A COMPARATIVE CASE STUDY OF MUSIC INTERACTIONS BETWEEN
MOTHERS AND INFANTS

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Introduction

From the first moment an infant hears sound, music learning begins. Babies show their musical understanding in a variety of ways. Brand (1985) explains that at birth, response to sound is one of the most highly developed abilities of a newborn. Infants have the ability to recognize volume, distinguish between voices, and display preferences for certain sounds over others.

Infant responsiveness to music can be present from birth, but enculturation begins when “mothers serve as the principal mentors” in attaching meaning to music (Trehub, 2005, p. 26). Speech of mothers to infants has been shown to contain musical elements such as rhythm and melodic contour. Contained within the speech and song of a mother is an emotional content and message that provides the infant with positive feelings of security and comfort.

Conversely, a child can exhibit early understanding of music before they use language as a communication tool (Gordon, 2003). Studies in brain research indicate that early life experiences form important foundations for future learning and development (Brink Fox, 2000). Active participation in music activities stimulates brain growth and development. “Some evidence suggests that early music experience may arise from a fundamental bond between group members-the bond between mother and child” (Brink Fox, 2000, p. 25).

More recently, Gordon (2003) stressed the importance of early childhood music education. “A child never has higher potential to learn than at the moment of birth” (p.
Early music listening experiences for infants under the age of 18 months form the basis for future music learning. Children should be listening to instrumental music with good tone quality and hearing their parents or caregivers sing to them without words. Gordon stated that “singing, moving, and listening to music at an early age would seem to be beneficial to success in language development as well as to music development” (p. 235). Determining and developing a child’s musical abilities becomes significant as parents and teachers make decisions about educational experiences and objectives (Flohr, 2005). Music education and early childhood experiences are therefore intertwined in a critical way.

**Review of Literature**

*Language Development in Early Childhood*

Music understanding and language development is a complex activity. Cassasola and Cohen (2000) studied word-action associations in 14 and 18 month old infants. Findings indicated that instrumental music assisted the infants in verb discrimination. The important process by which children acquire language skills suggested a link to future learning.

Adults often use different speech inflection and cues with infants than they do in speech between adults. This infant directed speech appeared in many cultures and suggested that this speech may serve an important function in language development (Fernald, 1989). The use of melodic contour and shape in infant directed speech contained the necessary cues for an infant to gain understanding and meaning in verbal communication. Fernald (1989) discussed that the “melody carries the message in speech addressed to infants to a much greater extent than in speech addressed to adults” (p. 505).
Using infants from 9 to 11 months of age, melodies were played by computer to measure the amount of head movement an infant gave in response to the change in melodies (Trehub, Thorpe, and Morrongiello, 1987). Infants in this study seemed to be configuring and organizing sounds based on both pitch and contour. The coding of melodic contour served as a basis for how an infant began to interpret speech. From the information an infant gathered in listening, the basis for further communication was established.

Infants and Music Understanding

Rock, Trainor, and Addison (1999) explained that caregivers differentiated their singing style from play songs to lullabies and that observers could distinguish the difference between the two. Caregivers sang songs to infants while the observers looked at the infants without hearing any sound. The observers were able to distinguish which performance style the infant was hearing based on the infant response. Infants appeared to make a distinction between the two styles of singing; therefore, it was a mode of communication. When an infant heard a lullaby, the attention focused inward to self. When a play song was heard, attention was focused on the caregiver. The study pointed to evidence that music served a “vital function in development” and that it was an important part of interactions in the first year of life between babies and those who care for them (p. 11).

Infants appear to be sensitive to musical performance. Careful examination by Trehub, Unyk, Kamensky, Trainor, Henderson, and Saraza (1997) suggested caregivers made “perceptible adjustments when singing to their infants compared with their simulations of such singing” (p. 503). The presence or absence of the infant affected the
singing patterns of the caregivers. Adult observers and the infants confirmed this perceived difference. Infants seemed to prefer infant directed songs over non-infant directed versions of the same music. From an early age, infants discriminate between performance styles as they listen to music. The development of music understanding begins with this fundamental component as children listen and process sounds and music.

