in the 1940s with the work of Paul Nordoff, Clive Robbins, and Juliette Alvin. It is used as a tool to encourage development in language, social/emotional, cognitive/learning, and perceptual/motor areas. Music provides a direct route, avoiding the obstacle of speech to feelings and emotions. Music therapy offers an accessible medium of expression with which participants feel emotionally safe (Diamond, 2000). Music is the art of combining tones to form expressive compositions. Since children with autism express a strong interest in music, it may help to unlock and open up the world of a child with autism. The child will become secure with an object such
as the musical instrument before becoming secure with a person. Since music is a non-verbal form of communication, some children with autism hear the tones and can sing even though they may not speak. It is not certain how children with autism hear, process, and respond to music. Children with autism display unusual sensitivities to music. Because music stimulates all the senses, it facilitates many developmental skills. Children may engage in singing, moving, and playing.

When the child becomes familiar with the music therapy session, the child will anticipate certain parts of the session. When the therapist sings a song and stops, the child will often give cues to start singing that song again or will fill in the missing words. This is wonderful progress because the child is "awake" and in our world. Progress may also suddenly cease. When this happens, the child may be internalizing all these positive experiences. This sudden stop needs to be acknowledged, so the child is not pushed "too" hard and put on overload. The music therapy sessions continue at a much slower pace with the same program intact. While the child is processing the information, he or she is consolidating new modes of
function and taking time to equalize his/her development (Borczon, 2000).

California State University Northridge (CSUN) has a music therapy clinic for children and adults with disabilities, including autism (Borczon, 2000). The current functional level of the child is used as a starting point for treatment. First, the child becomes curious with the instruments being used, and by experimentation, the child randomly makes sounds with these instruments. The music therapist attempts to accompany the sounds the child is creating. The therapist does this by responding to the child’s sounds by mirroring his movements, music, vocalizations, screams, and actions. This style of teaching encourages creativity and self-expression in motor, vocal, emotional, and social areas. A social connection or bridge is developed which leads to a relationship between the child and therapist, which in turn builds trust (Borczon, 2000). Research from a study of children with autism, ages 7-to-12 years old, with one-on-one music therapy for approximately 20 weeks from this clinic, has demonstrated an increasing level of expressive communication skills of children with autism. The claim that music therapy can help children with autism is based on clinical
documentation and the recognition of benefits by parents, teachers, and other professionals. It is important to take into account the particular sounds that each child makes and finds nonthreatening (Diamond, 2000). Some may prefer the drum and some may prefer the guitar or the piano. Some may prefer environmental sounds such as running water or the wind blowing through the trees.

Since music stimulates all of the senses and involves the child at many levels, music therapy facilitates many developmental skills. Through the joy of play, which occurs naturally and frequently, quality learning takes place. Socialization, self-expression, communication, and motor development are encouraged through music. A specific case study was conducted using music to help to externalize internal experiences of a boy with autism who engaged in compulsive rocking. It was found that changes of tempo could either slow the rocking down or speed it up. If syncopations were played against it, he stopped in confusion or rocked harder. By listening to the musical rhythm, he turned his internal experience of rocking into a conscious external experience (Nordoff & Robbins, 1971).

A music therapist secures children with autism in their responses to music and helps to sustain them by
having the children naturally use their body and voice in a music therapy session (Gaston, 1968). By using percussion, or tuned instruments or voices, the therapist encourages the children to create their own musical language. Simple songs, pieces, or musical styles are implemented to hopefully encourage spontaneous musical communication in some way. A two-way communicating relationship is often stimulated which is the ultimate goal. Even though there are approximately more than 200 registered professional music therapists, music therapy can be performed without being trained as a musician (Prevezer, 1990). Skills such as shared play, turn-taking, listening, and responding to another person can be incorporated with music therapy sessions.

Social interactions can stimulate and develop preverbal dialogue which leads to verbal communication and meaningful language development. Participation in music allows children with autism to explore their emotions (Brown, 1994). There is a distinct difference between music lessons and music therapy. In music therapy, children are not taught to play an instrument, even though instrumental playing may be inspired. Musical skills are a
secondary effect and not the primary purpose of the therapy sessions.

Parallel music activities may be introduced at first to support the objectives of the child such as the need to socially interact with others. Musical games such as passing a ball back and forth to music or playing sticks with another person may stimulate this social interaction. Eye contact can be addressed by clapping hands near the child’s eyes and having the child imitate the activity. The development of language and remediation of speech can also be addressed through the parallel music activities. Speech can range from complete mutism to grunts, screams, cries, and humming. Echolalia may be a form of speech for higher level autistic speech. Some children with autism may sing even though they do not speak. Songs with simple words and repetitive phrases can assist the child with autism in his speech. For example, if you wanted the child to check his schedule to see what his next activity was to complete, an individual working with him could sing, “It’s time to check the schedule, time to check the schedule, time to check the schedule, check it now.” The person singing could use the tune to the Mulberry Bush or make up a new tune.
The Rhythmic Entrainment Intervention (REI) Institute is a research organization and therapy provider which is continually engaged in research on the effects of musical rhythm on the central nervous system. The institute offers a music therapy program which uses rhythmic patterns performed on a hand drum. This drumming helps individuals with neurobiological disorders, such as autism. Jeff Strong, the director of the institute has studied African drumming and its beneficial impact on calming the nervous system. Since autism is a neurological impairment, the unique blend of ancient therapeutic drumming techniques and modern music and rhythm can facilitate a very calming effect on children with autism. Playing calming rhythms can alleviate a tantrum or emotional outburst, aid in sleeping, aid in transitions from one activity to another, aid in focusing attention, and alleviate self-stimulatory behaviors (REI Institute, 1999).

Children with autism may react to sounds very differently. A child may become agitated by the ticking of a clock, but not show a startle response to a loud noise (Schreiberman, 1988). Because of this inconsistency with sounds, research has begun to view this deficit and the
impact of sensory-based interventions on children with autism.

Since autism is a sensory impairment that is auditory based, rhythmic entrainment is a tool which aids in relaxation of the body (REI Institute, 1999). By incorporating music with externally produced rhythms, the body is retrained to its natural rhythmic patterns (Ostrander, Schroeder & Ostrander, 1994). Metered music with a pattern of 50 to 65 beats per minute is played which mirrors a relaxed heartbeat (Hoffman, 1995). This metered music also reflects the 60 beats played in classical music, such as Mozart. The term the "Mozart Effect," demonstrates how the tempo of music at 60 beats per minute projects a relaxed atmosphere which a person internalizes (Ostrander et al., 1994). A person's body reflects this relaxed state and becomes in tune with a state of what we call "alert relaxation." An integrated music system could definitely set up an atmosphere which would be conducive to learning. A child with an anxiety disorder such as autism could definitely benefit from this type of environment.

A case study was done with an 11-year-old female participant named Melanie. Melanie was classified according to the Diagnostic and Statistical Manual of
Mental Disorders with autism (Orr & Myles, 1998). She had some expressive language difficult to understand. She displayed inappropriate attention-seeking behaviors such as pulling hair, screaming, and scratching. She also engaged in these behaviors to communicate her basic needs or desires. Since she was 5’7” tall and weighed 170 pounds, it took three to four adults to assist in calming her down when she engaged in temper tantrums.

Rhythmic entrainment was set up to help decrease Melanie’s inappropriate behaviors. According to Goldman (1992), the brainwave rates can be affected by entrainment. Changing the rate of these brainwaves can alter the level of consciousness. Through rhythmic entrainment, an individual’s alpha waves are increased which causes the individual to be very calm but in an alert state. A compact disc with rhythmic entrainment music was played in Melanie’s classroom. The music was metered at 50 to 60 beats per minute. This music was played in the background at a volume of 3, with the loudest volume setting being at 10. The music played for 20 minutes and then was stopped to collect data such as the frequency of head jerking and screaming. Melanie’s head jerking was a rapid head movement right to left. Her screaming was a loud outburst
to communicate a need. After 14 days, the head jerking had decreased from a mean occurrence of 49 with a range of 48 to 50 to a mean occurrence of 13 with a range of 3 to 43. Her screams decreased also to a mean occurrence of 3 with a range of 0 to 15.

Rhythmic entrainment may be implemented to help assist individuals with autism who appear to be hypersensitive to sensory stimuli. If the stress levels can be reduced, a more conducive learning environment can be set up to promote the most learning. Further research needs to be conducted in order to confirm the theory that rhythmic intervention can be effective in the overall intervention of individuals with autism. Since it is a nonobtrusive approach, it is easily and economically implemented in the classroom as well as in the home setting.
Early Intervention Music Programs

Music therapy is becoming more of an integral part of early intervention programs as well as school programs. Since musical interaction stimulates communication between a mother and an infant, it may be crucial to the later development of social skills. The rhythm of our heartbeat, the melody in the spoken voice, and turn-taking between an infant and mother is evidence of a basic human characteristic. This phenomena is described as a musical hierarchy or orchestration of self-regulation and self-organization. Because music is such an integral part of our being, by working with music to free a person from being isolated and from his or her own resistances and defenses, we are working in conjunction with healing the emotional, cognitive, physical, and neurological aspects of the person (Brown, 1994). Other controlled research studies have confirmed that music therapy can increase communication with children with autism. These skills can be generalized to other areas making it a truly effective method of treatment for autism (Edgerton, 1994). The secondary damage to the central nervous system may be the explanation for why children with early intervention have a
better prognosis than children who do not receive the early treatment (Grandin, 1996). More evidence-based research is still needed. The research does support that the earlier the intervention begins, the more possible positive outcomes will prevail. Since the language development has already been delayed because of a neurological impairment, it is vital to intervene as early as possible at the onset of autism, possibly between the age of 2 and 3 years old. The limbic system which also has abnormalities is not mature until the child is 2 years old.

**The Benefits of Music Therapy**

Music triggers whole brain processes and functioning by the right side of the brain connecting the left and right hemispheres. Through music therapy, the right side of the brain which controls rhythm and prosody helps the left side to develop speech and language (Nouralishahi, 2002). Melodic intonation (MIT) is used as a prompting strategy for sound production and expressive language development. MIT is speaking in a musical manner with two strong melodic and temporal components. With the melodic component, the music therapist incorporates a high and low note. With the temporal component, long and short
durations are applied. Many nonverbal children are able to sing an entire song using this strategy.

Music therapy can promote memory, and listening to music often triggers long-term memories. These memories trigger associations to other memories and in turn can lead to conversations. It helps a person come into his comfort zone so the anxiety level is reduced, making the situation conducive for learning. Since music tends to redirect a person, a person who is aggressive can be helped to deescalate from his or her aggressive emotional state and be redirected to a calmer alert state. This was referred to earlier as an "alert relaxed" state of being. The structure of a familiar piece has consistent rhythm, melody, and harmony which provides for predictability so an individual who has difficulty with forming spontaneous sentences in conversation, may be able to converse better with a song because the long-term memory remains intact longer than the short-term memory (Morton et al., 1990).

An instrument offers a nonverbal means of communication. This lowers anxiety levels and the frustration of not being able to communicate. People with autism show similar emotional responses to those people without autism.
Since children with autism learn by repetition, music can be a motivator to work on these repetitive skills or tasks. Some of these skills are imitation, object identification, auditory discrimination, body movement, and sequential memory. All these skills are part of a broader scheme in being an independent and functional individual in the community. Because repetition and rehearsal are critical elements in learning, attention processes need to be elevated and maintained. Music tends to elevate the norepinephrine levels in the brain which in turn controls the attention processes (Panksepp, 1999). This in turn helps to increase the attention span in children with autism. Vestibular, tactile, visual, and auditory stimuli are all incorporated into a music program for teaching children with autism. Through this sensory integration music program, a child’s attention span is increased and other stimuli are tuned out. A child is able to focus on one channel of information coming in instead of feeling overstimulated and bombarded by all the stimuli at one time (Williams, 1992).

Music, along with movement, can foster the development of the whole child. Singing and movement naturally provide rhythm. Helen Landalf has been teaching dance to children
since 1987. She also presents workshops for teachers to integrate dance into their daily schedules. She is a choreographer and performer of modern dance. Pamela Geike is a composer and music director and has worked as a children's music and movement specialist for more than 10 years. These two women have brought their individual talents together and have created "movement stories" (Landalf & Gerke, 2000).

Children have an internal desire for movement. Music and movement can be used as an educational tool and incorporated into the curriculum. Cognitive skills such as vocabulary building and problem solving are enhanced through these "movement" stories." The functioning of the brain can be enhanced through the repetition of specific movements. Cooperation and self-esteem are social skills which are also enhanced through these stories (Landalf & Gerke, 2000). The following is an example of a movement story, "Life in the Bass Lane: An Undersea Adventure." In this story, the concept of space is focused on. As the children move around the classroom, they learn to use their arms and legs to demonstrate their own space and to utilize the general space around them. By extending their arms, they make a bigger space. By listening to the waves, they
envision the ocean and can relate their presence to the vastness of the ocean (Landalf & Gerke, 2000). Improved motor skills are just one more of the many benefits of music therapy.

On December 27, 1999, Dateline NBC Correspondent Sara James reported a story about a child with autism and how music therapy has increased his ability to follow directions. Shawn has neurological problems that make him sensitive to the environment, and he in turn negatively responds to those environmental factors. He engages in spinning because it seems to calm and relax him. When his sensory processes become overloaded, Shawn engages in temper tantrums which leave him terribly frustrated. One of Shawn’s former teachers began singing simple instructions to him, such as “Stand up straight.” The tones of the music seem to reach Shawn before the words do (MSNBC, 1999). Jeanne Lyons has written a whole collection of songs that help Shawn learn the social skills he needs to successfully function independently some day. Jeanne Lyons has designed a program with encouraging songs that tell stories to teach children with autism socially appropriate behaviors. Some of these deficits include unusual play style, delayed language, conversational
perseveration, intrusive personal space, and difficulties with changes in routine. 

Dr. Michelle Dunn is a neuropsychologist at the Albert Einstein College of Medicine in New York. In her recent research she found that the brains of children with autism respond more quickly to tones than to words (MSNBC, 1999). She claims that normal children and children with autism basically process tones of music at the same rate. She also claims that music therapy will not work for all children with autism. Some children with autism process tones as well as words very slowly.

Since children with autism may process the tones of music before they process the words, music therapy activities may help to develop other skills along with communication skills. By listening to the rhythm, the body lines itself up with its natural rhythm and picks up on the flow of activities. Such activities assist in teaching fine and gross motor skills. Holding a pencil and moving it to write is a very big challenge. Using scissors to cut and following the lines is definitely another challenge. Social skills may also be addressed. Learning to share and take turns while playing rhythm instruments such as the
rhythm sticks are important social and behavioral skills to acquire to function independently in society. Singing songs can help to facilitate listening skills and following directions.

Melodic or tonal memory was found to be the strongest during the time of language development (Madsen, 1991). In this experiment it was found that music is a good motivator and reinforcer for teaching new vocabulary. Music adds a twist in the learning process because it lightens up the atmosphere, and the child begins to have fun. Learning is taking place and the child is having so much fun that he or she is unaware of the learning process that is taking place. Children listened and concentrated more when they were exposed to the music-generated activity. In the music-gesture group, phrases with nonsense words were spoken. The music-gesture group demonstrated a higher number of words learned. The children also demonstrated a higher number of smiles and more participation in the experiment (Madsen, 1991).

Evelyn Buday (1995) conducted research on children with autism to see if music aided in teaching sign and speech imitation. She found that music did help to improve memory when teaching manual signs to children with autism.
It is important to use music simultaneously when introducing any type of communication. This helps to promote better pragmatic skills with children with autism. The literature supports the notion that children with autism respond positively to music (Nelson, Anderson, & Gonzales, 1984). Since music has a regularly repeated pattern, learning can be beneficial, and the repeated pattern is easily recalled. When paired with other stimuli, the musical pattern is recalled first. Simultaneous communication is superior in faster acquisition of words and spontaneous use of words with children with autism. Music helps to increase memory and attention. It offers a state of relaxation first, which in turn increases memory (Morton et al., 1990). This is referred to as music's reduced distractibility effect. Music enables a child to focus by reducing boredom. Music helps children to focus and students to stay on task and decreases the stress level of individuals (Buday, 1995). Another study reported that mental retardation and environmental deprivation due to lack of stimulation both contributed to underdeveloped and delayed language (Walker, 1972). Using music as a reinforcer increases verbal
production in low-functioning individuals (Talkington & Hall, 1970).

Jane Cassiday (1992) conducted a research study on how language develops in children with communication disorders. She found that in the three treatment conditions given, the verbal/visual group and verbal/gesture group scored significantly higher than just the verbal group alone. It also showed the benefits of mainstreaming children with language disabilities with children with appropriate language development. It also taught the children with normal language development to respect their peers. It basically benefited both parties to participate in mainstreaming. Language competency as well as social skills were improved and enhanced (Cassiday, 1992).

There has been a change in teaching communication to children with autism. The emphasis is on teaching communication skills at this time rather than language skills. Communication skills include both verbal and nonverbal means, and language skills focus on verbal ability such as articulation. Each individual’s level of communication is focused on and serviced so that he or she can reach his or her potential in the area of communication (Schopler & Mesibov, 1985). Echolalia and stereotyped
language are means of communication that many children with autism use. The trend now is to have these children learn to spontaneously communicate as a means of communication. This is achieved through the use of the Picture Exchange Communication System (P.E.C.S.). If introduced and implemented at a young age, a child with autism can acquire speech. P.E.C.S. is a communication training system that helps children with autism acquire functional communication (Bondy & Frost, 1994). A child is taught to seek out another individual and give that individual a picture of an item he or she wants. In the first phase, no verbal cues are given. One or two communicative partners or trainers work with the child to have the child place the picture of the desired item in the other trainer’s hand. At this point, verbal praises are given as positive feedback so that the child learns that what he/she did receives a response. In phase two and the other phases, this child intentionally seeks out the attention of another individual to acquire what he or she wants. Therefore, spontaneous communication is learned.

Music therapists have incorporated P.E.C.S. into their routines and schedules with children with autism as a methodology to assist the child in understanding the song
or the material they are implementing. By applying this strategy, a connection is established between the client and the music therapist. With this connection comes a mutual bond of trust and understanding. A true relationship is formed and further education in cognitive, motor, and communication skills evolves. A team effort of educators, music therapists, speech and language therapists, and parents assist the child with autism to improve his or her behavior and communication.

Collected data from many observations and experiments emphasize how children with autism respond to music. Music therapy techniques have shown many positive effects in children's behaviors and communication skills, such as spontaneous speech and vocal imitation skills. One such music therapy technique, Creative Music Therapy, was developed by Nordoff and Robbins in 1962. In one case study, a 3 ½-year-old boy with autism learned to establish communication and reduce inappropriate behaviors by implementing vocal and instrumental improvisations (Nordoff & Robbins, 1964).

Improvisational music therapy is a nonintrusive method of allowing the child to enter the music therapy session and the music therapist models or plays an instrumental
piece of music from what the child is doing on the drum, cymbals, rhythm sticks, or another type of musical instrument. This type of music therapy was implemented with a 6-year-old girl with autism. She progressed and showed an increase in her vocabulary, self-expression, as well as spontaneous use of personal pronouns (Nordoff & Robbins, 1964). By incorporating drums, cymbals, and piano, a 5-year-old boy with autism demonstrated an increase in his vocabulary and development of spontaneous communication (Nordoff & Robbins, 1977).

Communicative responses among children with autism were found to accelerate when improvisational music therapy was implemented. Within a musical setting, communicative behaviors increased (Edgerton, 1994). Results from this study support the case studies and clinical experiences of prior studies done by Nordoff and Robbins. Results from this study also showed that children with autism can learn to communicate with low-structured intervention as well as highly structured intervention. This research is in direct conflict with the current research and literature that children with autism need a highly structured program. With improvisational music therapy, spontaneity and flexibility are allowed and encouraged. The song itself
creates the structure and the creativity is developed as the child with autism engages in the session. In fact, one can say that the child moves from the known to the unknown in a nonthreatening manner.

Language is part of our daily routine. A child acquires language by listening. Functional developmental language builds on this concept by the child’s interaction with his or her environment. Functional language is acquired once a child exhibits control over himself and his environment. As a child interacts with his environment, interventions are needed to have a child excel with further communication skills (Bondy & Frost, 1994).