Musicianship and Parenting

Custodero (2006) investigated the singing practices of 10 families with young children. The use of singing in the social construct of the family established the basis for exploration. The researchers conducted an initial interview at the family home. The parents were given either notebooks or a tape recorder to report their thoughts and feelings about the music activities taking place. A follow-up interview was conducted to solidify information contained in the journals.

After gathering information from 10 families, the researcher reported a close examination on 3 families in particular. Data from these participants was considered information-rich and validated the overall findings of the study. Three themes emerged including: a) family routines focused on singing activities, b) traditions involved parents recreating music they remembered as children, and c) children devoted large amounts of time to singing in their play.

Ilari (2005) revealed musical experiences of the mothers had an influence on the preferences and listening habits of infants. Using a preset interview questionnaire, a 20-30 minute interview was conducted with the mothers. The mothers had children whose ages ranged from 7 to 9 months. The findings revealed that women who had careers sang more often than did mothers who were housewives or students. The mothers expressed
preconceived, social notions of what appropriate music for the children should be. Many stated their listening habits had changed since the children arrived.

Custodero and Johnson-Green (2003) also studied early interactions between parents and infants. Parents who had music experiences were more likely to engage in musical activities with their children. Memories of involvement and participation in music related to how parents interacted musically with their infant. Those parents who had experience singing were more likely to sing to their infants. Those parents who had experience playing instruments or taking music lessons were more likely to play recorded music for the infants. It also appeared that experience in a certain musical style led the parents to select similar styles of singing or recorded music for their infants.

Purpose

Using the Custodero 2006 study as a model, daily music interactions between mothers and infants younger than 13 months old were examined. Previous research indicates that the beginnings of learning, communication, and music knowledge occur in infants very early in life (Trehub et. al, 1987; Trehub et. al, 1997, Rock et. al, 1999; Cassasola and Cohen, 2000; Gordon, 2003; Ilari, 2005; Custodero, 2006). Much of what we can learn about children and their development comes from their first teachers, the parents (Custodero, 2003; Custodero, 2006; Ilari, 2005). Few research studies focus on the unique, direct music interactions between mother and child and the perceived value of music as expressed from the perspective of the mother. Therefore, this study was developed to examine music interactions between mothers and infants in order to assist educators with further understanding of early music development in children.
The purpose of this study was to examine music interactions between mothers and young infants. Research questions included: 1) What type of musical interactions took place in the mother/infant relationship? and 2) What importance did mothers place on musical interactions within the family structure?

Methods and Procedures

The study took place over an 8 week study period with each family. Five mothers of infants 4 months, 5 months, 11 months (2 children), and 12 months were interviewed. Music activity in the home setting was observed and field notes taken. Music books and music recordings used in the home environment were reviewed.

Design

A qualitative comparative case study design was used in this examination. Merriam (1998) defines a comparative case study as one that “involves collecting and analyzing data from several cases and can be distinguished from the single case study that may have subunits or subcases embedded within” (p. 40). This study was phenomenological in “essence or structure of an experience” (Merriam, 1998, p. 15). Music use with infants is a phenomenon that occurs across many cultures. The phenomenon of the use of music in the mother/infant relationship was investigated.

Sampling

The intended target population involved mothers with infants under 13 months of age. The study focused on what the mothers were musically doing and thinking in response to their infants since the infants had limited ability to communicate through words. This study represented a purposeful case sampling according to Merriam (1998). The sample was chosen “because it reflects the average person, situation, or instance of
the phenomenon of interest” (Merriam, 1998, p. 62). Selection included “a sample from which the most can be learned” (Merriam, 1998, p. 61). The mothers and infants who participated were solicited from a Midwestern community by personal invitation. Participants were considered an information-rich source based on their educational background and community involvement with young children. They were mothers whose children would receive future music training in three local school districts in the surrounding Midwest community.

Participants

*Kate and Matthew.* Kate was a middle school social studies teacher and track coach. Kate was 27 years old and Matthew was 11 months old. Matthew had one older brother, Carter, age 2. Kate had formal music training as a student in elementary school general music.

*Lisa and Jacob.* Lisa was a middle school English teacher. Lisa was 31 years old and Jacob was 4 months old. Jacob was her only child. Lisa took piano, oboe, and percussion lessons in her youth and performed in band throughout high school and college. She also participated in church choirs as a child and adult.

*Rachel and Daniel.* Rachel taught English at the local community college. Rachel was 30 years old and Daniel was 11 months old. Daniel was the only child in the family. Rachel took 11 years of piano lessons as a child.

*Stephanie and Alex* Stephanie had a master’s degree in architecture. She was 30 years old and Alex was 12 months old. Alex was one of two boys in the family. His older brother Owen was 3 years old. Stephanie enjoyed music classes in elementary school and middle school. She played oboe in high school band and was the drum major.
Trisha and Jill. Trisha had master’s degree in education. She was employed as a guidance counselor and basketball coach in a public school. She was 36 years old, and Jill was 5 months old. Jill was one of three children in her family. She had two older brothers: Jeffery, age 10 and Jonathan, age 3. Trisha had formal music training as a student in elementary and junior high general music.

Data

Interviews. Semi-structured interviews took place with the mothers in their homes. The 30 minute interviews were conducted using a semi-structured protocol developed from reviewing methods and data collected in the Custodero 2006 study (See Appendix A). The interviews were “guided by a list of questions or issues to be explored” (Merriam, 1998, p. 74) and allowed flexibility in gaining information from the participants. Interviews were transcribed for analysis of common themes.

Observations. The homes of the participants were visited following the interviews once for two hours during the study. During the home visit, the mother engaged the infant in musical activity that commonly occurred at the time of day the observation took place. Careful consideration was given to disrupt the regular routine of the family as little as possible during the observations. No formal structure was established. The mothers and infants simply went about their normal routines. Four families were visited in the morning and one family was visited in the afternoon to honor the observation time preference of the families. Notable characteristics of the interaction between the mother and infant were gathered as field notes. Field notes were written during the observation time as the child played alone or with the mother in musical activity. Field notes were
then transcribed for analysis. The purpose of the observations was to confirm information gathered through the interviews and the e-journals.

**Researcher/Participant E-journal.** A running log of e-mails between researcher and participants occurred weekly over the course of 8 weeks. As a follow-up to the interviews and observations, the mothers were prompted to provide information about occurrences of music in the home (See Appendix B). The mothers were also asked to reflect on the music practices and note how it affected their infants. They reported on any other significant element that came to mind. The goal of the e-journal was for the mothers to describe what was taking place in the music interactions, if there were any, and also to follow-up on discoveries from the interviews and observations in the home.

**Data Analysis**

Merriam (1998) describes the steps required to analyze data in a phenomenological study. In the design of this study the following steps of analysis occurred: a) described the generalities that occurred in the mother/infant relationship with music experiences (i.e. singing, recorded music); b) explored the types of interactions that occurred and their relationship to the family structure (i.e. playing, bonding); c) examined why the mothers were using music with their infants and their beliefs about music (i.e. relaxation, culture, teaching); and d) interpreted what significance and meaning the use of music had in the mother/infant relationship (i.e. family traditions, expression).

Throughout the gathering of data, memos were made that assisted in creating journal prompts for the mothers. From the 87 pages of single spaced transcriptions of observations, interviews, and journals, the information was coded for phrases and
recurring ideas (i.e. calming, soothing, rhythmic, dancing, listening to music). The data was grouped into the coded areas. At times, some of the data fit into two or more coded areas. After the coding process was complete, themes began to emerge from the data (i.e. communication: “Stephanie uses a song-like tone as she encourages Alex to take his first toddling steps” (Byrn transcription June 19, 2008); family history traditions: “his father puts music to home videos so every time we hear the song we recollect certain trips” (Kate interview, February 18, 2009); child development and learning: “use music to teach them” (Trisha interview, February 17, 2009). These themes became the basis for the findings of the study. The themes are represented in this study by the headings that appear in the next section of this paper.

Trustworthiness

Triangulation in the study was attained by the following measures of data collection: a) transcriptions of interviews with the mothers; b) transcriptions of field notes from observations of the mother and child interactions; and c) e-journals that were researcher/participant journals plotting the music activities in the families over the course of the eight week period. Member checks were afforded by allowing each participant to read data from the study and acknowledge that the information accurately presented and expressed their position.

Findings

Response to Research Question 1: What type of music interactions took place in the mother/infant relationship?