Through play, a child develops language and learning. Even though most of play is self-directed, teachers must create interactive training contexts, apply training techniques, and pursue language and communication (Ogletree & Oren, 1988). Predictable routines are as necessary as having an arranged environment. Natural spontaneous events, though, should be allowed to occur. An allowance for change should be incorporated into the program. Some structure is needed, but not to the point that there is too much rigidity.
There were four musical modalities used by children with autism in Edgerton's study: tempo, rhythm, structure/form, and pitch (Edgerton, 1994). Tempo was the most frequently used modality in both the first and last sessions. Because children with autism engage in rhythmic behaviors, tempo may be one form of communication in which these children experience success (Edgerton, 1994). Therefore, it is important to continue research in the area of music therapy and consider its influence on teaching children with autism to communicate. Since the rocking behaviors of children with autism synchronize with the beat of music, it is logical to state that there is a connection of some type between hearing a tone and reacting upon it and hearing a sound and processing it in some way.

Another type of music therapy is called Orff-Schulwerk. This treatment method is now being used in the Autistic Children’s Program at Napa State Hospital. Carl Orff is the composer and music educator who developed this musical treatment for German schoolchildren. It has been modified to be used with the mentally retarded in California. This treatment emphasizes the rhythm in speech and body movement. The Orff Method is a partially nonverbal therapy which involves singing, chanting, and/or
rhythm. A child with autism may respond to the chant or song by dancing and moving around. Children with autism generally respond to music. High-quality percussion instruments are designed and enable these children with autism to create their own music (Hollander & Juhrs, 1974).

Language development is the main educational focus. American Sign Language is also incorporated into the program. It further enhances speech, rather than replaces it. Sign language, singing, and repetitive rhythm together can encourage speech development in children with autism, as well as in other children with special needs. Beginning hard consonant sounds are overemphasized and exaggerated to help stimulate beginning speech (Grandin, 1996).

Body image, body awareness, laterality, gross motor expression, fine motor coordination, receptive language, spatial relationships, simple categorizing, and simple association are some of the other aspects involved in the program. A child may be able to identify all his body parts but may not be able to respond to “Where is John?” (Hollander & Juhrs, 1974).

The progress in the Orff Method depends upon the child’s cooperation. It has been helpful in engaging
children with autism to a level of participation in which they can benefit and have a meaningful group experience.

Madelyn K. Hathaway is a psychodrama practitioner who is also a music therapist. She employs an eclectic approach in her challenge in working with children with autism and their families. Through puppetry, music, and role playing she assists children with autism in unlocking their world and hopefully engaging in communication with our world. By using a slit drum, she can engage in play therapy with the child and build a trusting relationship in order to work with the child. Tones are exchanged on the slit drum to connect the two individuals, the therapist and the child. After this connection is established, a melodic and tonal conversation is exchanged between the two individuals. Simple words may be exchanged as well to develop verbal expressive communication, if possible.

Puppets may be used to help develop and enhance appropriate social skills. An example of appropriate social skills would be to express a desire to be left alone if someone asked the child to play without aggressive behavior. One puppet may express that he wants to play and the other puppet would respond with his words and say, "NO," without hitting. If a child wanted to play, the two
puppets would express the desire to play, and then the puppets would engage in appropriate play.

Madelyn Hathaway also expressed the need to have the child with autism learn to express his or her emotions. She has developed pictures of emotions on large white flashcards. When the child is angry, she shows him the picture of the angry face and verbally expresses what the face symbolizes to the child so the child hears her. By exposing the child to these pictures of emotions, hopefully the child will express his or her emotions when he or she is angry, sad, happy, and so on.

The literature supports the theory that music therapy can be a motivator in teaching children with autism and other children with special needs to communicate and leads to decreased negative behaviors. Each individual has a different mode of learning, whether it be visual, auditory, or kinesthetic. Since children with autism are sensitive to sensory overload, it is crucial to find the mode that best suits their needs. Music is one approach that children with autism and other disabilities respond to, and the results have been positive in the areas of communication and social skills. Even though research needs to be continued in this field, the case studies,
clinical documentation, interviews, and observations from professional personnel and parents needs to be upheld in supporting the theory that music therapy can assist in teaching children with autism and other special needs to communicate.
Participants

In this qualitative study, interviews and observations were conducted. Four music therapists were interviewed from four different counties in Southern California, which included San Bernardino, Orange, San Diego, and Los Angeles Counties. Three of the 4 music therapists were female and 1 was male. The ages ranged from 26 to 44 years of age. The ethnic backgrounds included 3 Caucasian and 1 Japanese, and 2 of the participants were born outside of the United States. Only 1 had completed her studies abroad in London, England at the Nordoff Robbins Center for Music Therapy. Two of the participants completed their training at the University of Kansas and 1 completed her training at Chapman University located in California. Three music therapists completed their bachelor’s degree in music therapy and 1 has completed her master’s degree. One is a senior music therapist at California State University at Northridge (CSUN) and also practices as a private consultant. One is employed at Patton State Hospital located in Patton, California. She is employed by the
Department of Mental Health for the State of California as a rehabilitation therapist. Another participant is a private music therapist contracted by the San Diego Unified School District. The last participant is a private music therapist who is contracted by different agencies and school districts in Orange County.

The 4 music therapist were contacted by email and phone through a list circulated by the AMTA in Silver Spring, Maryland. After contacting these music therapists, interviews with these music therapists and observations of children with autism and other disabilities were scheduled. Times were scheduled during the course of the week when music therapy sessions actually occurred.

One Caucasian 54-year-old parent of a child with autism was interviewed. This high school graduate has a life experience of raising a child with autism. This experience and knowledge has led her into parent advocacy and formerly, the position as the president of the Inland Valley Autism Society. Her continual dedication in working with parents and children with autism has made her a valuable resource for personnel in special education.

Another interviewed participant was a South African special education teacher with a master’s degree in special
education who is employed with the Riverside County Office of Education. She teaches moderately to severely handicapped students with many types of disabilities including Down’s syndrome, cerebral palsy, Angelman syndrome and autism.

Three instructional assistants from the Riverside Office of Education were also interviewed. All 3 assistants have graduated from high school and have taken college-level courses to further their education. Their ages range from 28 to 57 years old with Caucasian and Hispanic ethnic backgrounds. All 3 instructional assistants work with high school-level students with autism.

The final participant interviewed was a 20-year-old instructional assistant employed by the Riverside County Office of Education. She has Asperger’s Syndrome, which is a high-functioning level of autism and received her high school diploma after graduating from high school in 3 years. She is a valuable and important resource in the classroom to teachers with students who have been diagnosed with autism.

The participants in the observations were students diagnosed with autism and other disabilities including
attention deficit disorder, cerebral palsy, Down’s syndrome, and other levels of mental retardation. Their ages ranged from 7 to 14 years. Their ethnic backgrounds include Hispanic, Caucasian, and African-American populations.

All the participants were selected in this study because of their high-interest level in working with children with autism and other disabilities and their daily involvement with students and the implementation of music in their programs. The education of these subjects varies from high school to graduate level with a focus and high-interest level in students with autism. All the subjects use music as a tool for the education of these students.

Instrumentation

The instrument used for the interview was a series of 16 questions designed for interdisciplinary team members in the field of education. The questions were selected to include the various positions of the individuals for the research and were broad enough to include children with autism and other disabilities, too. The questions were designed to be used in a clinical and educational setting for individual use or with a collaborative approach. The
questionnaire was broad enough to discuss individual differences and methods of music application. The bulk of the research questions focused on the area of communication and behavior and the open-ended type of questions allowed the interviewer to engage in a more conversational form of interview where feedback was exchanged between both parties.

Data Collection: Interviews

Music therapists were first identified by a list circulated by the AMTA in Silver Spring, Maryland. Approximately 50 music therapists were initially contacted through email and phone. Only 6 music therapists from the Southern California area responded. The interviews were scheduled with 4 music therapists. The music therapists needed to be narrowed to those who are actively involved with school-age children. This study narrowed the number of music therapists who were interviewed due to the targeted population of this study.

The interview settings varied from a clinical to an educational setting in both private and public facilities. A self interview was conducted due to a limitation that emerged during this qualitative research. In this
interview, the music therapist from California State University at Northridge (CSUN) recorded her interview questions and answers in March, 2004, and returned the tape to the original interviewer. The tape was clear, concise, and very informative. Her knowledge was exceptional and expressed from a scholarly viewpoint. She definitely shared her passion of her work through her interview.

On February 18, 2004, the interview with the music therapist in San Diego County occurred at approximately 11:30 a.m. for a 20-to-30 min period in a small 10-x-20 room at a public school site where the observations were also conducted when he orchestrated a music therapy session. During the interview, he articulated his answers to the interview questions clearly, concisely, and with enthusiasm about music therapy. There were some interruptions as a child entered the room several times to receive his copies from the printer which was centrally located for several classrooms to use.

The interview with the music therapist from the Redlands, California area occurred in a Starbucks Café on Sunday, February, 2004, at 3:00 p.m. The environment was quite noisy but the noise did not appear to interrupt the flow of the interview. The challenge was with the language
barrier since the music therapist speaks Japanese and English is her second language. This interview lasted approximately 30 minutes.

Another interview with the fourth music therapist occurred at a center for traumatic brain injury in Orange County. The room was quite large, resembling that of a very comfortable living room with a sofa and a few other comfortable chairs. This room was also used for therapy for some of the clients which were not permitted to be observed working with the music therapist. The music therapist was very knowledgeable and the conversation during the interview seemed to continually flow. She demonstrated many techniques as she explained in detail about music therapy. She was very energetic and compassionate about her work. The interview lasted approximately 1 hour in which the tape had stopped recording because of the high-interest level of both the interviewer and the participant.

On April 27, 2004, the interview with the mother of the child with autism was conducted in her car while she waited for her son’s dismissal from school due to busy schedules, continual obligations with children, and sickness. The interview lasted approximately 15 to 20
minutes. The other was very open and willing as she divulged information from her son's life as a small child. She appeared to be quite comfortable as she shared this information.

On March 22, 2004, an interview with a teacher who teaches students with moderate-to-severe disabilities was conducted in an adjacent room to the classroom at an elementary school where she teaches in Riverside County. After observations were completed in her classroom, she shared other information in the interview. She spoke very clearly with an energetic tone of voice. This interview lasted approximately 20 minutes.

On March 17, 2004, the interviews with 3 instructional assistants occurred in a small room adjacent to a classroom at a high school setting located in Riverside County. The 3 instructional assistants were very informative as they answered the interview questions during their lunch breaks. Each interview lasted about 10 to 15 min.

The interview with the instructional assistant with Asperger's Syndrome occurred in a residential setting at a dining room table on a Sunday afternoon, February 15, 2004. Small children from approximately 5 to 11 years old periodically would enter the room to access the backyard.
This interview lasted approximately 30 minutes. The participant was very calm and informative. She was comfortable in sharing information pertaining to herself. She also shared that she is a state representative for the organization, Unlocking Autism.

During the interviews, sole attention was given to the recipients of the questions to allow the participants the level of comfort necessary to answer the questions clearly and concisely with complete attention from the interviewer. Eye contact, reciprocity, affirmation, and confirmation were all critical elements demonstrated in the interviews to obtain valuable information for this study. Therefore, notetaking was not an element during the interview but more useful immediately following the sessions. All therapists and participants interviewed were given a consent form informing them that all participants observed for this research would not be identified and the information from these observations would be only used for this research.

Data Treatment Procedures

In this study, the code and chunk method was implemented to summarize all relevant and pertinent information for this research (McMillan & Schumacher,
The transcripts of interviews were coded by identified attributes designed for this study. Patterns in the data were discovered which led to relationships among the categories.

After transcribing each taped interview, each question was reviewed, and pertinent information was gathered with similarities according to the topic of the question. The facts from Questions 1, 2, 3, and 4 were gathered and documented on a chart. The participants were identified by position in working with students, ethnic background, age, and the types of students the participants interacted with. The information from Questions 6 and 7 were grouped and documented on a separate chart so the similarities of types of music and the kinds of musical instruments could be reviewed among the participants interviewed. Questions 8, 9, and were grouped together since they focused on the effects of music on communication, behavior, and social skills, which is the bulk of this research. Facts from Questions 5, 10, 11, and 13 were gathered and summarized to show how music is implemented in the classroom and individual sessions and how often music is implemented throughout the course of a day. During the design of the interview questions, some of the questions were developed
to focus on the individual's application of music with the student. Therefore, some questions appear to be redundant and information may overlap. Foreshadowed problems to the original design limited the number of observations to only 3 children with autism and 6 children with other disabilities. More interviews were conducted with a focus on an interdisciplinary team, including other individuals who interact with students with autism and implement music in some form throughout the course of a day.
CHAPTER FOUR

FINDINGS

Music Creates a Calm Environment

One of the categories in the coding section of the discovery analysis was the effect of relaxation. Relaxation or a calming effect was one of the similarities among all the participants in this qualitative study. Since children with autism experience high levels of anxiety, they would benefit from relaxation techniques to help alleviate stress and anxiety in their daily lives (Grandin, 1996). One way to accomplish this task is to play classical music in the background in an educational setting. Other calming sounds would include the sounds of nature such as the ocean, the rainforest, a stream flowing through a forest, and the thunder rolling through the clouds. With a relaxed feeling comes a sense of calmness, and then learning can occur.

The director for the Rhythmic Entrainment Intervention (REI) Institute provides information on therapy of musical rhythm on the central nervous system. Through his studies on African drumming, he has exposed the benefits of this drumming on calming the nervous system. Since autism is a
neurological impairment, children with autism may benefit from this rhythmic entrainment. According to Ostrander et al. (1994), a state of “alert relaxation” occurs and learning is at its optimal level. All the participants in this study stated how music promoted a relaxed state in the children with autism and other disabilities. All of the music therapists incorporated some type of percussion instrument in their therapy sessions.

**Music Captivates and Maintains Attention**

According to Donna Williams, an adult with autism, a relaxed state encouraged her to focus on one sensory channel at a time (Williams, 1992). The literature also supports research by Dr. Tomatis that by channeling auditory stimuli in the environment with melody, harmony, dynamics, and rhythm, a child with autism may focus more on the stimulus input that is being distributed. Another positive effect on the attention processes from listening to music was the elevated norepinephrine levels in the brain chemistry.

The neurochemical components have beneficial effects on redirection of children with autism. Music enhanced the learning abilities by motivating, connecting, engaging,
stimulating, and reengaging students in an educational activity according to the senior music therapist at CSUN. In observing this music therapist with her clients, her compassionate demeanor was expressed throughout her physical body as her level of energy was uplifting and positive through the one-way mirror. She continually engaged her clients by singing to them when she was not playing an instrument. The music redirected their focus to the activity she encouraged them to participate in. When the one child with autism began to self-stimulate with his fingers, she would redirect him by removing his hands from his lips and continuing to sing the book, “Quick as a Cricket.”

The music therapist from San Diego worked with a 10-year-old child with attention deficit disorder with hyperactivity. As he worked with the child, he continually redirected the child. He would sing a different song for the different activities he was working on with the child and reengage the child after each activity. The child’s focus was approximately 5 minutes at the maximum. Changing songs and activities assisted the child in keeping his focus. The observation was quite challenging and encouraging.
The music therapist from CSUN stated that music captivated and maintained her clients' attention by referencing and listening. According to the parent, music helped to orient her son by improving his eye contact with his peers and sisters. The music therapist from the San Bernardino area also stated a similar claim that music assisted in the improvement of eye contact. Instructional assistant D stated that music kept the students' interest and retrieved their attention. It assisted the child in refocusing if his attention was wandering. The teacher shared similar findings regarding an increase in attention span when her students were engaged in a musical activity.

Music Enhances Communication

The 3 music therapists that were observed all implemented a contact song or a greeting song. This technique was used as a first connection with the student so that reciprocal communication could occur. Eye contact, touch, singing, or smiling were all forms of communication between therapist and client. These first moments in the session were critical and helped to set up a positive session with the child. One style of therapy that was discussed by 2 music therapists was an improvisational
method. This method helps to set the mood and the atmosphere for the flow of the session. As the child enters the session and becomes attracted to an instrument, the music therapist mirrors what the child is playing on the instrument of his choice. This style sets up for a flow of creativity within the structure of the tempo and rhythm of music.

Music is a tool that can be effective in stimulating communication in many forms. All of the participants in this study which included 4 music therapists, a teacher, a parent, and 5 instructional assistants (1 who was diagnosed with Asperger’s Syndrome) shared their knowledge that music enhances communication skills and is an aid in improving general communication skills. Children with autism have deficits in communication and socialization skills. Music therapy offers an accessible medium of expression so that these children can feel safe. Once they feel safe and secure, their anxiety levels are lowered so that they can begin to express themselves. Since the instruments do not pose a threat as a human may, a child with autism may connect first with the object. In the improvisational method that several of the music therapists discussed during the interview, the music therapist will mirror
actions, vocalizations, screams, and movements the child has engaged in as he plays an instrument. Once a bond has begun to form and a social connection is bridged between the therapist and the child, expressive communication emerges. This range of expressive communication may appear in forms of smiles, nods, eye contact, touching, and even speech and language. Music may cue speech and provide nonverbal ways of communicating.

Music has a repetitive nature which encourages memorization to occur. This repetition allows for the anticipation of the next progression. Since children with autism have a difficult time without structure and not knowing what is coming, this is an effective strategy in reducing anxiety so that learning can occur. Speech can occur with this same strategy because of the memorization aspect.

Music Structures Time

Music also gives structure, therefore, the child knows what is coming and what to expect. The hello song in the beginning of the session and the goodbye song at the end of the session are very critical in a few respects. They establish the beginning of the session as well as the end.
They are used to teach appropriate social skills such as the proper way of greeting an individual. They also allow for the anticipation of the length of the session so the child knows how much time he will participate in the music therapy session. This structure helps to lower anxiety levels and the child may pace himself when he knows how long he will have to work. It also helps to control frustration because the child can control his environment. According to the music therapist from the Orange County area, the structure of melody follows the structure of speech and a song may be used to incorporate a progression. This progression helps to stimulate the child to fill in the blank. This technique is very critical in working with children with autism because of their sense of completion. Because of this need or desire to finish something, a child may begin to vocalize his answers in the form of singing. The silence at the end of the progression encourages the child to finish by acting as a cue for further communication. The music therapist from San Diego also used this strategy with both the students with whom he was working. He would sing a song such as “Rock Around the Clock Tonight” to teach time. He would intentionally leave the ending off, so the child was encouraged and cued by the
silence to fill in the response. It also alerts the child that important information is coming and the sense of anticipation is structured by the cueing. The child may respond to the music by answering a question sung to him such as “Where is Bryan?” with “Here I am.” The parent of the child with autism taught her son to speak by singing to him. He would then respond to her request by singing the reply and complying to the request.

**Music Creates a Routine**

Music can create and emphasize a routine. The rhythm creates consistency and a predictable amount of time is then generated. This routine provides a safe and predictable place for children with autism to practice social skills. By establishing a routine, children with autism lower their anxiety levels and, therefore, learning can occur because the children anticipate what will be coming. This safety net of implementing a routine assists in transitions and minimizes behavioral issues from arising. All of the participants in this study implemented music during transition times. The greeting song is very important as it establishes a rapport and encourages the social connection and interaction to occur during the
session. The instructional assistants stated that they implemented music throughout the course of the day to help in all their transitions such as checking their schedules, walking the track, walking to and from snack, and motivating them through an activity that the students are already involved so they can complete the activities. The parent also stated that she implemented music in the morning to assist her son in beginning his day. A closing song to end the session established the end of the music therapy session with the therapists. Music can accompany different tasks and facilitates learning and communication.