Musical interactions were an integral part of the mother/infant relationship. Each mother expressed ways in which music strengthened the relationship she had with her
infant. Two categories of music interactions in the mother/child relationship emerged from this study. The characteristic features included music interactions in communication and music interactions in learning and discovery.

**Communication**

Music interactions formed a powerful communication tool for the mothers and infants in this study. Speech patterns, song, and dance provided useful ways for these mothers to communicate with their infants who did not yet have more than a one-syllable word vocabulary. Mothers communicated simple requests and described the details of their day by using song, rhythmic speech, and movement. They used music to enhance the power of the spoken word. Through music, the sound became more meaningful to both the mother and the infant.

**Speech.** When the mothers spoke to their infants, their voices often had higher pitch and a song-like quality. Stephanie mentioned that her husband pointed out that on vacation she was singing everything to Alex as if she were in a musical. She said she had not even realized she was singing to him “Do you want some syrup,” and other thoughts and questions (Stephanie, e-journal, July 2, 2008).

When Lisa changed Jacob, she talked to him as she worked through the entire time in high pitched sounds that clearly resembled a musical melody (M. Byrn, field notes, July 2, 2008). She also used a music bear that hangs on the wall that played as she interacted with Jacob during diapering. Lisa believed “It is…soothing to him. He tends to quiet down and listen” (Lisa, e-mail journal, June 26, 2008). She also said she often finds herself “singing to him…telling what is happening” (Lisa, e-journal, July 9, 2008).
The infants were primarily communicating at this stage through body language and babbling sounds. Stephanie’s 12-month old son, Alex, made babbling sounds that were “much more song-like” (Stephanie, e-journal, June 26, 2008). Stephanie recognized that this form of communication between her and Alex seemed to be music in its most basic and natural form.

Singing. In this study, song often served as important communication between the mothers and the infants. All five mothers reported singing throughout the day, often in songs that were made up for specific purposes. Rachel discussed her singing habits in the interview. “I sing…and make up songs…to keep him focused” (Rachel, interview, June 30, 2008).

Trisha described that she “makes up” many songs. “It might just be that the sun is shining brightly and then I make up a silly song about that” (Trisha, interview, February 18, 2009). Kate recalled improvising tunes during bath time about “splashing…their toys…both boys seem to enjoy that” (Kate, interview, February 25, 2009).

Lisa often used a song that she composed for Jacob titled “Jacob is a Wiggle Worm.” If he was fussy she would sing the song really loud, and it would usually calm him down. He has heard the song often enough that he already figured out it is about him. Lisa held him sometimes when singing it so they could wiggle together (Lisa, interview, June 28, 2008).

Stephanie used a family lullaby at night time to comfort Alex as he was going to sleep. “My grandmother used it…it’s pretty cool to hear my aunts sing it to their grandbabies.” (Stephanie, e-journal, July 2, 2008). Although Alex did not yet understand the meaning behind the lullaby, Stephanie was able to pass along a sense of comfort to
him. Someday, he will recognize that lullaby as something his mother used to sing to him and perhaps sing it someday to his own children (Stephanie, e-journal, July 2, 2008).

**Movement.** Movement also served an important role in the communication between the mothers and the infants. The five mothers reported that the infants seemed to naturally have a physical response when hearing music. This physical movement and dance indicated to the mothers that their infants were enjoying the sounds around them. In turn, the mothers noted these activities and often sought to repeat the experiences.

Lisa often moved Jacob’s body or her own when hearing music. This allowed him to experience the beat and rhythm of music along with a physical connection and interaction with his mother. “I’ve actually moved his arms…I move my head in silly little ways” (Lisa, interview, June 28, 2008). Lisa also took great pleasure in taking Jacob to music rehearsals where he had the opportunity to interact with music. “Jacob was kicking a foot almost to the beat.” (Lisa, e-journal, July 1, 2008).

Trisha loved to dance with her children. “We dance a lot at my house. Crazy dance” (Trisha, interview, February 19, 2009). She stated that Jill moved her arms and legs in excitement when there was music around. “She loves to bounce on my knee to the music playing at home or the songs that I make up” (Trisha, e-journal, April 3, 2009). Jill watched intently and smiled when Trisha sang to her as her brothers danced around the house (M. Byrn, field notes, March 27, 2009).