Music Allows for Control

Music lets children control their environment in many ways. They can choose their instrument upon arriving at the music session if the improvisation method is implemented. This allows for control of what the children are engaged in and helps to lower any anxiety levels. It also helps in the creativity of the session and where it will lead. The music therapist from San Diego gave the child he worked with a choice of an instrument to play after she worked, as reinforcement for participating. The child chose an ocean drum. This technique gave the child a
choice and gave control to the child. Allowing the children to choose a song gives control to the children, and social connections are further established between the adults and children through musical activities. Music can be adapted to each individual by changing the tempo to either stimulate or calm and provide pauses to allow for a slower response time if stimulating speech. The recording of a song may not provide ample time for processing information to act on it. The music therapist can pause when needed and can adjust the key to match the child’s vocal range. The music therapist from CSUN played the piano as she accompanied a 10-year-old child with autism. She would sing a song and leave the ending off in effort to stimulate language in the child. The child would fill in the blank as she sang and left off the ending. The music therapist from San Diego would sing the “ABC” song accompanied by his guitar and would generate a response from the child he was working with. He would play a slow beat to improvise to the child’s rhythm to promote clear speech.
Music Promotes Appropriate Social Skills

It was found from this study that music affects social skills in a positive way. According to the music therapist in the San Diego area, music allows the child to be comfortable to express himself. Since it allows him to be in control, the child can learn to be a leader. The music therapist employed at the Patton State Hospital, stated that the child is allowed to make choices which encourages social skills. Improved eye contact was one noticeable change in her clients. She also shared that their self-esteem improved and this furthered the communication and appropriate social skills. The therapist from CSUN stated that music encouraged referencing the other partner and listening to that person. It also encouraged taking turns, being a leader, and being creative. The parent has seen improved eye contact with her son when she interacts with him. She also stated that he interacted with his peers and sisters more. He approaches his sisters with arms extended when the music is playing and initiates dancing with them. Since music processing is found throughout the brain, music, language, and movement are intertwined in a child’s development. Music encourages social skills and
appropriate play skills to develop since it provides a safe place to practice these skills.

The instructional assistants shared that music let the students be themselves, and the students reacted to the music by dancing or singing. It actually brought students together during their travels to the grocery store. It kept their interest in the activity they were engaged in if music was involved and it was a useful strategy in refocusing them. It also encouraged responses to questions.

The teacher stated that the child showed respect for the person who was speaking, so referencing another individual was encouraged through the use of music. The students also stayed on task for longer periods of time if music was implemented. They also followed directions more efficiently.

Music Affects Behavior

Three of the instructional assistants stated that music displayed only positive effects on behaviors. These positive effects included relaxing the students in order to calm them. The other 7 participants, which included 1 parent, 1 teacher, 1 instructional assistant, and 4 music
therapists stated that music could affect behavior both in a positive and negative way, but in most cases, more positive effects have been documented. According to the music therapist from the Orange County area, people react differently to different songs depending on the emotional aspect of the song for that individual. Continual observation of the clients is encouraged so that changes can be made to the material if necessary so that a negative effect from using the wrong music does not occur. Also, the music therapist from the Redlands area shared that certain songs may bring back negative memories to a client, and therefore, it is critical to choose the material carefully. All of the music therapists spoke about white noise in reference to working with children with autism. Certain instruments may exhibit this white noise and cause a sensory overload in the individual. Therefore, certain instruments would not be beneficial for the music therapy session. Hypersensitivity to certain noises should be carefully evaluated in the initial assessment by the music therapist as well as through ongoing assessments.

The volume of certain music may also trigger a sensory overload in a child with autism. The parent shared that her son may become too excited if the music is too loud,
and aggressive behavior may be exhibited. Music is implemented to stimulate and to calm and needs to be carefully monitored so that the child with autism does not experience sensory overload and elicit negative behaviors.

Reports of the effects of music on behavior leaned unanimously more toward the positive side. Music can relax individuals and structure the environment so that anxiety levels are decreased. According to the music therapist at CSUN, it can be used as a contingency, entrainment, reinforcement, reward, and stimulus. It encourages social interactions and creates a play situation with inanimate objects so that the human defense mechanisms are lowered. Social interaction is initiated through the play skills that emerge and develop.
CHAPTER FIVE
CONCLUSION

This research strongly supports the notion that the implementation of music may lead to the enhancement of communication and appropriate social skills in children with autism and other disabilities. Inappropriate behaviors often decrease through the implementation of music in the classroom and individual music therapy sessions. Music appears to have a relaxing effect, lowering the anxiety levels in children with autism so that learning can occur. Through the sounds of nature and classical music, rhythmic bodily functions seem to align with these sounds, and a calming effect takes place.

Music captivates and maintains attention and is utilized to assist children with autism by redirecting them when they lose their focus. The structure of the music lowers anxiety because it allows for predictability in what is coming next. Language is stimulated by this structure and the sense of completion that children with autism desire and experience assists in this process. Speech may begin to emerge because of this desire. The improvisational method that is incorporated with children
with autism assists in creating a bond with the therapist and the child in a nonintrusive way, which is a critical technique in working with these children. The instruments are not as threatening as engaging in an activity with another person. The structure of music also allows the child to know how long he or she will be working on a certain task which helps to lower the frustration level.

The rhythm creates consistency, and routines can be established. After the routine has been established, a child with autism experiences safety and predictability. Social skills and appropriate behaviors can be practiced because of this safety net. Transitions are easier, and behavioral issues are minimized.

This research supports music therapy as an effective tool in stimulating language in children with autism. By implementing music in a continual and consistent way, positive effects in language and behavior are reported by individuals in different disciplines in the education field in most cases. Some negative effects may occur because of sensory-integration issues. It is important that music therapy is performed by a certified music therapist so that these negative effects are assessed, observed, and monitored on a continual basis. After these assessments
are performed, careful management of the documentation is applied so that further negative effects do not impact these individuals.

Recommendations for Further Research

Case studies with children with autism and similar language developmental history and progress would further support the research on the effects of music on language development. By the application of specific variables such as certain types of music and the purpose of the music, follow-up studies on students with music therapy for a period of time would yield further benefits of applying music on a continual basis. Locating and interviewing music therapists in other states would enhance our understanding of the global effect that music has on language development and social skills.

1. Following the progress that children with autism make before and after application of music therapy will provide for further documentation on the successful application.

2. Quantitative procedures will provide information on the different variables that will be applied that may affect speech and language development and social skills.
APPENDIX A

INTERVIEWS WITH MUSIC THERAPISTS
Interviewer: Thank you for answering questions for hmm..my thesis on music therapy. Uh...what is your position?

Music Therapist A: Hmm..A music therapist contracted to San Diego Unified in Poway District.

Interviewer: Okay. What is your ethnic background?

Music Therapist A: Caucasian.

Interviewer: Okay. What is your age?


Interviewer: Hmm..What kind of students do you teach or interact with?

Music Therapist A: Special needs students. All with I.E.P.'s. Hmm..more specific?
Interviewer: Sure.

Music Therapist A: Hmm...

Interviewer: Any kind of disabilities or specific disabilities.

Music Therapist A: Blindness, multiple disabilities, hmm...hmm...autism, Down’s Syndrome, ADD, uh...combinations of those. Learning disabilities. Williams Syndrome is one. Hmm...just a lot of the basic diagnoses you would see in a special ed. classroom.

Interviewer: Okay. Hmm...how do you use music hmm... in this fashion?

Music Therapist A: Either for social reasons or academic reasons. It all has to support goals in the I.E.P. That’s how we get our funding. So either I write my own goals or I will just support goals already in place so that social participation or group cooperation or group cohesion or being independent, being a leader, being a follower or the
Interviewer: Do you collaborate with the teachers then to discuss hmm... the _______ thing?

Music Therapist A: Hmm... Once a year they have an annual meeting with the I.E.P. I give quarterly progress reports. Hmm... a lot of times the teachers are in the classroom. We’re not usually like this. A lot of times I’m in the room. So they see what’s going on. Hmm...

Interviewer: Okay. What kinds of instruments do you use?

Music Therapist A: I use guitar, primarily, and percussion instruments. You didn’t see much of that today, but drums and shakers.

Interviewer: Okay.

Music Therapist A: Things you don’t put your mouth on.

Interviewer: Okay.
Interviewer: Hmm...What kind of music do you use or apply?

Music Therapist A: We use very simple, familiar, repetitive. Simple songs. Hmm...unless they’re just playing with instruments I might just play something on the guitar as background music. But if I’m looking for a response, it’s predictable melody, it’s predictable rhythm, it’s...can anticipate what’s coming next. It’s familiar and predictable.

Interviewer: Okay. How does music affect communication?

Music Therapist A: It provides alternate ways to communicate. Hmm...It could make you more comfortable to communicate. Hmm...how does it affect communication? Hmm...

Interviewer: Does it promote speech at all?

Music Therapist A: Oh. Definitely. Hmm...It takes the same muscle, muscle, muscles aah...as it does to talk, as it does
to sing. So it’s a lot of common ground with. A lot of times kids will hum and do things and make noises, hmm...hmm...before it gets into words. So you can sing as a way to kind of motivate them through the next, the next phase. So we may sing a familiar song, la la la or la la ooh, or whatever sound they’re making, and then gradually introduce other syllables or sounds.

Interviewer: How does music affect behavior?

Music Therapist A: Well, it can affect it negatively or positively. Hmm...music can give children that are used to a very structured environment, a chance to be in control. What do you want to do now? What way do you want to shake this? What instrument do you want to play? What song do you want to sing? A lot of times they don’t get that in school.

Interviewer: You give them choices.

Music Therapist A: Hmm...It’s very easy to overstimulate as well. Too many kids with instruments. I have kids just shut down completely just from overstimulation. Hmm...
There’s been problems with like sharing. Hmm... Sometimes you’ll see negative behaviors that you didn’t otherwise. It’s not always positive unfortunately. I would say more often than not, there’s positive responses. But not everybody benefits.

Interviewer: Okay. How do you know? Because one of my questions was what are the negative effects then. Hmm... When would you see the negative effects?

Music Therapist A: In a group situation. We had a group situation not willing to share, not willing to take the instrument they have, always wanting to be the leader. Hmm... Just like with toys and playing. Just not willing to put the other person.

Interviewer: You’re teaching social skills then at the same time.

Music Therapist A: Right! All the stuff we do has to have a goal in place, increase social participation. There’s always a goal we’re working on. We’re not working on we’ll sing better. We’re not working
on we’ll learn how to play a drum. It’s not that. It’s by playing a drum, they will learn tactile tolerance, or they will learn...

Interviewer: Okay.

Music Therapist A: Things like... so the goal is always nonmusic.

Interviewer: So it’s not to learn to play a musical instrument.

Music Therapist A: No.

Interviewer: It’s just to promote...

Music Therapist A: It’s another motivation to get to the other goal.

Interviewer: Oh yeah... motivation. It’s a good word to use. We’ll skip the next one. How do you use music throughout the day? That’s basically for teachers. Hmm... How do you
use music through the session? You’ve already shared that. Unless there’s anything else.

Music Therapist A: We have a goodbye song. Predictable. Always, we start the hello song, end with the goodbye song. So there’s always uh...familiar part of each session.

Interviewer: And you have a beginning and an end.

Music Therapist A: Right.

Interviewer: And with autistic children you seem to need that, too. That was good. In observing another music therapist, they opened up with a song and closed, too.

Music Therapist A: Yeah.

Interviewer: With the child’s words or the child’s name.

Music Therapist A: Name, right.

Interviewer: That was really neat. Hmm...how do you address multiculturalism through music?
Music Therapist A: How do...

Interviewer: Because, okay, hmm...I noticed that with this one child, you were, hmm...you want her to be able to speak English.

Music Therapist A: Yes. We’re fading out the Spanish completely. Both of her parents are primarily Spanish speaking, so.

Interviewer: Okay.

Music Therapist A: She gets it at home and it’s just to her benefit that English becomes her primary language.

Interviewer: Okay. How much time do you spend with music application, hmm...? Hmm...that would be basically towards the classroom.

Music Therapist A: Some planning, too.
Interviewer: That would probably be geared more to the teacher.

Music Therapist A: Well, I mean I write my own songs a lot. There’s a lot of CD’s out there. Uh...I...just the cheese factor. It’s...you know the cheesy. It’s the only way to explain it. And it’s...a lot of teachers feel that same way. They’re sick of the same CD’s. They want...not to replace them but just as an additional thing. And the way I write my music is kind of a little bit more interesting without being, without taking away from the point of the therapy.

Interviewer: Okay.

Music Therapist A: Hmm...

Interviewer: Would you ever write your own CD’s or make your own CD’s?

Music Therapist: Yes, I’m in the process of that.

Interviewer: Oh good!
Music Therapist A: Yeah.

Interviewer: Okay. Like on along, along the lines of children’s music say...Raffi. Is Raffi a, a musical person? Would you write music towards children’s hmm...music or just do more...?

Music Therapist A: No. No. Academic-based songs is what I’m looking into publishing.

Interviewer: Okay.

Music Therapist A: Raffi is, is just singalongs.

Interviewer: Okay.

Music Therapist A: You know social things happen, too.

Interviewer: Right. We need more of that in the classrooms. That would be good.

Music Therapist A: Yeah.
Interviewer: Okay. Hmm...what have parents shared with you about any noticeable changes in behavior or communication since music application in school?

Music Therapist A: I have had a lot of parents say that they hear their children singing songs from...I’ll send usually a CD home, to school and I mean home and at school. They’ll have a CD of all the songs that I’m doing so they can work on them in other places. So we do that a lot.

Hrm...hm...as far as, most of the time, the behaviors that I’m noticing are at school. Not so much at home. We’re kind of working on the school thing. So I haven’t had any comments about home, okay, based behavior other than, they can tell they’re catching on to some of the songs.

Interviewer: How about, that would bring up another question, a good one, then. How do you, has the teacher shared with you about any improved behavior or communication in the classroom?

Music Therapist A: Hmm...That’s a tough one. Well...Hmm...It’s just tough to answer then because sometimes the teacher, if
it's an inclusion class, let's say, the main teacher
doesn't really work with that, with that child. He has a
one-to-one aide, let's say. So sometimes the teachers
won't have much to say, sometimes, because I just come in
once a week and I usually pull the child, child out by
working in the corner of a room, and then I go, and so,
hmm...really the only comments I get is in a group
situation...hmm...they like the live music. People, children
seem to respond to me in a positive way. The rapport seems
to be accomplished quickly. Hmm...yeah...it's a hard one. I
don't mean to be vague.

Interviewer: Okay.


Interviewer: Okay.

Music Therapist A: Just the welcome that stands out is the
fact that I've heard thank you for writing new songs.

Interviewer: Okay. Okay. That would be probably, maybe,
at the annual meetings, then.
Music Therapist A: That's when it would come out.

Interviewer: Okay. Alright.

Music Therapist A: You know there's been times when we have to revise goals like this one special needs client has multiple disabilities. Hmm... We're working on a switch where he does two squares and they have different tactile things on them and one is "more music please" and one is nothing.

Interviewer: Okay.

Music Therapist A: So I sit and I wait for him to hit it. And this is also a goal that they use in class for another "bite please" with stuff for food and so we'll talk about, "Is he really reaching for the switch?", "Do you have to do hand-over-hand?" So if they're doing something exactly like I'm doing, like that, we will talk. "What are you noticing?" And we have had to revise his goals and move into gait training because he's not interested in the switch with me or so...
Interviewer: That’s his mode of communication with the switch?

Music Therapist A: Right.

Interviewer: Okay. So he is nonverbal.

Music Therapist A: No.

Interviewer: And the last question. Okay. Hmm... how does music affect, how does music affect social skills?

Music Therapist A: It promotes appropriate social skills... uh... the songs, usually the lyrics will be functional. Hmm... when this happens, what do you do? Like safety skills, or things like that. Hmm... it just provides children with the chance to be, have a say in what’s going on, being in control, like I said, being a leader. I’ll often have one child who will stand and they’ll have an egg and they’ll shake it. The rest of the class will shake it how they do. Hmm... so it just gives them an opportunity to get out of that such a structured situation and be a chance to express
themselves and be comfortable, hopefully, hmm...I don’t mean to be vague.

Interviewer: No, that’s good, very good. My questions may be vague so. That was hmm...

Music Therapist A: No.

Interviewer: Sometimes I’m filling in.

Music Therapist A: That’s okay.

Interviewer: Because I’m thinking as we’re going along. But hmm...I guess that’s about it. I just want to thank you for again for taking time to answer these questions.

Music Therapist A: Sure.

Interviewer: Thank you.

Music Therapist B–Orange County
Interviewer: Thank you for hmm... meeting with me to answer
questions for my thesis on music therapy.

Music Therapist B: Okay.

Interviewer: And I gave you a list, too, if you just need
to look at those. Okay. What is your position?

Music Therapist B: Self-employed music therapist.

Interviewer: Okay. What is your ethnic background?

Music Therapist B: Uh...Caucasian.

Interviewer: Okay. What is your age?

Music Therapist B: 29.

Interviewer: What kind of students do you teach or
interact with?
Music Therapist B: Right now, most of the kids I work with have autism or, hmm...cerebral palsy and uh... different levels of mental retardation.

Interviewer: Sounds like there’s a broad range.

Music Therapist B: Yes. In the past, though, I have also worked with adults uh... with cerebral palsy, uh...Alzheimer’s, dual diagnoses with schizophrenia, hmm...adolescents with dual diagnoses. But right now, my focus is with children from about age 3 to hmm...and most of them are between 3 to 16. But I’ve also worked with the early intervention program. Hmm...the youngest was 6 months old.

Interviewer: Oh...

Music Therapist B: To 3 years old and that was really neat. Because I got to work with the parents and the speech pathologist, and the physical therapist, occupational therapist and all of us worked together in that program. Hmm..but right now, I’m a self-employed therapist and most of my employment is from 3 to 16.
Interviewer: Did you in working with the infants find that the music stimulated the little ones?

Music Therapist B: Well, the, my favorite story is working with the physical therapist. She was working with a boy who was a year old who had Down’s syndrome and trying to help him bear weight on his legs. He had hypotonia, so low muscle tone, and she, you know, she was doing all the exercises and all the things to help him and he wasn’t responding and so she was able to work with me with the other therapists in there and we could all bring our expertise to the situation and so what I was able to bring was a large drum, much bigger than this that had a real, uh...deer skin head on it made out of wood and carved out, very salient object and he was constantly reaching for it and wanting to play it. So not only was he able to bear weight on his legs and play this drum, but he was able to pull to stand by putting his hand on the corner of the drum and pulling himself up, like you would see uh...some put their hands on the couch and pull to stand. Or here you would be using the drum. We just stabilize the drum.
Interviewer: Oh.

Music Therapist B: So he has to lift his body up and then continue to bear weight.

Interviewer: Oh.

Music Therapist B: And that’s the point of the drum. So, and I got to be right there with the parent, with the physical therapist and she was giving all the cues that she’s trained in how to do and to see enormous progress, tears in the mother’s eyes, to see your child.

Interviewer: Very emotional moment.

Music Therapist B: Yeah. Yeah. It was my favorite moment, probably:

Interviewer: Oh, hmm...how do you use music in your session?

Music Therapist B: Depending on what the student’s goal is, it’s going to be entirely different. So, if we’re working on a speech goal, hmm...#1, I always consult with the
teachers, always, first. If they have a speech problem because I’m not trained in speech or I’m not trained as a physical therapist or I’m not a physical therapist. So I always consult with that interdisciplinary team member. So if they’re working on speech and the speech pathologist says we’re working on communication and vowels, I’m going to use a song that will incorporate a certain structure that has a lot of lines and then a cadence. A cadence is the ending chorus of a song, a progression to help them fill in the blanks. For example, if you do E-I-E-I-_____.

Interviewer: O.

Music Therapist B: Yeah.

Interviewer: Okay.

Music Therapist B: The natural response for everyone is to fill in that last note and the reason for that...

Interviewer: Is that called cadence?
Music Therapist B: The reason for that...Yeah. I’ll share with you, hmm...If you have a chord progression. Here, I’ll show...play it for you on my guitar here. But while I’m getting it, this, out you can also just do it in a, in a melody of a scale. So you have... Da, da, da, da, da, da, da, da...Da, da, da, da, da, da, da; da,

Interviewer: Da.

Music Therapist B: Da, yes, see.

Interviewer: Okay.

Music Therapist B: You have that ending note at the end of the scale or in the cadence you’re playing, hmm, hmm, hmm, hmm. Yeah, hmm, hmm, hmm. There it is. It’s that cadence, that last chord progression.

Interviewer: Okay, and if you know what with autistic children, too, it seems they have to have that sense of completion.

Music Therapist B: Hmm...hmm.
Interviewer: So that would help with that.

Music Therapist B: Yeah, and you can also use the uh...guitar to initiate that response like you’re saying, give that completion or initiate that response. If I’m doing hmm...let’s say, uh. I’ll use a greeting song to help hmm...initiate social greetings and also to respond to social greetings. I’ll say...“Hello,” I’ll say “Hello, Cheryl, how are you?” And then we teach the next phrase that’s “I am fine, how are you?” So then hopefully we can fade the music out and then say, “Hello, Cheryl, how are you?” And that person will say “I’m fine, how are you?” So they’re responding and initiating a greeting. Then I’ll use the guitar to cue that next response. So I’ll say, “Hello, Cheryl, how are you?”