Daniel danced a great deal during the observation at the home. When music played on his toy house, he sat on his knees and swayed from side to side in a rocking motion to the tune of ‘Itsy Bitsy Spider’ and he put the balls through the spout. Then, he
clapped his hands and smiled at his mother when the song finished playing. Rachel watched him and smiled in return (M. Byrn, field notes, June 30, 2008).

Stephanie spoke of Alex and his strong physical connection with music. During the interview, she discussed her discoveries about the rhythmic books she read to him and the movements that Alex performed along with them each time. “He was moving to the music and I…thought that he was just being squirmy until I noticed…in a very rhythmic way…it’s very distinctly dancing” (Stephanie, interview, July 1, 2008). Stephanie also talked about using dance in an improvisational fashion each day in the kitchen as she and Alex listened to music. “We just sort of spin around and…pretend like we’re ballroom dancing.” (Stephanie, interview, July 1, 2008).

Learning and Discovery

Music interactions between the mothers and infants often centered on experiences involving learning and discovery. The mothers used music often to teach because it naturally reinforced the purposes they were trying to achieve. The lessons in the home occurred in the context of play, listening to music, hearing live instrumental music, and daily life.

Play. As the infants played at home, many musical toys were available for manipulation. The toys allowed the infants to experience a variety of music sounds. The toys had educational purposes that encouraged music understanding along with other types of general learning activities such as identifying shapes, colors, numbers, and words.

Daniel used plastic cups and would bang them together as if they were cymbals as he moved around the room. He shook a homemade rice shaker. He did so in a very
rhythmic and steady fashion. The sounds coming from the toys were not random, but rather they were distinctly rhythmic and music -like (M. Byrn, field notes, June 30, 2008).

Alex enjoyed using an alphabet drum that played and lit up whenever it was tapped. “Alex likes any toys that make music or has songs associated with it. He loves…using eating utensils as drumsticks” (Stephanie, e-journal, June 26, 2008). He also enjoyed using a stand up piano that had different instruments on it. “He does a lot of head bobbing and grooving” (Stephanie, interview, July 1, 2008). Matthew had a similar drum and stand up piano at home that he enjoyed playing. “He just likes to hit it. He enjoys it” (Kate, interview, February 18, 2009).

The Role of Recorded Music. Listening to recorded music also served as an important method of discovery and learning with the infants. The mothers used recorded sounds frequently in the home. The recorded music assisted the mothers in keeping the atmosphere in the home pleasant for the infants. As Stephanie expressed, “I’ll tell the boys we need an attitude adjustment. So we’ll turn on a really upbeat song…and get all our wiggles out…we use it as a tool to change our days” (Stephanie, interview, July 1, 2008).

Sometimes, recorded music heard outside the home environment provided learning experiences for the infants. Rachel wrote, “Whenever he [Daniel] hears any kind of music…he usually smiles and almost always starts dancing (i.e. swaying)” (Rachel, e-journal, July 26, 2008). Rachel told the story of being with Daniel at a baseball game where music was played. “Every time a different batter would come up…[the music] would… play…he would dance every time.” (Rachel, interview, June 30, 2008).
Stephanie noted the frequency of recorded music in their home. She said, “During…meal times…play time we’ll have it [music] on in the background” (Stephanie, interview, July 1, 2008). The music listening in the family included variety depending on the situation. “We usually pick songs that have nice vocals...Not…harsh sounding music…or inappropriate lyrics.” (Stephanie, interview, July 1, 2008). She also enjoyed listening to CD’s of symphonic band music by Stephen Melillio with Alex because of the different sounds of the band instruments and the influence that Melillio had on her high school band performance experience (Stephanie, e-journal, July 9, 2008).

Both Kate and Trisha had 20 minute daily commutes to the house of baby sitters. Recorded CD’s served as a way for the infants to pass time in the car and provided entertainment and calming effects on the long trips to and from home. Trisha noted Jill demonstrated increased interaction with her siblings on car rides as they were “swaying and laughing and singing…She belly laughs because she thought that was the funniest thing ” (Trisha, interview, February 18, 2009). Both Kate and Trisha used a variety of children’s music on these car trips including nursery rhymes, Bible songs, and Disney songs. In many instances, the listening choices were dictated by the older siblings. Kate mentioned that Matthew was old enough that he could “ask for those specific songs…when he asks for the cheeseburger song, you play the cheeseburger song” (Kate, interview, February 25, 2009). Trisha said that although much of the music in the car was directed toward the older children, “Jill’s gonna hear that as well…so…she will learn” (Trisha, interview, February 18, 2009).

Lisa enjoyed using the classical music setting on a toy worm with Jacob. It sang about colors and numbers, played in a classical music mode, and demonstrated various
genres. During the field visit, Lisa held Jacob as the tunes on the worm played. She bounced him up and down gently to the beat of the music. At times, she even sang along with the worm tunes. Jacob became very still and quiet listening to the sounds and fell asleep within a matter of minutes (M. Byrn, field notes, July 2, 2008).

**Live Music.** Live instrumental music functioned in a similar way to singing and recorded music in the mother/infant interactions. Three mothers reported interactions involving live instruments with their infants. Stephanie played the oboe for Alex sometimes. “He loves to sit …and reach in the bell. He’s…fascinated about how it makes music” (Stephanie, interview, July 1, 2008). Stephanie had a piano in the home that she was learning to play. She hoped that someday Alex would want to play the piano and “enjoy a musical instrument that is more versatile” (Stephanie, interview, July 1, 2008). Rachel and Lisa played pianos at home and allowed the children to play them.

**Routines in daily life.** Daily life and routine with infants involved many opportunities for teachable moments and interactions between the mothers and their children. Stephanie mentioned that many of the books read in the home contain musical qualities like “sing-songy rhymes and chants that kids and toddlers do” (Stephanie, interview, July 1, 2008). The Boynton books were a favorite in the household. The rhythm and rhyme of the “Pajama Time” book contained infectious fun and served as a favorite bedtime activity. The routine was really not complete until Alex had read, sung, and moved to the lyrics book.

In addition, songs that were theme based served a learning function. Stephanie appreciated the opportunity to use music to assist with teaching Alex and his older brother. “We’ve learned ‘It’s A Grand Old Flag’ song…We’ve been teaching his older
brother about flags” (Stephanie, interview, July 1, 2008). Trisha has created songs for her children that include their names to teach the spelling and also individual personality traits. “I’m trying to teach…and I can say it over and over, but it’s just you’re able to teach better with music…They’re gonna grasp it a lot better” (Trisha, interview, February 19, 2009).

Sometimes, learning experiences that involved music turned up in unexpected ways and places. Stephanie told the story of taking her sons Owen and Alex to swim class and picking up a new favorite song to sing with them. “I wasn’t really going to swim class thinking ‘Oh, I’m gonna learn musical song’…when we took the boys [to] the lake, Owen kept saying ‘Oh, I want the Duke of York song’” (Stephanie, interview, July 1, 2008).

Response to Research Question 2: What importance did mothers place on musical interactions within the family structure?

The mothers described the intentional use of music in their homes. Music served a useful purpose in assisting the mothers develop an experience-rich environment for child development. Stronger relationships and bonding with their infant occurred because of nurturing musical interactions. A final theme involved the use of music as a way to pass along family history and traditions to their children.

Fostering Child Development

The mothers acknowledged that they had heard and read about the benefits of music in the development of children. All five of the mothers admitted that using music was something they felt like they should be doing with their children. Rachel expressed it this way, “I just know it’s [music] good for them…it helps their brain development”
Music Interactions Between Mothers and Infants

(Rachel, interview, June 30, 2008). Lisa wrote “I know that learning and music are integrated” (Lisa, e-journal, July 9, 2008). Cultural traditions and knowledge were passed along through music. Trisha stated she thought that “people who have music exposed in their worlds...become more well rounded...I think that can be a connection to intelligence” (Trisha, interview, February 18, 2009). Lisa expressed her feelings about the importance of music in her family this way: “With the research showing the connection between music and mathematics...I feel it is important to start exposing him to music early” (Lisa, e-journal, July 9, 2008). Kate noted that “it’s [music] making their brain work and function differently” (Kate, interview, February 25, 2009).