Interviewer: I am fine.

Music Therapist B: Yeah, and maybe they’ll get the response, but not the hmm...initiating the next part. So they say, “I am fine,” and I go...
Interviewer: How are you?

Music Therapist B: You can really hear that.

Interviewer: Yeah.

Music Therapist B: You know the chord changes. It really hmm...invokes that next response. So maybe it invokes the response but they're just not getting the whole sentence. Then you might need additional songs and that might be written into the goal.

Interviewer: For speech or for greeting people appropriately, for social skills.

Music Therapist B: Right. Hmm...also, if you're doing label by parts, maybe, what do things have wheels?

Interviewer: Okay.

Music Therapist B: You can hear that next chord of trucks and a bus have wheels. What do things have feathers of? Actually, that one doesn't have to real strong, uh, chord
change, because it stays on the, on the same chord. What do things have feathers of? Feathers, yeah, you can really hear that, that change in the chord progression that stimulates that response. You can use those chord progressions either to stimulate that response in the middle of the song or provide that cadence at the end of the song.

Interviewer: Oh.

Music Therapist B: So to answer your question again, how do you use, uh...music in a classroom session that could make speech or communication? There’s a lot of fill-in-the-blank, hmm...or using that chord to stimulate the next response. There’s a technique called melodic intonation therapy.

Interviewer: Hmm...hmm.

Music Therapist B: And you are putting hmm...melody to a sentence. So now we’re not working on just imitating a sound. We’re working on putting a whole sentence together.
Interviewer: Hmm...hmm.

Music Therapist B: Uh...so if they’re saying uh..."My name is Lisa." You’ll say, “My name...my name is Lisa, ba ba, ba ba, my name is Lisa, my name is Lisa.” You’re keeping the same, uh...rhythm and speech. “My name is Lisa, ba ba, ba ba. My name is Lisa.”

Interviewer: Using the high and low.

Music Therapist B: Hmm...Hmm...

Interviewer: Okay.

Music Therapist B: You’re keeping that same structure when you talk. You wouldn’t say “My name...my name is...Lisa. My name is Li - sa.”

Interviewer: Okay.

Music Therapist B: See you try and get the structure of the melody...
Interviewer: Okay.

Music Therapist B: ...to follow the structure of speech.

Interviewer: Okay.

Music Therapist B: And often times you'll hear of somebody whose had a stroke or somebody who has Alzheimer's who doesn't have speech anymore.

Interviewer: Hmm...hmm.

Music Therapist B: In the case of a stroke, maybe they're trying to gain speech back, and many times you'll hear they can still sing.

Interviewer: Yeah!

Music Therapist B: They can't speak, but they can still sing.

Interviewer: Right.
Music Therapist B: And there hmm...are hmm...different centers in the brain that are responsible for speech than for singing.

Interviewer: Okay.

Music Therapist B: And, although, they may overlap, there are also distinct narrow pathways for speech, and a distinct narrow pathway for singing. So you can often get at speech through song.

Interviewer: Okay.

Music Therapist B: And so they’re using that melodic intonation therapy and then the hope is that you can fade that music out and bring speech back.

Interviewer: Okay.

Music Therapist B: And it’s not without music and it’s not that. At least they have a sing-song way of speaking. They can still get their communication across.
Interviewer: Okay. So the idea would be to generalize it and fade the music.

Music Therapist B: Right, right. Now that would be if we were working on someone in speech. So now how do you use music in a classroom session if you’re working on range of motion or physical therapy goal?

Interviewer: Okay.

Music Therapist B: Now it’s going to be an entirely different use of music and in that case I will often use different musical instruments and I’ll find which are their preferred instruments because it needs to be something motivating to them.

Interviewer: Right.

Music Therapist B: To find their preferred instruments and often times it’s a drum with children.

Interviewer: Oh.
Music Therapist B: I’ve never...there isn’t any science to it that I know. That’s been my experience.

Interviewer: Okay.

Music Therapist B: And so I’ll put the drum on one side...hmm...let’s actually let’s say we’re working on crossing midline, not necessarily arranging yet. I’m going to put the drum on the left hand side and I’m going to put a mallet in the right hand.

Interviewer: Oh, yeah.

Music Therapist B: And in order to play that drum the child needs to cross over it. Now what happens often times, they’ll turn the whole body and now they’re not crossing the midline anymore. They just shifted their body toward the drum and now they’re hitting it. So then it may require hmm...cues to keep their feet planted and to cross over.

Interviewer: Okay.
Music Therapist B: And so then again I would consult with the physical therapist and find what cues are you already doing because maybe they just need a verbal cue. And I don’t want to come in and supply all this physical prompting, if they don’t need it. So perhaps, all their needing is a verbal cue or maybe they’re just needing, hmm...imagery. You’re a tree, and your feet are planted firmly in the ground and, perhaps, you’re even going to provide a song with that like hmm...the green grass grows all around, all around and the green grass grows all around...

Interviewer: ...grows all around.

Music Therapist B: And now we’re talking about this tree. So...and on that tree...and on that tree...there was a branch, there was a branch. So now they have rhythm which also helps them to facilitate that movement.

Interviewer: Okay.

Music Therapist B: ...from this. Hmm...using the rhythm to facilitate movement is another common technique. It’s called, uh...it’s a technique called R.A.S., rhythmic
auditory stimulation and you use it to cue, uh...hmm...their walking, their rate of walking. Also, uh...let me see if I can explain this better. Hmm...we're going to look at their rate, how fast they're walking.

Interviewer: Hmm...hmm...

Music Therapist B: You're also going to look at hmm...their, their cadence.

Interviewer: Okay.

Music Therapist B: You're going to look at their hmm...cadence, velocity. Well, you're going to take hmm...these measurements for the different hmm...the different baselines and then you're going to add music to a strong rhythmic pulse that matches their foot falls that they're walking at about this pace. You're going to find music that matches that pace and the strong rhythmic pulse will stimulate the neurons to make the muscle move.

Interviewer: Okay.
Music Therapist B: So often times you’ll see with hmm...rhythmic auditory stimulation, you’ll see their gait patterns become more even. You’ll see they’ll start matching their feet falls to the beat of the music. The thing that is so exciting about that is the carryover because they can do musical imagery in their heads and when they’re in the grocery store, they don’t necessarily need, you know, headphones, to be listening to that song. They can imagine the music in their head.

Interviewer: Okay.

Music Therapist B: And with that music imagery they can carryover...

Interviewer: Wow!

Music Therapist B: ... that gait pattern.

Interviewer: Okay and that would be more mainly for the occupational type therapy or physical therapy.

Music Therapist B: Hmm...Hmm.
Interviewer: That’s with the body.

Music Therapist B: Now I haven’t implemented that technique yet because I still have a lot to learn about R.A.S. I was introduced to it.

Interviewer: That’s interesting.

Music Therapist B: So, yeah.

Interviewer: That’s the first time I’ve heard it, too.

Music Therapist B: So I should get you some information that explains it better since I haven’t implemented it yet or I really don’t have a firm grasp on it yet.

Interviewer: Okay.

Music Therapist B: Hmm...but other ways that I might use instruments for range of motion would just be maybe a drum or maybe it’s a triangle. I’m holding the triangle up here and they have an instrument in their hand and they need to...
Interviewer: Okay.

Music Therapist B: ...reach to play the instrument. One of the girls I was working with never used her left hand and so if there’s an instrument she really, really wants and we don’t allow her to use her right hand, she has only one other option and that’s to use her left hand. So in the beginning is, was still full physical prompts to bring her arm up to the instrument. But then after, hmm...in her case, it was about 3 or 4 months of that full physical prompt that we were able to decrease the criteria to ah...partial physical prompt.

Interviewer: Okay.

Music Therapist B: And then after she was able to reach that criteria, we were able to, to hmm...rewrite the objective to verbal prompt only...

Interviewer: Okay.
Music Therapist B: ...and now she reaches with her left hand if it’s presented on the left side of the body, she reaches with her left hand.

Interviewer: That’s awesome.

Music Therapist B: So, hmm...it’s, the objectives are written the same as you would have in an I.E.P. setting. This person will reach with her left arm when given, uh..., one verbal prompt three to five trials by June, 2004.

Interviewer: Okay.

Music Therapist B: And, uh... often times the music therapy objective, they would add in one more help level which is uh...this person will reach with her left arm, uh...with one verbal prompt and musical stimulus.

Interviewer: Okay. So that’s how you write your goals.

Music Therapist B: Yeah, yeah, or perhaps you’re providing a musical prompt that goes...reach...up, up, up, up. So now you’re using a musical stimulus that supports that movement
and maybe you also want her to wait and wait and we’re still here. You’re only supposed to give one verbal prompt and she’s not reaching so the song provides that structure for her. Reach...up, up, up, up. She knows that’s the length of the song, and so, perhaps, it will motivate her to do it.

Interviewer: So it acts as a motivator, too.

Music Therapist B: Yeah. So that would be speech. We talked about speech goals. We talked about a physical therapy goal. Hmm...it’s, it’s uh...a goal written in the I.E.P. in a classroom setting, like telling time. You were talking about using...

Interviewer and Music Therapist B: We’re going to rock around the clock tonight.

Music Therapist B: When the clock strikes...and you fill in the blank or the big hand’s up, wherever you have it there. We also use uh...counting to 100 by tens. We talked about that a little bit, so count to 100, count by tens, count to 100, let’s begin...10, 20, 30, 40, 50, 60, 70, 80, 90, 100
and that is called pneumonics, musical pneumonics training.

When...

Interviewer: Okay.

Music Therapist B: ...you're adding a rhythm or melody to something to help memorization.

Interviewer: Okay.

Music Therapist B: They're just learning it by rote...

Interviewer: Right.

Music Therapist B: ...at this point.

Interviewer: Exactly.

Music Therapist B: So you’re using music to help them learn it by rote...

Interviewer: Okay.
Music Therapist B: ...or learning their phone number. I’ll
give you my childhood phone number...8 - 3 - 8 - 0 - 6 - 1 -
9...using that rhythm to memorize.

Interviewer: To memorize.

Music Therapist B: Which is a series of numbers.

Interviewer: It’s real crucial.

Music Therapist B: Right.

Interviewer: Right.

Music Therapist B: Hmm...the ABC’s. We all have the ABC
song and people memorize things best in uh...groups, when
things are grouped together and no more than seven.
ABCD...there’s seven...

Interviewer: Yeah.

Music Therapist B: HIJK...now they squish all these
together so you have...
Interviewer and Music Therapist B: LMNOP... So you still have seven beats in there...

Interviewer: Beats.

Music Therapist B: ...in there...

Interviewer: Yeah.

Music Therapist B: ...and you put them in those groupings and you’re able to memorize.

Interviewer: Right.

Music Therapist B: Much quicker.

Interviewer: Yep.

Music Therapist B: And in some children’s cases with a disability, they’re able to memorize something where they weren’t able to memorize at all before...
Interviewer: Right.

Music Therapist B: ...or for years and years they’ve been working on learning their address and now they’re 16 years old and still don’t know their address. Even at...hmm...I’ll give you my address. So 1-3-2-9-2 Archibald Lane. I’m just making this up on the spot.

Interviewer: Right.

Music Therapist B: Hmm...What, what was my address? I’ll give you my childhood address. Hmm...Tustin, California 9-2-6...what was the address? 9-2-6...9-2-7-8-0... 9-2-7-8-0, whatever it is. Say, say they’re memorizing it within that structure.

Interviewer: Oh. It’s neat how you can use music to get all this stuff out of them. Okay. Hmm...what kind of instruments do you use, then, besides the drum?

Music Therapist B: Ah...To accompany myself, I primarily use the guitar because it is the easiest thing to tote around.
Interviewer: Okay.

Music Therapist B: Hmm...I’ll use the keyboard sometimes, hmm...to accompany myself, hmm...The instruments that I ask the, the students to play, if I’m working on fine motor, I might have them on the keyboard, isolating fingers on the piano or keyboard. Hmm...Often times I’ll have them strum the guitar instead of being able to use one index finger...hmm...using the drums...uh...rock n’ speel. Sometimes I’ll use this, this to do an assessment to find are they able to do a neat pincer grasp. Are they able to pull it off...

Interviewer: Oh. Okay.

Music Therapist B: ...pull each key off or, for the fine motor skills, put it back on. Hmm...The cabasa is a Latin instrument and uh...sometimes I’ll use this. I talked with the occupational therapist and they informed me about brushing. What they’ll do is part of the sensory integration or the sensory diet for children with hmm...sensory issues, and so the cabasa can act like the brush, also.
Interviewer: Oh.

Music Therapist B: And so that may be an important part of their daily routine, occupational therapy, so they need so many, you know uh...periods of time where they’re getting that same brushing. So if the occupational therapist requests that, then we can use that with the cabasa. Then you can also provide a structure to that so they know how long it’s going to last, by putting a song to it.

Interviewer: Okay.

Music Therapist: So they can feel the beginning of the song, the middle of the song, and they know the end of the song is coming. So...

Interviewer: I see.

Music Therapist B: If they don’t like it, at least they know where the end is.

Interviewer: Okay, to be able to tolerate it, so that hmm...
Music Therapist B: And you know there’s, there’s other approaches to help with structure of time, where maybe, you know, maybe, you have ten coins and you need to do this ten times and so you’re putting the coin into a bucket.

Interviewer: Okay.

Music Therapist B: And you have nine left, and you know there’s nine more times.

Interviewer: Okay.

Music Therapist B: I’ve seen that in school districts.

Interviewer: Okay.

Music Therapist B: I haven’t uses that technique

Interviewer: Okay.

Music Therapist B: But hmm...to show that passage of time, to show how many trials...
Interviewer: Okay.

Music Therapist B: ...are still necessary...

Interviewer: Okay.

Music Therapist B: ...to help keep them on task...

Interviewer: Okay.

Music Therapist B: ...where you can use music to do that.

Interviewer: Okay.

Music Therapist B: So they’re feeling the structure and the time period through the song.

Interviewer: Through the music.

Music Therapist: Yeah.
Interviewer: That's good. I didn't think of doing that. I'll have to maybe use that.

Music Therapist B: Yeah.

Interviewer: Okay. Yeah. Because they have a hard time with the end, the end of something, beginning...

Music Therapist B: Hmm...hm...

Interviewer: ...and middle.

Music Therapist B: And the transitions.

Interviewer: Okay. Hmm...how does music affect communication? We pretty much touched on that already.

Music Therapist B: Hmm...hm...

Interviewer: Hmm...How does music affect behavior?

Music Therapist B: Differently for each person. Hmm...perhaps somebody with autism has a hyposensitivity to
sound and they’re not hearing a certain voice, uh...frequency and so they’re not responding to it. Maybe they’re just not hearing it as loudly, or a hypersensitivity to certain sounds. A lot of times there’s white noise. There’s an ocean drum instrument that I use that has a lot of little beads inside and you turn it and it sounds like the wave.

Interviewer: Okay.

Music Therapist B: It’s white noise...

Interviewer: Yeah.

Music Therapist B: ...and sometimes that is very loud to them if they have a hypersensitivity to that sound. Hmm...so there’s instruments that I’m not going to use with certain people after doing that assessment and finding...

Interviewer: Okay.

Music Therapist B: ...and finding do they even have a hypo- or hypersensitivity to certain sounds.
Music Therapist B: Hmm...if they don’t, hmm...music can help, uh...with behaviors. If you’re looking at like an acting-out behavior, uh...by giving it that structure...

Interviewer: Okay.

Music Therapist B: Hmm...obviously, it can help in relaxation.

Interviewer: Yeah, that’s definitely a given.

Music Therapist B: Now here’s an interesting thing. When I was a senior at Chapman University, for my senior project, hmm...I worked with the exercise class, hmm...exercise. I can’t remember now. They’re on the track for physical therapy, but doing exercise.

Interviewer: Physiology.
Music Therapist B: Yeah, something like that. Anyway, so I worked with that class and I wanted to test, hmm...music effects on heart rate and oxygen consumption.

Interviewer: Oh.

Music Therapist B: Specifically for hmm...applying it to relaxation.

Interviewer: Right.

Music Therapist B: So we had them hooked up to all the calibration machines had them breathing into this and testing their heart rate, and I used two different kinds of music. What I consider sedative music and it was because the tempo was slow, the instrumentation was very melodic and then _________ music was very quicker tempo, hmm...and the selection I chose, the slow piece was Kenny G., the "Wedding Song."

Interviewer: Oh.
Music Therapist B: And the faster piece was “Sing, Sing, Sing.”

Interviewer: Okay.

Music Therapist B: I think it was Glen Miller.

Interviewer: Yeah, yeah, yeah.

Music Therapist B: That swing song.

Interviewer: Sing, Sing, Sing, yeah, okay.

Music Therapist B: Hmm...and their heart rate was up during the slow piece and I had hypothesized their heart rate would go down during the slow piece.

Interviewer: Which is the “Mozart Effect” which you hear about all the time.

Music Therapist B: Well...
Interviewer: Where your heart rate will mirror what that music is 60 times a minute.

Music Therapist B: My understanding of the “Mozart Effect” was hmm... tests that were done to look at uh...helping children with spatial relations.

Interviewer: Okay.

Music Therapist B: So I’m not aware of those side effects related, in relation to heart rate.

Interviewer: Okay.

Music Therapist B: I’m only aware of it in relation to the specific testing they were doing. Hmm...I haven’t read a whole lot about it. But hmm...

Interviewer: See, that would be part of...if it wasn’t the “Mozart Effect,” it was something else where your heart rate is supposed to mirror what the relaxation music is going on in the brain.
Music Therapist B: Sympathetic vibrations is a, is a hypothesis that could go with this. If you put two clocks on the wall and one clock is beating at a certain time, the other clock can start to beat with it because of the sympathetic vibrations in the wall.

Interviewer: Okay.

Music Therapist B: And, you know, the theory is, is your heartbeat is another ticker.

Interviewer: Oh.

Music Therapist B: That perhaps it would slow down. But in this case the heart rate went up during the slow song.

Interviewer: Yeah.

Music Therapist B: And so I interviewed the uh...subjects afterward and they said that they hated Kenny G.

Interviewer: Oh.
Music Therapist B: So that their heart rate went up because they were aggravated by the song.

Interviewer: Emotionally.

Music Therapist B: Yeah.

Interviewer: And that triggered the heart rate to go, okay.

Music Therapist B: Yeah. So how does music affect behavior? It affects people very differently depending on an emotional attachment to the song, depending on whether or not they have a hypersensitivity to certain noises. Hmm...

Interviewer: So by noticing their behavior, say, if they're nonverbal, hmm...escalating in a negative way, then you would just stop using that material or that song...

Music Therapist B: Hmm...
Interviewer: ...and maybe then try something else because you don’t want to do anything to aggravate them.

Music Therapist B: Right, right, in that particular setting.

Interviewer: Okay.

Music Therapist B: But it may be something else that was causing it, and you just have to hmm...continue to do an ongoing assessment all the way through providing services.

Interviewer: Okay. So you’re, you’re observing continually, too. Okay, so you’re looking for antecedent behaviors, too, especially with children with autism. It sounds like you work really well with all the disciplines. Everybody comes together. It’s like Interdisciplinary.

Music Therapist B: I think it’s really important that everyone does that, because our background is hmm...We have a lot of courses we take in psychology, adolescent psychology, child psychology, abnormal psychology, psychology of music, and you have a lot of music courses
you are taking, music theory, music theory, music history. But we're primarily trained in behavioral science.

Interviewer: Okay.

Music Therapist B: Occupational therapy, physical therapy are a physical science...

Interviewer: Okay.

Music Therapist: ...and...

Interviewer: Do you take studies in those, too, as well?

Music Therapist B: No.

Interviewer: Okay.

Music Therapist B: So it is really important that I work with the, the O.T. and the P.T. because I’m not trained in those areas.

Interviewer: Okay.
Music Therapist B: I am trained hmm...to see how music can affect behavior, whether it’s a sound coming out of their mouth or a movement, so that’s definitely a motor skill.

Interviewer: Right.

Music Therapist B: But my anatomy and physiology class is not nearly to the extent of the curriculum that they took.

Interviewer: And do you again have behavior modification classes, too, or is that covered in your psychology part?

Music Therapist B: It’s covered in the psychology.

Interviewer: Okay, and, hmm...in order to become a music therapist, do you need to be able to play an instrument?

Music Therapist B: Yes. You need to be proficient in two, uh...instruments. hmm...piano and then uh...usually guitar, and my main instrument is my voice. So you also usually have a main instrument that you’ll continue in music performance.
So somebody whose main instrument is violin, they’re still going to need to be able to play piano or guitar.

Interviewer: Okay. Oh. So it’s kind of like three.

Music Therapist B: Yeah. I was really lucky. My aunt, uncle, mom, dad, everyone plays an instrument, and so family get-togethers is pass the guitar around. So I learned to play guitar when I was 15, 16 years old. Hmm... I, I’ve been singing in choirs since I was 5 years old. I was originally spending, going to college to be a music education major, hmm...studiying voice. Hmm...then I transferred to Chapman University. I had worked with uh...children with disabilities before and at my high school and I often sat with my friends that had disabilities. I enjoyed what they had to offer and hmm...I enjoyed what I had to offer them. So I just had uh...a particular interest in being with people with disabilities. And so when I found out about music therapy halfway through college when I went to Chapman University, I signed up right away.

Interviewer: Okay.
Music Therapist B: This is the perfect union.

Interviewer: You connected.

Music Therapist B: This is the perfect union for me.

Interviewer: Okay. Hmm... How do you use music throughout the day? That would be basically for the classroom teacher because you're probably in and out with different sessions with different children. Do you ever go into a classroom...

Music Therapist B: Yes.

Interviewer: Okay, and work as a group with, with children?

Music Therapist B: Currently, I'm not doing group sessions. Hmm... In one of the I.E.P.s, it's written consult to student model so I'm working with the teacher and the student in the classroom setting. But the other students are at their center at that time. So although they're in the classroom setting and I'm working with the teacher,
it's not in a group, like uh...uh...floor time or something like that.

Interviewer: Okay and it's called consult or cooperative.

Music Therapist B: Or, yeah, in this I.E.P., it's called consult to student. So we're getting a consultation with the teacher as we're working.

Interviewer: Okay. So you're still working, okay, like a training session, too, okay.

Music Therapist B: Hmm...how do you address multiculturalism in music being we're in a multicultural state?

Music Therapist B: Yeah, well, it's...just...it's very fortunate that I love folk music. So I do, I pick a lot of songs in a group and Ella Jenkins, Ella Jenkins has a lot of folk music songs. Hmm...who else? Pat Palmer and like one of Ella Jenkins's songs is "Jambo"...and they repeat "Jambo...Jambo, Jambo." It's Swahili for "hello."

Interviewer: Okay.
Music Therapist B: So they're getting that call and response. "Jambo, Jambo." They're repeating it. Hmm...Let's see. There's a song on the guitar that I use for turn taking.

Interview with Music Therapist C—San Bernardino County

Interviewer: Thank you, Miyoko, for meeting me today to answer questions for my thesis on music therapy. So I'm just going to ask a question and you can just respond.

Music Therapist C: Okay.

Interviewer: Hmm...what is your position?

Music Therapist C: My position is rehabilitation music therapist in Patton State Hospital which is connected with the judicial system to mentally, not typical, enough to go to a trial or they are already sentenced but due to mental illness cannot be in a prison. So they are sentenced to so many years to Patton State.
Interviewer: Okay. What is your ethnic background?

Music Therapist C: Hmm...I am Japanese. I came in this country for...I live in this country for 15 years.

Interviewer: Okay. Have you...did you do your schooling here then?

Music Therapist C: Hmm...hmm...

Interviewer: Okay. Where did you do your schooling?

Music Therapist C: I went to the University of Kansas for music therapy.

Interviewer: Okay and what is your age?

Music Therapist C: 40...44.

Interviewer: Okay. What kind of students hmm...I shouldn’t say students hmm...what kind of patients do you teach or interact with?
Music Therapist C: Hmm...right now I'm meeting with people who came back from the court process still waiting for welfare child union which is they're already sentenced. They have to take the medication because they are not stable enough yet.

Interviewer: Okay. Hmm...how do you use music in your sessions?

Music Therapist C: Hmm...there is a dynamic range. The function is so wide so I use a drumming to hmm...enhance the communication skills for the low-functioning people and also those people essential for belongingness as a group and I can use it for focusing, to increasing attention span, and sometime to block out what__________________.

Interviewer: Okay. Have you hmm...ever...this question isn't in your...I had just thought about it. Hmm...have you ever worked with children or other adults with hmm...autism?
Music Therapist C: Hmm...not just autism. But I have one adult who had autistic, autism who lived in a group home. This person has been in both therapies since he was little because parents are both professors and they both involved with autistic program in the campus.

Interviewer: Okay.

Music Therapist C: Besides him, I have hmm...one autistic that severely hmm...severe, mental, slight physical disabilities in a school setting.

Interviewer: Hmm...what kinds of music do you use in a class?

Music Therapist C: I usually use instrumental music because part of the, my improvisation is singing, ah...not, not American, improvisational type of music does use more Eastern.

Interviewer: Like guitar? Guitar would be one instrument.

Music Therapist C: Hmm...hmm...
Interviewer: Do you play guitar?

Music Therapist C: Yes, I do, a little bit.

Interviewer: Okay. What kind of instruments do you use?

Music Therapist C: Ah...my major instrument is percussion, so like a drum. It’s not a drum set, but the only kind of drum, ah...percussion is ah...

Interviewer: A tall drum.

Music Therapist C: Yeah. Any hand drums, too. Tambourine. It doesn’t...only...They can have a choice to pick.

Interviewer: Oh good! It’s good to have a choice. Okay. How does music affect communication?

Music Therapist C: Hmm...possibly...people who don’t even have much hmm...vocabulary or verbal skills, they sense each other
more and you know that the effect they are betting brighter and they are making eye contact.

Interviewer: Oh good! How does music affect behavior?

Music Therapist C: Hmm...seems music, most of the music seems calmer than chaos.

Interviewer: A relaxing effect.

Music Therapist C: Relaxing a little bit.

Interviewer: Okay. How do you use music throughout the session? Hmm...can you describe what you do?

Music Therapist C: Ah...

Interviewer: And some of these questions may again be redundant? I just...

Music Therapist C: Yeah, yeah. Hmm...

Interviewer: Describe one of your sessions.
Music Therapist C: Okay. Well, usually you use just...uh...most of the time just play especially a kind of drums help to heighten the mood. I do such a thing and along with the, creating the beat and sometimes the women, they have making a good sense out of it...

Interviewer: Okay.

Music Therapist C: ...and that is really good.

Interviewer: Good. So you use more of a hmm...not traditional, but the improvisational. Do you use improvisational?

Music Therapist C: Yeah, that is right. Yeah, you can say that, improvisational.

Interviewer: Okay.

Music Therapist C: I don’t...because I’m not into teaching, I mean school setting so I don’t because most people can’t do the music anyway.
Interviewer: Okay.

Music Therapist C: So it's just a kind of, well, focuses on awareness of themselves.

Interviewer: Okay. Hmm...how do you address multiculturalism through music, and being that you're Japanese...

Music Therapist C: Hmm...hmm...

Interviewer: ...do you bring some of that ah...music into it...

Music Therapist C: Hmm...

Interviewer: ...your own culture?

Music Therapist C: Well, you know Japanese, well, that's the one thing I don't know much about. I don't focus on Japanese music because I, as a musician trained in Western music...
Interviewer: Okay.

Music Therapist C: ...but hmm...my setting, people from the Hispanic, Latino culture and some of the Asia, Islamic, we do have a big Cambodian and _______ Mexico, Latino _______ and Black, and so for me it’s so hard to use nonimprovisational hmm...to not focus on one kind of culture.

Interviewer: Culture. Hmm...okay. How much time do you spend like with one session or does it depend?

Music Therapist C: Hmm...usually 45 to 60 minutes.

Interviewer: Okay. Hmm...what have parents or, hmm...in your case, the clients that you see, their families shared with you about any noticeable changes in behavior or communication since the application in your hmm...in your session?

Music Therapist C: Hmm...I’m not sure because this is the...hmm...there’s supposed to be support from the community due to their hmm...past behaviors and some of , I believe
some of them share with their family members what they do in the sessions.

Interviewer: Okay. Hmm... what are the negative effects, if any, in music application?

Music Therapist C: But if you use the wrong music, then, a... that music can bring up the fear...

Interviewer: Oh!

Music Therapist C: ... and your, hmm... if the music associated with a memory of who, what, during the tribulation or something happened, the music triggers those memories.

Interviewer: Oh! Okay.

Music Therapist C: So that’s so we don’t, no one knew until that had happened.

Interviewer: No. You wouldn’t know until it would.

Music Therapist C: Right, right.
Interviewer: How would you, how would you know how to shift or change to redirect?

Music Therapist C: Hmm...the...the person, the person is capable of saying, you know, stop the music and you immediately stop.

Interviewer: Okay.

Music Therapist C: ...and, and that’s, you can share in the group because that is confidential.

Interviewer: Okay.

Music Therapist C: But hmm...also, there is sometimes that with specific drumming or something, a larger sound like which you treat as a random or stationary...

Interviewer: Okay.

Music Therapist C: Hmm...due to a physical memory.
Interviewer: Okay.

Music Therapist C: So that's the same if you, if you do a drama circle or something and the people you mention don't want to play, you make the best of it than they can pass it.

Interviewer: Okay. Oh! Okay. How does music affect social skills?

Music Therapist C: Hmm...I believe the music, the majority of the music, it has a positive affect with social skills. They communicate more, they basically more... Because hmm...the time we provide to increase the self-esteem.

Interviewer: Okay.

Music Therapist C: Hmm...especially that's for the kids. Very, very important to make themselves feel better.

Interviewer: Okay. Do you see hmm...improvement in eye contact?
Music Therapist C: Eye contact, yeah.

Interviewer: Okay.

Music Therapist C: Also, they can run after touching or more choice which they want to play even the simple. Do you want to play tumbling or blocks? Do you want to play drums or, or something simple, but they make choices. They make choices.

Interviewer: Okay, and what are the ages of your clients that you see?

Music Therapist C: Right now, I have 20 young adults to about, my experience is with hmm...the physically disabled children are ages 6 to 12.

Interviewer: Okay. You do young ones.

Music Therapist C: Hmm...hmm.

Interviewer: Okay. I just wanted to thank you once again for taking time to meet with me. I really appreciate it.
Music Therapist C: You’re welcome!

Interview With Music Therapist D—Los Angeles County

Interviewer: What is your position?

Music Therapist D: I am the senior clinician at California State University’s Music Therapy and Wellness Clinic, Northridge. I’m also a consultant, hmm... in private practice. I supervise music therapy students and interns.

Interviewer: What is your ethnic background?

Music Therapist D: I am Caucasian. I was born and raised in England and studied and practiced in London until 1996.

Interviewer: What is your age?

Music Therapist D: 43.
Interviewer: What kind of students do you teach or interact with?

Music Therapist D: The students that I see in the clinic are primarily pediatrics, children with special needs. Hmm...the youngest is around 2 years old, and I work with children of all ages through school age and three adults. But primarily my hmm...population is early intervention and children with special needs of school age.

Interviewer: How do you use music in the classroom or session?

Music Therapist D: In my sessions, I use music almost continually. I use, I use music as a way to engage the children in a form of interaction. I use it to communicate, I use it to connect, to reengage, to stimulate, to contain, hmm...and primarily my sessions are all music based.

Interviewer: What kinds of music do you use or apply?
Music Therapist D: I try to use a wide variety of music as possible. I use all the resources of music and think very carefully about what kind of style or idiom or mood I’m creating with the music. Hmm...my music typically is acoustic. I use improvisation ah...using the piano for its, its harmonic components, my voice and various percussion instruments. Ah...I use all different styles and modes of music. I use pentatonic, diatonic. I use Spanish and Middle Eastern modes. Hmm...I use blues and ostenoters to improvise over. I use children’s tunes. I use ah...tunes from ah...movies, Disney themes. Hmm...I’m just open to exploring and utilizing the language of music.

Interviewer: What kinds of instruments do you use?

Music Therapist D: I use acoustic instruments of good professional quality so that the child gets a really hmm...immediate and true feedback from their actions. So I use drums, typically rhemo drums with a good quality head. Ah...I use Oft percussion instruments. I use a piano. I use an auto harp with ah...16 different chords. Hmm...I use tone bars and hand chimes made by Suzuki. I use a range of percussion instruments, cabasas, griro, hmm...clamay wood
I love to use the ocean drum and ah...some blowing instruments. I use recorder malottocats, slide whistle, and some smaller whistles. Hmm...and I'm, when I'm choosing the instruments, I'm thinking about how the instrument can be accessible to that particular child, if it has a true sound quality and I'm choosing instruments that can be easily differentiated and I'm using instruments that don't have too many distractions in terms of hmm...visual stimulation.

Interviewer: How does music affect communication?

Music Therapist D: Music is used as an aid to improve general and global communication skills and it often, it often offers another link to communication that is not reliant on verbal abilities. So music affects communication in terms of offering a range of expressive abilities through music and it also supports hmm...a way of communicating nonverbally hmm...which is hmm...universal throughout all the populations.

Interviewer: How does music affect behavior?
Music Therapist D: This is a huge area. It’s, it’s a whole semester’s course, coursework at CSUN. Hmm... but we can use music to affect behavior. We see psychological and physiological differences when we use music and when we don’t. We can use music as a contingency, as entrainment, as a reinforcement, as a reward, as a stimulus, hmm... as a container for behaviors, as a mirror for behaviors. So there, there’s really a whole radius of implications for using music to affect behavior.

Interviewer: How do you use music throughout the day?

Music Therapist D: I use music in all my sessions hmm... to greet the child, to give the child challenges through music, to support the child’s development, and to help them process and revisit what they have just experienced or learned and then to give a sense of closure. Hmm...

Interviewer: How do you use music throughout the session?

Music Therapist D: Music is used to support every activity, to support every hmm... intervention to get to a nonmusical goal. Hmm... and there’s also, within music,
there's also therapy that can happen within music, changes that can take place purely looking at the components of music and how you can change them. So music is used to support nonmusical interventions and also, music is used in its own way to provide change and experiences within the music itself.

Interviewer: How do you address multiculturalism through music?

Music Therapist D: Hmm...I, as I said earlier, I use universal modalities of different musics. Hmm...I'm using some multicultural activity books right now. I'm addressing specific cultures especially for the adult populations and I also embrace the different celebrations and festivals. I'm actually very careful about which festivals religious or otherwise that we celebrate with these children. So it's very personalized.

Interviewer: How much time do you spend with music application?

Music Therapist D: Hopefully 100%.
Interviewer: What have parents shared with you about any noticeable changes in behavior or communication since music application in school?

Music Therapist D: I think from my point of view parents are able to say that what happens in a music therapy session can be transferred to the home or school situation. If they observe, they can see how musical components are used, how music could be used and for instance, with transitions, how music can be learned, could be used to help with cognitive abilities. How music can be used to help with skills, you know, such as tying your shoes and brushing your teeth and all these kinds of things. So parents are able to notice that there’s an application for it to be used in the home or school situation. So things that happen in school for kids that have had music therapy, for kids on the autistic spectrum that they can be more tolerant of group situations, especially music. They often say the first event which their child really participated was the group circle singing time or the school concert when they were able to sing as part of the group, and often that music is their
first way of interacting with kids in the school. Hmm...hopefully we’re addressing emotional issues in music therapy so that they can be hmm...they can be in a more ah...in a mutual state where they then go to school after a session. Then a lot of the behaviors or feelings have been channeled or acknowledged in music therapy. Hmm...we’re often working very specifically on cognitive skills which are then transferred to the school setting. So, you know, for instance, left, right, or pre-writing skills with movement to music or hmm...structuring, how do you structure a story or an instrumental sequence. These are all things that can then be supported at school.

Interviewer: What are the negative effects, if any, in music application?

Music Therapist D: Hmm...my belief is that as we can only be effective when we use language that is understood and that we communicate effectively. The same is true with music and that our music needs to be very carefully planned and implemented and ah...consciously used. Hmm...the negative effects in my experience only has been with a couple of children where they have so much difficulty integrating
sensory experiences or they get an auditory overload or they cannot stop the music from running through their head as they say. That in those situations, hmm...there needs to be some kind of desensitization or a, a rest from music. But the negative effects, in my experience, have been hmm...very few. There are some children that do find it difficult to really interact in such a direct way using music in that music is, you know, is very right in the moment with them. Hmm...but that is not necessarily a negative effect. It's, it's, you know, it's targeting one of their areas of their difficulty. Hmm...but we do have to be very careful and conscious about the type of music that we use, especially with children who have a tendency to hmm...to, to, you know, have a sensory or, or processing difficulty.

Interviewer: How does music affect social skills?

Music Therapist D: I think music is a great way to implement social skills. When you’re playing with somebody else, you’re referencing them, you’re listening to them, you’re taking turns just in a normal conversation, you’re adapting to somebody else, hmm...you’re being creative, you
are being sometimes, being a leader, sometimes being a supporter. It’s a great way to implement social skills and I think the, the social skills can also change. We need different social skills when we’re coming into adolescence or as an adult and music can address those and I think certainly with the adult population, music is a great way then of bringing people together in, into a social interaction at, at a different level. So, hmm...music is a really profound way to ah...support the development of really appropriate social skills. Thank you.

Interviews with Instructional Assistants

Instructional Assistant—Riverside County Office of Education

Interviewer: Thank you today for answering these questions for my thesis on music therapy. Okay. I’m going to start out with Question number 1. What is your position?

Instructional Assistant A: I’m uh...an instructional aide.
Interviewer: Number 2. What is your ethnic background?

Instructional Assistant A: Well, I have a little bit of English, uh...Spanish and American Indian.

Interviewer: What is your age?

Instructional Assistant A: I'm going to be 57 April 30.

Interviewer: How do you use music in the classroom?

Instructional Assistant A: I use music in just about everything. When I need him to check the schedule, we usually sing it. When we need him to put something away, we usually sing it. When we're out on track and we're walking, we're usually singing. Uh...even like in, in, uh...we have calendar, we sing all during that time. Just walking from here to the lunch room, we sing. We always sing.

Interviewer: What kind of students do you teach?

Instructional Assistant A: Autistic children.
Interviewer: Okay. Uh...What kinds of music do you use?

Instructional Assistant A: Children’s music, uh...We use classical music to relax them. Uh...every now and then, we let them listen to uh...today’s modern music the kids listen to all the time.

Interviewer: Okay. What kinds of instruments do you use, if any?

Instructional Assistant A: Uh...we have drums, cymbals, the sandpaper blocks, the sticks, oh, the bells.

Interviewer: Okay. How does music affect communication?

Instructional Assistant A: Well...

Interviewer: Like their language...

Instructional Assistant A: If you can’t get them to respond in a verbal command, if you try music, you usually get results with the music.
Interviewer: Okay. How does music affect behavior?

Instructional Assistant A: It relaxes them.

Interviewer: Okay. How do you use music throughout the day?

Instructional Assistant A: Uh...Just about everything. You know. From uh...from, from when we’re doing the brushing, we’re singing in the mornings when they come in. This is the way we brush Bryan, brush Bryan, or whatever, you know. It’s just a constant use of the music. When we can’t get them to respond to a command or something, verbal command, we use the music to get him focused on what we want to him to do.

Interviewer: Okay. How do you use music throughout the curriculum?

Instructional Assistant A: The same. Just about everything.

Interviewer: Okay.
Instructional Assistant A: Because uh...I think one of the objects is to keep them calm and to keep them busy and music is one of the most important things in their lives, to have communication with them. So I think it’s the same as the other question.

Interviewer: Okay. How do you address multiculturalism through music?

Instructional Assistant A: Uh...I don’t think we have that problem.

Interviewer: Okay. Sounds like you touch on different types of hmm...different types of music in the classroom.

Instructional Assistant A: Uh...uh.

Interviewer: How much time do you spend with music application?

Instructional Assistant A: Uh...I’d say about 80% of the time that we spend with the kids is about with music.
Interviewer: So it sounds like you’re using it pretty much throughout the day.

Instructional Assistant A: Yeah.

Interviewer: Okay. What have parents shared with you about any noticeable changes in behavior or communication since music application in school?

Instructional Assistant A: Ah...I have not had contact with the parents, but ah...I imagine Ms. Nicolosi has. So she would be able to answer that question.

Interviewer: Okay. What are the negative effects, if any, in music application?

Instructional Assistant A: Maybe them not wanting to stop listening to the music.