Rachel emphasized the importance of Daniel’s discovery of music on his own. She has already noticed that this seemed to be the most naturally occurring way that music is used in their home (Rachel, e-journal, July 3, 2008). Stephanie described encouraging brain development, “I think just from a memory recall standpoint, the fact that kids can learn words and tunes and rhythm is important” (Stephanie, interview, July 1, 2008).

Relationship Building

The mothers recognized a stronger bond and connection with their infants when music was used. The importance of a strong connection with their infant was a high priority to all of the mothers. They used music to serve a purpose because it appeared to be an effective tool in building solid relationships. Trisha said, “Music is a positive thing. I believe it’s a way of expression, too...I think you can decrease stress with music in my opinion” (Trisha, interview, February 19, 2009). Jill frequently interacts with her mother by smiling and laughing at music in the household (Trisha, e-journal, April 3, 2009).
Kate wished there was more time in the day to interact with Matthew through music. She further expressed that she appreciated activities that provided direct personal interaction. She enjoyed the quiet moments they had together to “rock and sing and hum” (Kate, e-journal, April 8, 2009).

Rachel expressed that she felt like she and Daniel “speak to each other even though he can’t really talk…When we laugh or smile about something together, which often happens when we listen or dance to music, there’s definitely a stronger bond being formed” (Rachel, e-mail journal, July 3, 2008).

**Family History and Traditions**

Musical interactions were important to the mothers in this study because of the way they were able to pass along family history and traditions. In Lisa’s family, music was just a part of everyday life as she grew up. She placed a high importance on continuing this tradition in her own home. “Music is such a part of my everyday life. I …want to pass that appreciation along” (Lisa, e-journal, July 9, 2008).

In Rachel’s family growing up, her mother was a strong influence. Her mother continued her musical influence on Daniel as a grandmother. Rachel recalled that her mom always “used to sing to us on car trips, when she rocked us, or just generally around the house.” (Rachel, e-journal, July 9, 2008). Rachel recognized that she did not use music as much as her mother did, sometimes to the point of feeling guilty about it.

Kate sang songs to the children that she remembered from her childhood. “I know them [the songs]…and would have done them when I was little” (Kate, interview, February 25, 2009). Trisha described that she had “a really strong passion for music
that…has never been…developed, so I…want my kids to be exposed to it” (Trisha, interview, February 19, 2009).

Trisha said, “I believe that music is a part of our daily lives” (Trisha, e-journal, February 23, 2009). She reports singing in the car, the dinner table, and even at ball games. Jill receives attention and interaction from her family through these singing activities, which she appears to enjoy immensely. “She would smile and then she would laugh out loud” (Trisha, e-journal, April 5, 2009).

As Stephanie reflected on why she used music with her children, she realized that sharing memories of her mother and her own childhood with her sons helped the family to connect and become rooted. In addition, her relationship with her husband began as a result of a high school band romance, which made music special too. “I’m recreating my own childhood environment…I do want the boys to understand and love music…I will want them to be in band and meet the loves of their lives (ha ha)” (Stephanie, e-journal, July 9, 2008).

Discussion

Fernald (1989) found that the speech inflection of mothers could be distinguished by listeners. Rock et al. (1999) found that speech and communication were important aspects of infant development. The mothers in this study used melodic speech when calling the name of the infant, expressing pleasure or joy, soothing them as they went to sleep, or in playing games. In this study, communication through music was an important theme in the relationships of mothers and their infants. By using music to enhance both speech patterns and other communication forms, the infants gained an opportunity to develop and thrive in their environment.
Ilari (2005) and Custodero, Johnson-Green (2003) examined the influences of parental music experiences on the use of music in the home. These mothers played recorded music frequently for their infants. Ilari (2005) reported a high occurrence of music listening in the car. Two mothers in this study felt that the car was an optimal place for musical activity. Parental music experiences resulted in increased use of music in the home. Three of the mothers in this study had taken private lessons on an instrument for several years.

Custodero (2006) found three themes of routines, traditions, and play as being important in the use of singing in the home. The spontaneous singing, making of daily routines, and establishing and continuing family traditions were all aspects of singing in the home. Similar themes were discovered in this study. The mothers in this study used singing for fun throughout the day and interspersed it with daily activities that might have otherwise been monotonous or dull. Each mother in the study also expressed that the use of music in the home was a way that she could assist the infant in gaining understanding of their relationship, the family, and the larger world. Custodero (2006) discussed the use of singing in the parent-child relationship that was emotional and intimate. The mothers in this study cherished the moments of closeness that they experienced with their infants through music.