Interviewer: Okay.
Instructional Assistant A: That's about the only thing. You know, uh...

Interviewer: Trying to end it.

Instructional Assistant A: They're...they're...they're always music oriented. The majority of them are.

Interviewer: Okay. How does music affect social skills?

Instructional Assistant A: It lets them be themselves. Ah...I am amazed sometimes when, when we're just walking or something and all of a sudden he starts humming or singing. Ah...when we're doing ah...a project or work in the classroom and all of a sudden they, they start wiggling and dancing. So it's like kind of lets them be themselves and we enjoy watching them because it's, it's very unusual. I mean, these are children that you wouldn't expect much from, but just to see them react to music is very enlightening.

Interviewer: Okay.

Instructional Assistant A: I enjoy it.
Interviewer: Okay and that's the last question. Thank you so much, ah...for letting me interview you.

Instructional Assistant A: Thank you.

Instructional Assistant B—Riverside County Office of Education

Interviewer: Thank you, Pat, for meeting with me today to do my interview questions for my thesis on music therapy. So I'm going to start with Number 1. What is your position in the classroom?

Instructional Assistant B: Instructional Assistant

Interviewer: Okay. Number 2. What is your ethnic background?

Instructional Assistant B: Uh...German, Italian, and Irish.

Interviewer: Okay. Hmm...what is your age?
Interviewer: Okay. What kind of students do you teach?

Instructional Assistant B: Hmmm...autistic students.

Interviewer: Okay. How do you use music in the classroom?

Instructional Assistant B: Ah...we use it throughout the day hmm...to help do different types of work ah...that, calendar we do, we have music in that ah...we use it sometimes just to help with a different tone in the classroom. Now and then, sometimes us and the students need it. Hmmm...sometimes trying to get them to check their schedules instead of telling them to go check it, they don't seem to respond, we'll sing time to check your schedule and ...

Interviewer: Okay.

Instructional Assistant B: ...and they even finish singing it and go check it.
Interviewer: That's good. Okay. What kinds of music do you use?

Instructional Assistant B: Oh...all different types of children’s music. We use ah...soothing relaxation music.

Interviewer: Hmm...okay. Is it geared to what level that you’re teaching?

Instructional Assistant B: Is it geared to their level?

Interviewer: Yeah.

Instructional Assistant B: Pretty much, yeah.

Interviewer: Okay. What kinds of instruments do you use?

Instructional Assistant B: Ah...we have rhythm sticks and bells, tambourine, drum.

Interviewer: Okay. Kind of hands-on.

Instructional Assistant B: Hands-on, yeah.
Interviewer: Okay. How does music affect communication?

Instructional Assistant B: Hmm...

Interviewer: Does it stimulate language? Have you seen it stimulate language in the classroom...getting them to talk?

Instructional Assistant B: They respond to it, hmm...with singing and sometimes they even sing back to us.

Interviewer: Okay. Hmm...how does music affect their behavior?

Instructional Assistant B: It seems to help calm them. Hmm...they always seem to be able to hmm...like hear, they hear and respond to the music more so than just talking.

Interviewer: Okay. Hmm...how do you use music throughout the day?

Instructional Assistant B: Hmm...we use it hmm...for break time...
Interviewer: Okay.

Instructional Assistant B: ...and if someone wants to sit and relax and listen to music or just to have it in the background, relaxation music.

Interviewer: And you said, also, through the, throughout the day, like with schedules.

Instructional Assistant B: Schedules.

Interviewer: Okay. Some of these questions may be redundant. Okay. How do you use music throughout the curriculum? Hmm...do you use it like in reading, calendar time, through books?

Instructional Assistant B: Yeah, we have, we use it through the calendar. We do reading. We have the books.

Interviewer: Okay. How do you address multiculturalism through music, if you do?
Instructional Assistant B: We don’t.

Interviewer: Okay. Hmm...how much time do you spend with music application?

Instructional Assistant B: In a day?

Interviewer: Yeah. It’s pretty much...

Instructional Assistant B: Pretty much most of the day...

Interviewer: Okay.

Instructional Assistant B: ...we use it.

Interviewer: And what have parents shared with you about any noticeable changes in behavior or communication since music application in school, if any, if you...?

Instructional Assistant B: Hmm...no. Hmm...only one parent of the one student. She’s the one that has actually told me that the music helps and he will respond to music.
Interviewer: Okay.

Instructional Assistant B: Because it helps her son.

Interviewer: What are the negative effects, if any, of music application?

Instructional Assistant B: Hmm...there is none that I know of.

Interviewer: Okay. How does music affect their social skills...like getting along or sitting next to someone or hmm...learning to shake their hands, things like that with their social skills?

Instructional Assistant B: Well!

Interviewer: I know social skills is a tough one.

Instructional Assistant B: Yeah. Well I do know like when we go shopping in the van, we'll have the old, old songs on and a couple of them will start singing together to the music and I guess that's...
Interviewer: Oh. Okay.

Instructional Assistant B: ...in a way socializing.

Interviewer: That would be, yeah, social skills.

Instructional Assistant B: Yeah, yeah.

Interviewer: Okay. That's it, and I want to thank you once again for taking time to interview with me.

Instructional Assistant B: Sure!

Interviewer: Thank you.

Instructional Assistant C-Riverside County Office of Education

Interviewer: Thank you, Kayla, for meeting with me today to answer questions hmm...on my music therapy thesis. Okay. Question Number 1 hmm...what is your position?
Instructional Assistant C: I am an instructional assistant in an autistic classroom.

Interviewer: Okay. What is your ethnic background?

Instructional Assistant C: Hmm...I am White hmm...Irish, French, a little bit of German, a little bit of Scottish.

Interviewer: European descent.

Instructional Assistant C: Yes.

Interviewer: Okay. What is your age?

Instructional Assistant C: I am 28.

Interviewer: Okay. What kind of students do you teach or interact with?

Instructional Assistant C: Autistic children.

Interviewer: And their age level?
Instructional Assistant C: Hmm...they are high school level, 14 and we can have them up to 22.

Interviewer: Okay. How do you use music in the classroom?

Instructional Assistant C: We use music hmm...actually throughout the day. Hmm...we use it with hmm...having them check their schedules, maybe if they’re not focusing, we can redirect them with a song and it kind of focuses them a little bit to do what they need to. Hmm...through hmm...classroom activities such as calendar, science, things like that. We can hmm...take a book and make it into a song hmm...it kind of helps the children.

Interviewer: Okay. What kind of music do you use or apply?

Instructional Assistant C: Ah...we use all kinds. We use ah...relaxation music for the listening center. We use hmm...

Interviewer: Children’s music at all?
Instructional Assistant C: Yes. We use children’s music, also, hmm...through like calendar, also, learning the days of the week, the months of the year, things like that.

Interviewer: Okay. What kinds of instruments do you use, if any?

Instructional Assistant C: Hmm...we use rhythm sticks, bells, hmm...we have little sandpaper blocks.

Interviewer: Okay. Hmm...How does music affect communication? Does it stimulate language?

Instructional Assistant C: It does. It stimulates speech. Hmm...for like if we’re in a session where we’re doing “Who’s here today?” hmm...a lot of the children will respond to a question as for, you know, the song will say “Where is the student?” and they will say, “You know, I am here,” and they will say it with a song.

Interviewer: Okay. How does music affect behavior?
Instructional Assistant C: Hmm...it has a calming effect. Hmm...like with relaxation music, when things are getting too much in the classroom and we redirect them to some quiet time hmm...put on the relaxation music and it will kind of bring them back down to, you know, a level where they can be handled.

Interviewer: Okay. How do you use music throughout the day?

Instructional Assistant C: Hmm...we use it for...pretty much everything hmm...like I said relaxation, through hmm...our classroom activities, you know, you can relate it to science, to arts n’ crafts, to hmm...you know, to pretty much, you know, math hmm...we have, you know, music for, you know...numbers hmm...things like that.

Interviewer: Okay. Hmm...I’m going to skip the next question because that’s redundant of Number 10. Hmm...how do you address multiculturalism through music?

Instructional Assistant C: Hmm...actually, we have a music video that we watch on Fridays that relates to America but
it also goes through the different cultures that are in America and its shows hmm... the, the, not only, it gives them the opportunity to see like the different, maybe, outfits and stuff that they’re wearing but the different songs and, and, and how they can relate it to other cultures, cultures.

Interviewer: Okay. Great! How much time do you spend with music application?

Instructional Assistant C: We, we use it throughout the day.

Interviewer: Okay. Hmm...what have parents shared with you about any noticeable changes in behavior or communication since music application in school, if you have had any hmm...contact with them?

Instructional Assistant C: Hmm...I know with our students that are nonverbal hmm...you know, some of them have become much more verbal and I think that some of that is, is because of the music being able to stimulate speech even if
it's repeating a song, it's still stimulating them to, to verbalize things.

Interviewer: Okay. Great! What are the negative, negative effects, excuse me, if any, in music application?

Instructional Assistant C: I don't think there are any negative effects. I've only seen very positive.

Interviewer: And the last question, how does music affect social skills?

Instructional Assistant C: Hmm...I think they all enjoy the music and so it's, you know, one of those things with the, the lack of social, social skills with the autism. When the kids are listening to music, it maybe brings them together a little bit more as, as a group.

Interviewer: Okay. Do you want to share anything else before we close?

Instructional Assistant C: No.
Interviewer: Okay. Thank you for taking time to answer my questions. Thank you.

Instructional Assistant D/State Representative for Unlocking Autism/High Functioning Individual with Autism—Riverside County Office of Education

Interviewer: Thank you for meeting with me to answer questions for my music therapy. So we’ll start with Number 1. What is your position?

Instructional Assistant D: Hmm...I’m an instructional assistant for the county and I, I’m also a state representative for Unlocking Autism and do discrete trial at many of the kids’ homes.

Interviewer: Okay. What is your ethnic background?

Instructional Assistant D: Caucasian.

Interviewer: Okay. What is your age?

Instructional Assistant: 20.
Interviewer: What kind of students do you teach or interact with in your sessions and in the classroom?

Instructional Assistant D: The majority of them have autism.

Interviewer: Okay. How do you use music in the classroom and also in your sessions with discrete trial or hmm...doing the home care that you do?

Instructional Assistant D: Hmm...we use music in different ways depending on the kids. Hmm...sometimes we will use it to teach them how to answer a question. Like, if you wanted them to answer their name you would sing about hmm...what is your name and then they have to reply and because autistic kids like things to be completed, once they learn that song, they, they want to finish the song or they’ll answer and so it’s a good way of motivating them to finish and answer.

Interviewer: Okay. What kind of music do you use or apply?
Instructional Assistant D: Hmm...usually, it's a simple rhythmic types of songs that are easy to mix into the background of rhythm, words.

Interviewer: Do you make up some on your own, too?

Instructional Assistant D: Yeah, or use familiar melodies.

Interviewer: Okay. Hmm...what kind of instruments do you use, if you use any?

Instructional Assistant D: Hmm...usually simple ones like maracas or tambourines or drums or percussion types of things.

Interviewer: Okay. How does music affect communication?

Instructional Assistant D: Hmm...a lot of autistic kids have an easier time speaking because they...uh...most autistic kids hmm...process hmm...music, well, music is a different part of the brain than language is, and so it's easier for all kids with autism to learn to talk through music because they,
they can use words while activating the language part of the brain so it's easier for them to form what they want to say.

Interviewer: Okay, and they begin to speak.

Instructional Assistant D: Yeah, they begin to speak and sing and...

Interviewer: Hmm...can you give me any examples or cases that you're working on where the kids that you've used music with are actually starting to speak or...

Instructional Assistant D: Actually, actually two of my students, they're twin brothers and they're nonverbal and with discrete trial and music as well, they've, they're answering some questions through songs and well they started just singing words to songs and then slowly we're hmm...learning new songs. They have to answer their names and ages.

Interviewer: That's good. How does music affect behavior?
Instructional Assistant D: Hmm...it usually calms the kids down. It can also stimulate them and make them very hyper, too, because they, they get excited about it and they just get really into it and so it may not calm all kids. It might make them too excited and you can only do a certain amount before...

Interviewer: Okay. So you probably have to see what’s going on first...

Instructional Assistant D: Yeah.

Interviewer: ...in the environment and see what their needs are. Okay. How do you use music throughout the day in the classroom?

Instructional Assistant D: Hmm...we use, in the classroom we use, hmm...in the classroom we use it as a greeting in the morning to say hello and good morning to everyone and then we use it several times like while we’re, they’re learning to do the dishes or doing like life skills, tasks. We’ll sing about doing that like...or even simple things like if we
want them to walk and they’re running and so we just incorporate, incorporate it through the day.

Interviewer: Okay. So you sing the command.

Instructional Assistant D: Yeah.

Interviewer: Okay and get them to respond. Hmm...how do you address multiculturalism through music? Do you address the different cultures or do you pick out certain songs to relate to that child’s background at all, or do you just kind of use standard, hmm...

Instructional Assistant D: Yeah, we just use standard songs for commands and answering names and...

Interviewer: Okay. How much time do you spend with music application in your sessions and in the classroom?

Instructional Assistant D: Hmm...we usually just do it throughout whatever we’re doing because we just involve it in whatever we’re doing. So...
Interviewer: Okay. So there's not a certain time.

Instructional Assistant D: Yeah. There's not a certain time for it.

Interviewer: Okay. Hmm...what have parents shared with you about any noticeable changes in behavior or communication since music application in school or in the sessions or in discrete trial?

Instructional Assistant D: Well, that really depends on the kid, like some kids are, are talking because of it, of music. Hmm...a lot of my younger kids especially if they are just not paying attention and doing their own thing, and you can't get their attention, you start singing a song and a lot of times they'll turn around and give you their focus and so you can just get their attention by it.

Interviewer: Okay. So that's good. Okay. Focus in, in on what they're supposed to be doing. What are the negative effects, if any, in music application?
Instructional Assistant D: Hmm...like I said, sometimes they get overstimulated and they get real hyper. Hmm...

Interviewer: Depending on their mood, probably.

Instructional Assistant D: Yeah.

Interviewer: Hmm...okay or what’s happening in the environment.

Instructional Assistant D: Yeah.

Interviewer: Okay. Hmm...how does music affect social skills, such as eye contact, hmm...greeting people, hmm...just socializing with another person?

Instructional Assistant D: It, well, it just teaches them. It keeps their interest. If like I said, if you sing to some of the kids, they’ll automatically give their attention to your and look right at you. Hmm...they can also learn social skills through it like answering different questions, various questions that we’re working on. You
can teach them through music. Hmm...it also gives them
something else to relate to other people by that.

Interviewer: Okay. Do you have anything else you would
like to share, hmm...with me before we close?

Instructional Assistant D: Oh, I also have high-
functioning autism.

Interviewer: Okay. Thank you. Has music hmm...how has
music helped you, if any, in growing up?

Instructional Assistant D: Hmm...I always have, I usually
almost always through the day have some sort of song or
melody going through my head and so a lot of times when I’m
not like focusing on something, I’ll start, start singing
it, and I don’t really realize it. It’s just going through
my mind and in a lot of ways it helps me to really think
about how things are structured and like if I’m not sure of
the, the hmm...the grammar, the grammar of a sentence, then a
lot of times if I’m thinking out, then a sound will pop in
and then I know that’s right and so...
Interviewer: Okay. Did your teachers ever use hmm...music with you in growing up or was something that you hmm...basically did on your own?

Instructional Assistant D: Hmm...my mom used music with me a lot...

Interviewer: Okay.

Instructional Assistant D: ...and we did use some music in school but not a lot.

Interviewer: Okay. Alright. I, I just want to thank you today for taking time to answer these questions. Thank you.

Instructional Assistant D: Sure.

Interview With Parent of Child With Autism

Interview With parent of child With autism—Riverside County
Interviewer: Thank you for taking time to answer questions for my master's thesis on music therapy. So what is your position?

Parent: I'm a parent of a child with autism.

Interviewer: Okay and how old is your child?

Parent: He is uh...almost 18 years old.

Interviewer: Okay. What is your ethnic background?

Parent: You mean what...

Interviewer: What nationality or...

Parent: Italian.

Interviewer: Okay. European descent.

Parent: I guess.
Interviewer: Okay. These are just standard questions to put into the research...

Parent: Okay.

Interviewer: And what is your age?

Parent: 54.

Interviewer: Okay. Hmm...what kind of disability does your son have?

Parent: Hmm...autism.

Interviewer: Okay and how do you use music with Brandon at home?

Parent: Hmm...usually we, we listen to a lot of music because it seems to calm him down and we use music hmm...basically to get him to do things.

Interviewer: Okay. What kinds of music do you use?
Parent: Hmm...well, our favorite thing is oldies but goodies music because that’s what his mother likes being that she’s so old and hmm...we use a lot of hmm...instrumental type music, not a lot of...when we’re trying to get him to calm down, we use like classical music and things like that.

Interviewer: Okay. Hmm...do you use instruments at all, any kind of hand instruments with him?

Parent: Hmm...we have a harmonica that he likes to, to play but hmm... we don’t know how to play nay musical instruments ourselves...

Interviewer: Okay. Does he actually...

Parent: ...and I have a flute, I have a little flute.

Interviewer: Okay. Does he like to blow on it? Yeah?

Parent: Yeah, hmm...hmm.

Interviewer: Oh, good. Hmm...how does music affect communication?
Parent: Hmm...in my son’s case, that’s how he initially even learned how to speak was through singing like your name is Brandon. That’s how we, we learned to teach him how to, to initially even talk...

Interviewer: Okay.

Parent: and answer questions.

Interviewer: Okay. Hmm...how does music affect his behavior?

Parent: Hmm...it seems to have a very calming effect on his behavior. Sometimes some of the music, I think, overly excites him, like his sister’s kind of music, the loud, or maybe it affects me and then it affects him.

Interviewer: Okay.

Parent: Usually it’s very soothing and calms him down.
Interviewer: Okay. Hmm...and then how do you use music throughout his day?

Parent: Hmm...well, in the morning when he wakes up, we use music to get him out of bed.

Interviewer: Okay.

Parent: Hmm...and then hmm...just, we use it throughout the day to get him to comply with certain tasks and things and when he’s ready to go take a bath, we use music. When, you know, we use it throughout the day for everything.

Interviewer: Okay. For transitions, too...

Parent: Hmm...hmm.

Interviewer: ...it seems.

Parent: Hmm...hmm.

Interviewer: Okay. How much time do you spend then with music? It sounds pretty much throughout the day...
Parent: Yes.

Interviewer: ...whenever.

Parent: Hmm...hmm. When we see, when they see the need to get his attention, or to get him calmed down. We use it as a tool for that.

Interviewer: Good. Hmm...what have teachers or anyone else, O.T., that have worked with Brandon, shared with you about any noticeable changes in behavior or communication, hmm...if they’re using music in school?

Parent: Hmm...again, I think that’s, I think we, we agree as teachers and the people who work with him agree, have all agreed, that this is part of what makes him hmm...learn...

Interviewer: Okay...

Parent: ...and I, I know they use it for teaching him to tell time, and hmm...the days of the week, the months of the year, things like that, that he couldn’t do now, and
couldn’t do then, and now we can, you know, even ask him what day of the week it is and, and sing, and he’ll know exactly what day of the week it is.

Interviewer: ...and he responds back.

Parent: Hmm...hmm. That response, I think that’s what using it in school did.

Interviewer: Do you see any negative effects hmm...in music?

Parent: Like I said, the only thing I see is when there’s something, some loud kind of music, it may affect him hmm...as far as sensory, too much overload and hmm...other than that, no, I don’t see any negative effects. So...

Interviewer: So it would depend on, on the type of music that’s playing...

Parent: Hmm...hmm.

Interviewer: ...and maybe his mood...
Parent: ...and his mood.

Interviewer: ...at that time.

Parent: Right. Exactly.

Interviewer: And how does music affect social skills, if it does in any way, like eye contact or hmm...interaction with other people?

Parent: He...hmm...hmm...hmm...as the years have gone on of using music with him, it’s taught him to interact with his peers, with his sisters. I’ll just speak as a home, parent, hmm...to where he’ll initially go up and try to even have them dance with him and things like that. He’ll grab their hands and want to dance or hmm...just giving him, you know, it’s a way to communicate with him to get him to interact with us.

Interviewer: Okay.

Parent: Yeah, eye contact and things like that.
Interviewer: Okay. Is there anything else that you would like to share with me in closing?

Parent: Hmm...I just think that using music as a tool for children, especially like mine, is like hmm...I, I don’t think all autistic children maybe will respond to music that I, from what I’ve seen in years I’ve been dealing with my son and other children ah...that, that seems to be not all, but most of them. So using music to hmm...reach these children, I think is like one of the most, the easiest way to get them to respond to you...

Interviewer: Okay.

Parent: ...and the most, ah...effective for my child.

Interviewer: Okay. I just want to thank you for taking time out of your busy schedule to answer my questions. Thank you.

Parent: You’re welcome.
Interviewer: Thank you for answering questions for hmm...my music therapy thesis. Okay. So my first question is what is your position?

Teacher: I’m a special education teacher. I teach severely handicapped students.

Interviewer: Okay. What is your ethnic background?

Teacher: I’m South African.

Interviewer: Okay. What is your age?

Teacher: Hmm...ageless.

Interviewer: Okay. I like that. Okay. What kind of students do you teach or interact with?
Teacher: I teach moderate to severe students. Ah...do you want to know their like uh... their conditions or...

Interviewer: Yeah, the different disabilities, if you would.

Teacher: The different disabilities, yeah, okay. I work with several disabilities ranging from Down's syndrome to cerebral palsy hmm...let me see, Angleman Syndrome...

Interviewer: Okay.

Teacher: ...and mental retardation.

Interviewer: Okay. How do you use music in the classroom?

Teacher: How do I use it? I use it for, you know, like to teach academics. I use it for P.T., you know their physical education. Hmm..I use it just for, you know, relaxation. Ah...for instance, like in the afternoon, we use it to relax. When the students come back from lunch, they want to go on and just play relaxing music in the background like jazz type of music and they just relax and
get their thoughts together and then after that we go on to our next activities.

Interviewer: Okay. What kinds of music do you use?

Teacher: I use all different, oh wait a minute. I'll be right there. I'm sorry.

Interviewer: No, that's okay.

Teacher: Finding music. For instance, for children's music, children, you know, like uh...like children's music, jazz, uh...popular, pop music.

Interviewer: Okay. Sounds like you use a variety.

Teacher: I use classical. I use a variety.

Interviewer: Okay. What kinds of instruments do you use, if you use any?

Teacher: Okay. We have instruments but we're not using them this year.
Interviewer: Okay.

Teacher: Yeah, we haven't used them. We have all kinds of instruments...

Interviewer: Okay.

Teacher: ...and it all depends on the type of population I have. But each year your population varies...

Interviewer: Okay.

Teacher: ...and uh...the more higher functioning I have, then I'll use those. They seem to like it more and understand it and...

Interviewer: Okay.

Teacher: ...that uh...yeah this year my population, I have too many behaviors. So for right now we're not using them, but we do have them and I usually use them, too.
Interviewer: Okay. How does music affect communication?

Teacher: Well, music enhances communication skills, hmm... on all levels. You know, whether it’s speech, whether it’s uh...nonverbal. It enhances, it because I’ve seen it with many students. Like once we had, I had a nonverbal student who came to my class 3, like years ago and the time he left, his speech, he was verbal. His communication had tremendously increased...

Interviewer: Okay.

Teacher: ...whereas, you know, before he was just using his P.E.C.S. in a nonverbal way to communicate and then when he left last year he was communicating verbally.

Interviewer: Oh, so...

Teacher: Yeah, hmm...hmm...

Interviewer: He developed the speech.
Teacher: Yeah, yeah, verbal communication. It enhances it. It not only enhances communication, it enhances actually other areas, motor skills. Because I’ve seen it in one student a few years ago when I started having music during art, you know, where we color things. He couldn’t even hold a crayon before and we started playing music in the background. He started listening. His behaviors decreased.

Interviewer: Oh!

Teacher: He used to make a lot of noise and, you know, be very...he was not very attentive. The music just, he’d just quiet down and just started attending...

Interviewer: That’s awesome!

Teacher: ...and yeah, working...hmm...hmm.

Interviewer: That brings me to my next question. How does music affect behavior?
Teacher: Oh, it reduces and, and it all depends on the student. Ah...it doesn't always decrease behaviors in every student, but in most of the students I have worked with, it does. I have one student here. It doesn't seem to have any effect on him.

Interviewer: Okay.

Teacher: But others it really does. It reduces inappropriate behaviors.

Interviewer: How do you...

Teacher: That's why I use it.

Interviewer: ...okay, and how do you use music throughout the day? Do you just use it in, in certain classes or do you use it throughout the day? It sounds like you do.

Teacher: I use it throughout the day.

Interviewer: Because you've used it for relaxation, you said.
Teacher: Yeah. We use it for relaxation.

Interviewer: For P.E.

Teacher: For P.E. When we do Zoo Phonics, we use the tape, the music tape...

Interviewer: Okay.

Teacher: ...and so we use that, and then that also is enhances academics, you know, because they're learning the alphabet.

Interviewer: The letters.

Teacher: They're learning words. Hmm...hmm.

Interviewer: Okay. How do you use music throughout the curriculum, and again, some of these questions are redundant.

Teacher: It's the same, it's the same.
Interviewer: It's the same. How do you address multiculturalism through music?

Teacher: Ah...I will tell you. Oh, the only music I have in my class. I have a mixture of Hispanic and American, Afro-American, and Caucasian. Where I use hmm...we use different types, you know, with African beats, we use Mexican music from Mexico.

Interviewer: Okay.

Teacher: They all love that.

Interviewer: Oh, good.

Teacher: So we use that.

Interviewer: So you try to tie in the children's background.

Teacher: Yeah, yeah, yeah, yeah.
Teacher: So with their different backgrounds yeah.

Interviewer: And then how much time do you spend with music application?

Teacher: It all, like most of the time it’s like from 20 to 30 minutes.

Interviewer: Okay.

Teacher: Actually, no, 15 because our relaxation time is 15 minutes. So 15 to 30 minutes.

Interviewer: What have parents shared with you about any noticeable changes in behavior or communication since music application in school?

Teacher: Well, with that one student I told you whose, uh...verbal skills increased, his mother said that there was an improvement she could see it, and well some, you know,
of my other students who are no longer here, they're in middle school, their parents saw an improvement.

Interviewer: Okay.

Teacher: You know, in their, their whole, in everything...

Interviewer: Okay.

Teacher: ...and most of them didn't have inappropriate behaviors so it was more like academically and these other domains that we work with, motor skills and; you know, social and those types of things.

Interviewer: Okay. What are the negative effects, if any, in music application?

Teacher: There aren't any that I know of, otherwise I wouldn't use it.

Interviewer: Okay.
Teacher: If there were any negative effects like this one student who doesn't like music, as you saw, what I did was go for a walk this morning.

Interviewer: Okay. Right.

Teacher: Because that's not what he likes.

Interviewer: Okay.

Teacher: Because I have seen with him it just brings on inappropriate behavior. He likes walking...

Interviewer: Okay.

Teacher: ...and so, you know...

Interviewer: It's quiet. Maybe he just needed a more quiet environment at that time and...

Teacher: Yeah, and walking is best for him. It reduces the inappropriate behaviors, you know, yeah, hmm...hmm...yeah.
Interviewer: And my last question, how does music affect social skills?

Teacher: Oh, it enhances social skills. It ah...if, for instance, ah...what, what kind of social skills are you talking about?

Interviewer: Hmm...

Teacher: Be specific.

Interviewer: ...being inappropriate, like shaking hands, hmm...

Teacher: Okay, now.

Interviewer: Talking or playing with another child.

Teacher: Okay, now for social skills, when I’m teaching them what I call skill streaming, I don’t use music.

Interviewer: Okay.
Teacher: So I cannot tell you if that the only thing I have found that increases social skills is when you actually doing the ah...the behaviors in the pictures, the visuals.

Interviewer: Okay.

Teacher: But I don’t know anything about using music, hmm...

Interviewer: Okay.

Teacher: I don’t use music.

Interviewer: For attention span...

Teacher: It increases...

Interviewer: ...or eye contact.

Teacher: ...that would come under academics.

Interviewer: Okay.
Teacher: So that it does enhance that so that’s why I use it...

Interviewer: Okay.

Teacher: ...to increase attention span, which it does. Normally, if I just did like regular instruction, you know, just teach without music, they wouldn’t attend for 30 minutes like they do when there’s music...

Interviewer: Right.

Teacher: ...and yes, it does reduce, it...they listen more, that’s a social skill.

Interviewer: Hmm...hmm.

Teacher: They listen.

Interviewer: Okay.

Teacher: So it does improve social skills in that sense...
Interviewer: Okay.

Teacher: ...and hmm...they respect the person who's teaching by listening...

Interviewer: Exactly.

Teacher: ...and staying on task...

Interviewer: Okay.

Teacher: ...and following directions. So in that sense, yeah, it does. Yeah, it enhances social skills. But I never looked at it, you know...

Interviewer: ...in that way.

Teacher: Yeah. The other things that I teach, you know, the other social skills, I don't, I usually have pictures because they like visuals.

Interviewer: Definitely.
Teacher: They like visuals actually to do it, you know, ah...to actually do the skills themselves and so we go out and we form the skill.

Interviewer: Okay. I just want to thank you for answering my questions. Thank you.

Teacher: Okay, okay, okay, okay.
APPENDIX B

OBSERVATIONS
On Monday, March 22, 2004, a special education elementary teacher for Riverside County instructed five students to check their picture schedules for music and walk to the music center in the classroom. The students' disabilities range from emotional disturbance, Down's syndrome, Angelman syndrome, cerebral palsy, and autism. The students range in ages from 6 to 12 years. The staff ratio was five students to three adults.

The students sat nicely in a circle in their chairs and began to sing along with a "Good Morning" song from the Gregg and Steve music selection of C.D.s as the adults modeled the singing. The children appeared to be happy as demonstrated by their smiles and attentiveness. The song assisted children in developing language and social skills. The next song assisted students in developing number recognition by counting numbers as a student pointed to the correct corresponding number with a pointer. The other students sang their numbers as they followed along. Students stood up and moved side to side, imitating a side step in dance, as they sang their numbers. The movement
was an important element in keeping the students’ attention.

The next song was to develop month identification. The teacher helped the student point to each month as the students all sang the months together. The days of the week were worked on with the next song. Once again the teacher helped the student point to the correct corresponding day as the students sang the “Days-of-the-Week” song.

The students worked on shape identification next. Each student was given a colored shape (triangle, circle, square, rectangle). As the song played, the students listened attentively and followed directions by either standing or sitting when the direction was sang to them to stand or sit with the corresponding shape. The teacher used redirection and a motivator such as snack for attentive behavior. The students appeared to be focused and attentive to the task at hand as they continued to engage in the movement that was coupled with the music.

At 11:15 a.m. the teacher was observed in another music session with her students. The students worked on developing their gross motor skills by listening to the music and performing the stated activity. First, the
students checked their picture schedules and gathered on the carpet standing in a group. The students participated in the following activities: walking, tip-toeing, running, skating, hopping, and galloping. The series of directions was coupled with music and enhanced the level of the performance by the students. Listening skills, attending and focusing skills, and language development were also addressed during this music activity. The students smiled and appeared to enjoy participating in this session.

The students participated in another song, "The Giggle Wiggle," and followed the verbal directions expressed in the song. When they would state to jump up and down, the students jumped up and down and imitated the adults who modeled these movements for them. The "Chicken Dance" was the next song that the students participated in and imitated the adults. This song was followed by "Driving a Car." The students sat on the floor and pretended to drive cars. They needed to follow directions auditorally without visuals. Once again the modeled behavior from the adults aided the students in successfully participating in this activity. Left and right differentiation was addressed through listening to the verbal commands in the music.
Throughout the music session, the students were very attentive and inappropriate behaviors were not observed. The students participated in the language development activities that were coupled with the music. Attending and listening skills appeared to be enhanced during the interaction between the adults and the students during the music session as the students followed directions with minimal prompting and minimal redirection.

On January 28, 2004, the senior music therapist for California State University (CSUN) orchestrated several music therapy sessions. Her first client was a 10-year-old male with autism. At approximately 10:30 a.m., the mother arrived with her child and entered the Wellness Clinic for music therapy. The child entered the 10-x-20 room with a one-way mirror smiling and walked up to the rhythm sticks and picked them up. The music therapist played a tune on the piano and sang a song to welcome the child. For a 5-min period of time the child played the cymbal, the rhythm sticks, and tall drum. On one side of the room the piano was positioned at an angle so she could view the client while she improvised and attempted to establish a social connection with the child. She improvised by picking up
the tune the child played by what he was doing with the instruments and the intensity and volume of the music.

After approximately 5 min, the child stood up and walked around smiling and clapping. To refocus and gain the child’s attention, the music therapist used the tambourine, sang a song, and had the child imitate what she was doing. She would hit the tambourine, and then the child would hit the instrument. They created a song as they played together. The music therapist always used her voice for music if she was not playing on the piano.

The third activity was also approximately 5 min in length. The music therapist used children’s literature in the session with the child. She sat next to the child and sang “Quick as a Cricket” to him. She would have the child sing and repeat the phrases of the words after she sang them. She continually kept him engaged and encouraged with positive reinforcement and praise. As the child would perseverate on his lips by placing his hands and fingers on them, the music therapist would redirect him by placing her hand gently over his and removing his hand away from the mouth area.

Since the child’s attention span was short, the music therapist engaged the child once again in a 5-min activity.
The next activity was a movement song, marching and freezing as the music therapist sang the song. The child would either sing along or fill in the blank at the end so he would focus on his speech and language development. He also counted the beats in between each chorus.

The child said “It’s time to go” several times throughout the session. The music therapist redirected the child once again by saying, “Is it time to go?” Then she redirected him by instructing the child to sit next to her with the stringed keyboard. She played the tune, “My Bonnie lies over the Ocean.”

After another 5 min elapsed, the music therapist used the boomwhackers and had the child pick out verbally designated colors. As she named a color, they each would hit the other’s tube while she sang the tune. The child began to redirect himself once again by calling out the color to hit with his stick to gain his own attention.

As the 30-min session drew to a close, the child sat next to the music therapist at the piano. She sang a goodbye song with the child’s name so it would personalize the session. They then shook hands to say goodbye.

At approximately 3:15 p.m., the music therapist participated and orchestrated another music therapy session.
with a 14-year-old child with autism. She entered the room pushing the client in a wheelchair. She placed her in front of the tall drum. She struggled to lift her arm to hit the drum because of her stiff gross motor movement due to seizure activity. The music therapist played a hello song and sang the song with the client's name in it. The client lost her focus so Julie changed the tune on the piano to regain her attention. The client began to play the tall drum again.

After the 5-min "Hello" song, the music therapist moved the client over to the piano in her wheelchair. She began to smile and attempted to play the piano. The music therapist and the client played together for approximately 20 minutes. It was an improvisational piece and the music therapist took the child's lead. After playing the piano, she moved the child to the electronic handsonic drum. Again the child struggled with her arm movement in attempting to play the drum, but the music was a definite motivator in her participation. At the end of the session, the music therapist sang the "Goodbye" song to the client emphasizing how much fun they had today and how much she enjoyed being with the client.
The seizures have interfered with speech and language development. The music therapy is implemented as improvement of quality of life and for social interaction rather than for verbal communication.

On February 18, 2004, another music therapist in the San Diego Unified School District was observed as he interacted with an 8-year-old female client with Down’s syndrome. When he entered the room, he sat down next his client and began to sing a "Hello" song. The student displayed a somewhat stubborn attitude in the beginning and kept repeating "Don’t touch me!" The music therapist would firmly but gently redirect her back to the activity he needed her to participate in. He would continue to use this approach throughout the 45-to-50-min session. The child study team in the San Diego Unified School District writes goals for the Individual Education Plan of the students. These goals are then worked on with the music therapist who creates songs for the student’s different goals. He worked on the student’s name, address, and phone number, having the child sing and speak in complete sentences. First, he would say the material and have the child repeat slowly, working on her articulation. Then he would play guitar and sing the material. The student would
periodically smile. He proceeded with the “ABC” song by first saying the letters. He would play a slow beat to improvise to the child’s rhythm to promote clear speech. After the student worked on the days of the week, months of the year, and her name and address, he reinforced the student’s attentive behavior by offering her a choice with visuals for reinforcement. The visual system is the Picture Exchange Communication System which is a system of icons with items created on the computer. By offering choices, students are taught how to make decisions and are given control to make these choices. The student chose an ocean drum to play with. When she chose the drum, she picked it up and began to move it side to side creating an ocean sound after the beads rolled on the inside. Throughout the session, the student would look away towards the window, but the music therapist would continue to redirect this behavior to keep her engaged in what she was doing. She actually did quite well sitting for the entire 50 minutes. Other objectives that were addressed were following directions and learning manners (politeness). The last educational objective was telling time on an analog clock. The music therapist took the “Rock Around the Clock Tonight” song and created a slower version to
have the student learn how to tell time to the hour. So the student will fill in the blank with the correct time after he sang, "When the big hand's on the 12 and the little hand's on the 1, it's 1 o'clock." At the end of the session, the music therapist let her sing a song of her choice or play with the ocean drum. After giving her a few minutes with the ocean drum, he gave her a sticker to reward her for the attentive and good behavior during the session. The final part of the session was singing the goodbye song using the student's name. The session had a definite beginning and end to give structure to the session. The music therapist worked on pronunciation with music and without music during the session. The materials used in the session included visuals such as picture icons, the alphabet, the student's name, address and phone number, the days of the week, the months of the year, magnet boards with letters, and a learning analog clock. The student appeared to be generally happy and smiled and laughed periodically during the session. At times the student would be uncooperative, but the music therapist patiently redirected her and waited for her to participate in the scheduled activity. The session was definitely a refreshing and positive experience for the student,
therapist, and observer. The therapist displayed excellent music ability and would pace the music with the student’s rhythm.

At 2:00 p.m., another music session was observed with a 10-year-old child with attention deficit hyperactivity disorder. The session took place in the classroom and the other students had already been dismissed for the day. The child entered the room and seemed to be in a hurry because he would verbally tell the music therapist that he wanted to hurry and go home. The music therapist continually redirected the child with positive remarks and told him, “First we need to work, then you can go home.” The child’s hands were continually busy and touching everything he could. He also was continually singing Christmas songs.

The music therapist opened the session with a hello song and asked, “How are you?” The focus of this session was to build upon the academic skills of the student. The first activity was working on money skills. The music therapist wrote a song that described the identity of coins. As he would sing and describe a coin, the student would pick up the corresponding coin. He sometimes would confuse a nickel and a dime. Next, the music therapist would sing a song for identifying the equivalence of money.
After this activity, he reinforced the attentive behavior and gave the student a break by letting the student play the triangle while he played the bongo drums. The student initiated the stop and go during the play time in the music session. Because of the attention deficit disorder, the music therapist allowed for a few breaks, including using the restroom.

After the break, the music therapist worked on addition skills with the student by using a frog game which included frogs as counters and two lily pads. He would place four frogs on one lily pad and two on another lily pad and then couple this action with a song that involved adding four frogs and two frogs.

The next activity focused on teaching time skills. The music therapist opened up with the medley, "We're going to rock around the clock tonight." Then he would sing, "When the big hand's on the 12 and the little hand's on the 1, it's __________." The child would fill in the blank with the correct answer. It was fascinating to see and hear the child respond with a musical answer. It was inspiring and refreshing to see the energy level and the rapport between the child and the therapist.
The music therapist proceeded to sing a song counting by 5's. The student did well singing with him. Counting by fives will enable the student to tell time correctly. The music therapist also sang a song to teach all the addends for 6 to a blues melody. He incorporated many styles of music to keep the student’s interest level.

At the closing of the session, the music therapist sang a “Goodbye” song to the student and then used a favorite C.D. that the student chose to listen to as a reinforcer for his attentive behavior and good sitting skills during the session.