Suggestions for Future Research

Limitations of this study included the following: a) little variance in education of the mothers; b) little variance in the socioeconomic status of the mothers; and c) all families in the study were traditional two parent families. A sampling with variation in these areas would be helpful for further research. The future study of mother/infant
musical interactions in a broader sampling could yield a greater understanding across varied social and cultural boundaries.

Continued research in the area of mother/infant musical interactions can be beneficial to further understanding of early music development and childhood music education. Further research might also include examination of the mother/infant relationship throughout the development years. The dynamic mother/infant relationship is one that changes over time as the child grows. Interesting findings might surface in how involved the children become in musical activities throughout their lives based upon this established relationship. Music educators might also benefit from the study of the improvisational style that mothers use with their infants through speech and song. These early exposures to basic improvisation could be used to help children develop fluent improvisational skills with guided assistance from a teacher. Further study might also investigate which musical activities appear to have the most significant impact on development.

The implications of this study on music education are two-fold. First, music teachers must acknowledge the early foundations of the infant music experience so they can build bridges of understanding in childhood. Assisting children in making connections with previous learning increases their comprehension. Finally, mothers provide an irreplaceable ability to connect to their children through music. In essence, a parent is the first teacher. Early childhood music educators can assist in educating not only the children, but their parents. With education and guidance from the early childhood specialist, parents can reinforce musical concepts at home.
Conclusion

The findings in this study confirmed that in these five families, music interactions in the mother/infant relationship were plentiful and important to family life. The mothers valued the opportunity to share music experiences with their infants. Music served as a powerful tool in establishing and confirming the familial relationships. Musical interactions in communication and learning were significant elements in the lives of these families. The mothers acknowledged the significance of music in the development of their infants. Music seemed to find itself fitting into the natural ebb and flow of the relationship between the mothers and the infants. In essence, music served as a significant connecting element in the relationships. Music was so prevalent and constant in the homes and families that it is difficult to imagine these relationships without the musical interactions. An examination of the mother/infant relationship provided powerful insight into early musical interactions. Much can be learned through continued investigation into the daily musical interactions in the mother/infant relationship.
References


Appendix A

Interview Protocol

Music Listening

1. Tell me about some recorded music you have played for your infant. (type of music, reasons for choosing that music).
2. Can you describe how your child responds to the music being played for type a, type b, type c, etc.?
3. What do you do when the music is playing for the baby?

Music Singing

1. Tell me about some singing you have done with your infant (type of music, reasons for choosing that music).
2. How does your infant respond when you sing type a, type b, type c, etc.?
3. What else do you do when you are singing to the baby?

Music Playing

1. Tell me about some instrument playing you have done with your infant (type of music, reasons for choosing that music)
2. How does your infant respond when you play type a, type b, type c, etc?

Music Routines

1. Can you tell me about any daily routines you have with your infant that involve music? Time of day, what type of activities.
2. Have you been able to identify any preference for certain types of music activities during certain times of day, routine, or mood?
3. Can you tell me about any music books or music activities that you enjoy with your baby?

*Music Experience*

1. Have you had any formal music training? Describe.
2. Have you ever participated in any formal class with infants/parents that involved music? If yes, can you tell me a little about that?

*General*

1. Overall, do you have any particular reasons other than those already mentioned for using music in your home with your child?
2. Is there anything you are hoping to accomplish by using music activities with your infant?
Appendix B

Participant E-mail Journal Prompts

Each week a follow-up prompt was provided in an e-mail to the mothers. A sampling of those prompts is included here.

What music activities have you noticed this week involving you and your infant?
When you think of music and your infant, what comes to mind?
What have you noticed about what your infant “does” with music? Please explain your choice.
Do you feel like you “connect” or “bond” through music experiences with your infant? If yes, what kind of music activities bring that about? If no, what types of activities help you to connect with your infant?
How would you characterize your infant’s response to music?
Does your infant do anything that you would label as “making music”?
What type of musical activities does your infant seem to enjoy?
What impact do you feel music has on your family relationships?