The music therapist had outstanding musical ability and established a wonderful rapport in working with his clients. He displayed a firm but gentle nature with his students as well as an empathetic and caring attitude toward his clients. His creativity was commendable in his style of teaching. The clients displayed appropriate behaviors throughout most of the sessions and inappropriate behaviors were minimal and redirected when they did occur.
### Study Participants' Ethnicity, Age, and Student Types

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<th>Types of Students</th>
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<td>Music Therapist</td>
<td>Caucasian</td>
<td>26 years old</td>
<td>Autism, Learning Disabilities, William's Syndrome, ADD, Down's Syndrome, Multiple Disabilities</td>
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<tr>
<td>Contracted With</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>San Diego Unified</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School District</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-employed</td>
<td>Caucasian</td>
<td>29 years old</td>
<td>Autism, Cerebral Palsy, Mental Retardation</td>
</tr>
<tr>
<td>Music Therapist</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>Japanese</td>
<td>44 years old</td>
<td>Physically Disabled, Autism, Mentally Ill</td>
</tr>
<tr>
<td>Music Therapist</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Patton State</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital-Department</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of Mental Health)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior Music</td>
<td>Caucasian</td>
<td>43 years old</td>
<td>Children With Special Needs</td>
</tr>
<tr>
<td>Therapist (CSUN)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and Private</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent/Parent</td>
<td>Italian</td>
<td>54 years old</td>
<td>18-Year-Old Son With Autism</td>
</tr>
<tr>
<td>Advocate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructional</td>
<td>English, Spanish,</td>
<td>57 years old</td>
<td>Students With Autism</td>
</tr>
<tr>
<td>Assistant</td>
<td>American</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructional</td>
<td>German, Italian,</td>
<td>44 years old</td>
<td>Students With Autism</td>
</tr>
<tr>
<td>Assistant</td>
<td>Irish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructional</td>
<td>Irish, French,</td>
<td>28 years old</td>
<td>Students With Autism</td>
</tr>
<tr>
<td>Assistant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>German, Scottish</td>
<td>Caucasian</td>
<td>20 years old</td>
<td>Students With Autism</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------</td>
<td>-------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Instrucational Assistant/ State Representative for Unlocking Autism/ Adult With Asperger's Syndrome</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher</td>
<td>South African</td>
<td>?</td>
<td>Students With Moderate to Severe Disabilities Ranging From Down's syndrome, Cerebral Palsy, Angelman Syndrome, and Mental Retardation</td>
</tr>
<tr>
<td>Participants</td>
<td>Types of Music</td>
<td>Types of Instruments</td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Music Therapist A</td>
<td>very simple, familiar, repetitive songs</td>
<td>guitar, percussion, drums, shakers, ocean drum</td>
<td></td>
</tr>
<tr>
<td>Music Therapist B</td>
<td>folk, age-appropriate</td>
<td>drum, keyboard, guitar, cabasa, ocean drum, voice</td>
<td></td>
</tr>
<tr>
<td>Music Therapist C</td>
<td>instrumental</td>
<td>guitar, percussion, tall drum, hand drums</td>
<td></td>
</tr>
<tr>
<td>Music Therapist D</td>
<td>variety, all possible resources, acoustic, improvisation, piano, percussion, harmonic components, voice, children’s tunes, Disney themes, movies, Spanish, Middle Eastern, blues</td>
<td>acoustic, drums, auto harp, hand chime, tone bar, ocean drum, cabasa, blowing instruments, whistles, wood block</td>
<td></td>
</tr>
<tr>
<td>Parent</td>
<td>oldies but goodies, instrumental, classical</td>
<td>harmonica, flute</td>
<td></td>
</tr>
<tr>
<td>Instructional Assistant A</td>
<td>children’s, classical, relaxation, modern</td>
<td>drums, cymbals, sandpaper blocks, sticks, bells</td>
<td></td>
</tr>
<tr>
<td>Instructional Assistant B</td>
<td>children’s music, relaxation music</td>
<td>rhythm sticks, bells, tambourine, drum</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------------------</td>
<td>--------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Instructional Assistant C</td>
<td>relaxation music, children’s music</td>
<td>rhythm sticks, bells, sandpaper blocks</td>
<td></td>
</tr>
<tr>
<td>Instructional Assistant D</td>
<td>simple rhythmic types of songs</td>
<td>simple ones, maracas, tambourines, percussion types</td>
<td></td>
</tr>
<tr>
<td>Teacher</td>
<td>children’s music, jazz, pop, classical, variety</td>
<td>all kinds</td>
<td></td>
</tr>
</tbody>
</table>
Music's Affects on Communication, Behavior, and Social Skills

<table>
<thead>
<tr>
<th>Participants</th>
<th>How Does Music Affect Communication?</th>
<th>How Does Music Affect Behavior?</th>
<th>How Does Music Affect Social Skills?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Therapist A</td>
<td>provides alternate ways to communicate; makes you more comfortable to communicate; first we sing a song and gradually introduce syllables or sounds; use the same muscles to talk and sing</td>
<td>negatively or positively; can give children a chance to be in control</td>
<td>promotes appropriate social skills; allows child to be comfortable to express himself; to be in control; to be a leader</td>
</tr>
<tr>
<td>Music Therapist B</td>
<td>use a song to incorporate a progression to help stimulate filling in the blank; melodic intonation therapy - using the high and the low of the melody; structure of melody should follow the structure of speech; there are distinct pathways in the brain for speech and music can help with behaviors by giving it structure; relaxation; affects people very differently depending on emotional attachment to the song, depending on hypersensitivity to certain noises</td>
<td>technical error</td>
<td></td>
</tr>
<tr>
<td>Role</td>
<td>Description</td>
<td>Benefits</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Music Therapist C</td>
<td>singing but they also overlap; motivates students</td>
<td>relaxing effect allows child to make choices; improved eye contact; improved self-esteem</td>
<td></td>
</tr>
<tr>
<td></td>
<td>enhances communication skills; more eye contact; gives a sense of belongingness; improves attention span</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music Therapist D</td>
<td>aid to improve general and global communication skills; offers a range of expressive abilities through music</td>
<td>use music as a contingency, as entrainment, as reinforcement, as a reward, as a stimulus referencin g, listening, taking turns, adapting, being a leader, being creative</td>
<td></td>
</tr>
<tr>
<td>Parent</td>
<td>son learned to speak by singing to him</td>
<td>calms him down but sometimes can overly excite him if the music is too loud; transitions improved eye contact; interact with peers and sisters</td>
<td></td>
</tr>
<tr>
<td>Instructio nal Assistant A</td>
<td>music elicits a response to a musical command rather than a verbal command</td>
<td>relaxes them lets them be themselves; dancing; react to music</td>
<td></td>
</tr>
<tr>
<td>Instructio nal Assistant B</td>
<td>respond to the music and even sing back</td>
<td>calms them; responds to musical command shopping in the van and they start singing together</td>
<td></td>
</tr>
<tr>
<td>Instructio nal Assistant C</td>
<td>stimulates speech; student will respond to a question</td>
<td>calming effect</td>
<td>enjoyment; listening to the music; it brings the students together</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------------------------------------</td>
<td>----------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Instructio nal Assistant D</td>
<td>children with autism have an easier time speaking and learning to talk through music because they can use words while activating the language part of the brain so it is easier for them to form what they want to say</td>
<td>calms them down; it can also stimulate and make them hyper</td>
<td>keeps their interest; gets their attention; it gets the students to answer questions</td>
</tr>
<tr>
<td>Teacher</td>
<td>enhances communication skills (speech or nonverbal expression)</td>
<td>it reduces inappropriate behaviors; it does not always decrease behaviors in all children</td>
<td>behaviors decrease; increase attention span; shows respect for the person who is speaking; stays on task; following directions</td>
</tr>
</tbody>
</table>
## Participants' Use of Music, Application, and Time Spent

<table>
<thead>
<tr>
<th>Participants</th>
<th>Use of Music</th>
<th>Music Application in Classroom/ Individual Session</th>
<th>How Much Time Spent With Music Application?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Therapist A</td>
<td>social and academic reasons to support goals</td>
<td>teach social skills, greetings, motivate, write goals and music for the goals</td>
<td>plan, write and implement goals, 45-to-50-min sessions</td>
</tr>
<tr>
<td>Music Therapist B</td>
<td>to support speech, academic, occupational and physical therapy goals, consult with the interdisciplinary team</td>
<td>memorization, speech, greeting people, rhythmic auditory stimulation, melodic intonation therapy</td>
<td>up to 60-min sessions</td>
</tr>
<tr>
<td>Music Therapist C</td>
<td>to enhance communication skills, focusing, increase attention span</td>
<td>improvisation, set the mood</td>
<td>45-to-60-min sessions</td>
</tr>
<tr>
<td>Music Therapist D</td>
<td>continual, form of interaction, to engage to communicate, to connect, to reengage, to stimulate, to contain</td>
<td>greet child, challenge child, support child’s development, give sense of closure, support for every activity, provide change and</td>
<td>30-to-60-min sessions 100%</td>
</tr>
<tr>
<td>Role</td>
<td>Task</td>
<td>Example of Music Experiences within Music Itself</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Parent</td>
<td>to calm, to motivate</td>
<td>experiences within music itself</td>
<td></td>
</tr>
<tr>
<td>Instructitional Assistant A</td>
<td>everything, transitions, put something away, walking track, calendar</td>
<td>transitions, compliance with tasks, everything</td>
<td></td>
</tr>
<tr>
<td>Instructional Assistant B</td>
<td>to set tones in the classroom, transitions, to do different types of work</td>
<td>everything, focusing, commands</td>
<td></td>
</tr>
<tr>
<td>Instructional Assistant C</td>
<td>throughout the day, transitions, redirection, to gain attention, curriculum activities</td>
<td>break time, relax, listen to music, background music, schedules, curriculum (reading, calendar, books)</td>
<td></td>
</tr>
<tr>
<td>Instructional Assistant D</td>
<td>to respond to questions, to motivate, for completing a task</td>
<td>greetings, learning new tasks, commands (walk)</td>
<td></td>
</tr>
<tr>
<td>Teacher</td>
<td>to teach academics, physical education, relaxation</td>
<td>relaxation, zoophonics, learning alphabet, enhances academic</td>
<td></td>
</tr>
</tbody>
</table>

**Instructional Assistant A**
- 80% through day

**Instructional Assistant B**
- Most of the day

**Instructional Assistant C**
- Throughout the day

**Instructional Assistant D**
- Through whatever they are doing

**Teacher**
- 20-to-30 min sessions (circle time/relaxation)
Music's Noticeable Affects On Behavior and Communication

<table>
<thead>
<tr>
<th>Participants</th>
<th>Noticeable Changes in Behavior/Communication</th>
<th>Negative Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Therapist A</td>
<td>parents will say that children are singing songs</td>
<td>overstimulation</td>
</tr>
<tr>
<td>Music Therapist B</td>
<td>technical error</td>
<td>certain instruments may not be used due to hypo- or hypersensitivity to sounds</td>
</tr>
<tr>
<td>Music Therapist C</td>
<td>no contact with family members</td>
<td>certain music can bring up fears</td>
</tr>
<tr>
<td>Music Therapist D</td>
<td>information is transferred to the home or school, parents notice that there is an application for music to be used in the home, child participated in group circle for the first time</td>
<td>some children may have difficulty integrating sensory experiences</td>
</tr>
<tr>
<td>Parent</td>
<td>they use music school to teach him to tell time, the days of the week, the months of the year, and he responds back when asked what day of the week it is, we all agree that this is what makes him learn</td>
<td>loud music may overstimulate him</td>
</tr>
<tr>
<td>Instructional Assistant A</td>
<td>no contact, the teacher has</td>
<td>trying to stop the music</td>
</tr>
<tr>
<td>Instructional Assistant B</td>
<td>parent has shared that music helps and he responds to it</td>
<td>none</td>
</tr>
<tr>
<td>Instructional Assistant C</td>
<td>some students have become more verbal,</td>
<td>none</td>
</tr>
<tr>
<td>Role</td>
<td>Effect Description</td>
<td>Note</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Instructional D</td>
<td>Some have started talking because of the music, refocusing, and getting their attention</td>
<td>Overstimulation</td>
</tr>
<tr>
<td>Teacher</td>
<td>Verbal skills increased, improved motor skills</td>
<td>Sometimes student does not like music</td>
</tr>
</tbody>
</table>
## Music and Multiculturalism

<table>
<thead>
<tr>
<th>Participants</th>
<th>Multiculturalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Therapist A</td>
<td>focus only English because we are fading out the Spanish so that English become the primary language</td>
</tr>
<tr>
<td>Music Therapist B</td>
<td>folk, age-appropriate, children's music</td>
</tr>
<tr>
<td>Music Therapist C</td>
<td>do not focus on one culture’s music, trained in western music</td>
</tr>
<tr>
<td>Music Therapist D</td>
<td>universal modalities of different musics, multicultural activity books, embrace different celebrations, and festivals</td>
</tr>
<tr>
<td>Parent</td>
<td>not applicable</td>
</tr>
<tr>
<td>Instructional Assistant A</td>
<td>different types of music</td>
</tr>
<tr>
<td>Instructional Assistant B</td>
<td>none</td>
</tr>
<tr>
<td>Instructional Assistant C</td>
<td>multicultural video with music from different cultures around the world</td>
</tr>
<tr>
<td>Instructional Assistant D</td>
<td>standard songs for commands and answering names</td>
</tr>
<tr>
<td>Teacher</td>
<td>Hispanic, American, Afro-American</td>
</tr>
</tbody>
</table>
APPENDIX D

INTERVIEW QUESTIONS
What is your position?
What is your ethnic background?
What is your age?
What kind of students do you teach or interact with?
How do you use music in the classroom or session?
What kinds of music do you use or apply?
What kinds of instruments do you use?
How does music affect communication?
How does music affect behavior?
How do you use music throughout the day?
How do you use music throughout the curriculum or session?
How do you address multiculturalism through music?
How much time do you spend with music application?
What have parents shared with you about any noticeable changes in behavior or communication since music application in school?
What are the negative effects, if any, in music application?
How does music affect social skills?
APPENDIX E

PERMISSION SLIPS
CSUN Music Therapy Wellness Clinic Confidentiality Agreement

As an observer in the Music Therapy Wellness Clinic you are expected to respect the confidentiality of our clients. As such, your signature below insures observance of the following guidelines.

1. In any written observation forms or personal logs, refer to the client only by their first initial.
2. ALL persons must limit their discussion of clients ONLY to the classroom or clinic settings. Be especially aware of discussing clients in public arenas, even using what you may consider non-identifying information. Discussions of this type risk client confidentiality and leave the clinic liable for such breaches.
3. If you are a professional or other interested party, limit discussion of the client to the client's music therapist only.
4. Do not, under any circumstances, discuss your observations or pose questions to the parents or caretakers of the client.

Signature: Cheryl Nicolosi
Date: 1-28-04

I will use the observations for my thesis for CSUSB. I will not use any names to refer to my case study when writing my paper. I will refer to clients as A or B.

Cheryl Nicolosi
I am writing a thesis for a master's project for California State University of San Bernardin o. The results from these interviews and observations will be used in this thesis. All participants and subjects in this sample will be anonymous and will be addressed as Subject A, Subject B, etc.

Thank you for participating in this research.

Cheryl Nicolosi

Participant's Name

Date 02/18/04
I am writing a thesis for a master's project for California State University of San Bernardino. The results from these interviews and observations will be used in this thesis. All participants and subjects in this sample will be anonymous and will be addressed as Subject A, Subject B, etc.

Thank you for participating in this research.

Cheryl Nicolosi

Participant's Name

Date 4-21-04
I am writing a thesis for a master’s project for California State University of San Bernardino. The results from these interviews and observations will be used in this thesis. All participants and subjects in this sample will be anonymous and will be addressed as Subject A, Subject B, etc.

Thank you for participating in this research.

Cheryl Nicolosi

Participant’s Name

March 28th, 2014
Date
I am writing a thesis for a master's project for California State University of San Bernardino. The results from these interviews and observations will be used in this thesis. All participants and subjects in this sample will be anonymous and will be addressed as Subject A, Subject B, etc.

Thank you for participating in this research.

Cheryl Nicolosi

Participant's Name  3-22-04
Date
I am writing a thesis for a master's project for California State University of San Bernardino. The results from these interviews and observations will be used in this thesis. All participants and subjects in this sample will be anonymous and will be addressed as Subject A, Subject B, etc.

Thank you for participating in this research.

Cheryl Nicolosi

[Signature]

Participant's Name

2-25-04

Date

Taylor Music Therapy
P.O. Box 2831
Capistrano Beach, CA 92624
I am writing a thesis for a master's project for California State University of San Bernardino. The results from these interviews and observations will be used in this thesis. All participants and subjects in this sample will be anonymous and will be addressed as Subject A, Subject B, etc.

Thank you for participating in this research.

Cheryl Nicolosi

Participant's Name

Date 3/3/04
I am writing a thesis for a master's project for California State University of San Bernardino. The results from these interviews and observations will be used in this thesis. All participants and subjects in this sample will be anonymous and will be addressed as Subject A, Subject B, etc.

Thank you for participating in this research.

Cheryl Nicolosi

[Signature]

Participant's Name

Date: 3/3/07
I am writing a thesis for a master's project for California State University of San Bernardino. The results from these interviews and observations will be used in this thesis. All participants and subjects in this sample will be anonymous and will be addressed as Subject A, Subject B, etc.

Thank you for participating in this research.

Cheryl Nicolosi

Participant's Name

Date

4/18/64
I am writing a thesis for a master's project for California State University of San Bernardino. The results from these interviews and observations will be used in this thesis. All participants and subjects in this sample will be anonymous and will be addressed as Subject A, Subject B, etc.

Thank you for participating in this research.

Cheryl Nicplosi

[Signature]

Participant's Name

3/05/01

Date
APPENDIX F

CONTACT INFORMATION
## Professional Music Therapists in the Area (Current AMTA Members)

<table>
<thead>
<tr>
<th>Name</th>
<th>City, State</th>
<th>Work Phone</th>
<th>Fax</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Janet Ryan, MT-BC</td>
<td>Annapolis, CA</td>
<td>(301) 800-1234</td>
<td></td>
<td><a href="mailto:janetryan@fierce.com">janetryan@fierce.com</a></td>
</tr>
<tr>
<td>Dennis Chico-Seaman, MT-BC</td>
<td>Annapolis, CA</td>
<td>(301) 800-1234</td>
<td></td>
<td><a href="mailto:dennischico@seaman.com">dennischico@seaman.com</a></td>
</tr>
<tr>
<td>Laura K. Waters, MT-BC</td>
<td>Brook, CA</td>
<td>(301) 793-6500</td>
<td></td>
<td><a href="mailto:laurawaters@brook.com">laurawaters@brook.com</a></td>
</tr>
<tr>
<td>Laura E. Tater, MT-BC</td>
<td>Costa Mesa, CA</td>
<td>(714) 540-4248</td>
<td></td>
<td>lータ@tater.com</td>
</tr>
<tr>
<td>Yael Klein, MT-BC</td>
<td>Costa Mesa, CA</td>
<td>(714) 907-5634</td>
<td></td>
<td><a href="mailto:yael_klein@costa.com">yael_klein@costa.com</a></td>
</tr>
<tr>
<td>Rebecca Thompson, MS, MT-BC</td>
<td>Costa Mesa, CA</td>
<td>(714) 597-5235</td>
<td></td>
<td><a href="mailto:rebeccathompson@msn.com">rebeccathompson@msn.com</a></td>
</tr>
<tr>
<td>Patrick K. Doyle, MT-BC</td>
<td>Desert Hot Springs, CA</td>
<td>(760) 337-5332</td>
<td></td>
<td><a href="mailto:pkdoyle@deserthotsprings.com">pkdoyle@deserthotsprings.com</a></td>
</tr>
<tr>
<td>Emily D. Ortiz, RMT</td>
<td>Fountain Valley, CA</td>
<td>(714) 821-3620</td>
<td></td>
<td><a href="mailto:emily_ortiz@fountainvalley.com">emily_ortiz@fountainvalley.com</a></td>
</tr>
<tr>
<td>Sabine R. Montalvo, MT-BC</td>
<td>Fountain Valley, CA</td>
<td>(714) 697-5015</td>
<td>(714) 549-6579</td>
<td><a href="mailto:smontalvo@fountainvalley.com">smontalvo@fountainvalley.com</a></td>
</tr>
<tr>
<td>Valerie J. Hendersen, MT-BC</td>
<td>Fountain Valley, CA</td>
<td>(714) 597-5436</td>
<td></td>
<td><a href="mailto:vjefferson@fountainvalley.com">vjefferson@fountainvalley.com</a></td>
</tr>
<tr>
<td>Mina D. Wong, MFA, RMT</td>
<td>Palos Verdes, CA</td>
<td>(310) 361-6920</td>
<td></td>
<td><a href="mailto:minawong@palosverdes.com">minawong@palosverdes.com</a></td>
</tr>
<tr>
<td>Jennifer M. Wisely, MT-BC</td>
<td>Pismo Beach, CA</td>
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REFERENCES


