NONVERBAL COMMUNICATION COMPETENCE AND MUSIC TRAINING

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Nonverbal Communication Competence and Music Training

Abstract

Individuals who are competent in nonverbal communication are those who are able to accurately and effectively express, interpret, and regulate emotion in everyday conversation. Scholars have argued that acoustic cues such as pitch, tempo, timbre, rhythm, and tone in nonverbal communication share similarities with acoustic cues in music when expressing, interpreting, and regulating emotion. Recent studies in music training have shown that individuals who received music training were more accurate in sending and detecting emotion through the use of acoustic cues than individuals who have not received music training. This investigation examined the relationship between years of formal music training with nonverbal communication competence, overall communication competence, and emotional intelligence. This study also tested the notion that individuals with music training will report higher scores in nonverbal communication competence, overall communication competence, and emotional intelligence than individuals who have not had music training. The results suggest that more years of music training was correlated with higher competency in nonverbal communication as well as overall communication. Results also suggest that individuals with music training reported higher competency in nonverbal communication competence and overall communication competence than individuals with no training in music. The findings in this paper have implications in regards to music training in schools and further understanding of the relationship between communication and music.
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CHAPTER 1. INTRODUCTION

“The musicians’ acute sensitivity and responsiveness to one another’s rhythmic, melodic, harmonic nuances, and their ability to express themselves through music… seems to have an intimate interpersonal basis” (Pavlicevi, 2000, p. 272).

When we listen to music, we listen to the interaction of musical exchange from each group of instruments. For instance, the trumpet carries a melody with support from the French horns. When the trumpet finishes its song, the trombone responds with a strong, confident tone. As the conversation with the brass instruments continue, a lighter, chattier group of flutes and clarinets engage in their own conversation.

Musical elements of tempo, rhythm, rate, timbre, pauses, and pitch are aspects of a musical piece that guide the instruments through an interaction – a conversation of sound. The conversation among instruments is activated through the individual that plays the instrument. The give and take of tempo and pitch that is heard in musical pieces is also heard in everyday human conversation.

This aspect of sound is often studied as nonverbal communication, as the sound can be used to express and share information, can be interpreted, and can help to regulate our behaviors based on the feedback we receive in our daily conversations with other people. Researchers have not only been concerned with how this is accomplished, but what distinguishes those who are more skilled or more competent in those areas. The notion of competence has been defined as the ability to engage in challenging social interactions, resulting in growth and mastery for the individual (White, 1959). In the following sections I will review various conceptualizations of nonverbal communication
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competence, the importance of nonverbal communication competence, the ways to improve nonverbal communication competence, and the role of music training in enhancing skills in nonverbal communication.

Nonverbal Communication Competence

The concept of nonverbal communication competence has been defined in a variety of ways. For example, nonverbal communication competence has been referred to as emotional intelligence (Mayer & Salovey, 1997), emotional competence (Saarni, 1990), affective social competence (Halberstadt, Denham, & Dunsmore, 2001), and social skills (Riggio, 1986).

Mayer and Salovey (1997) developed the construct of emotional intelligence where individuals have four branches of abilities. The four branches of abilities include “the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth” (p.10).

In the first branch of emotional intelligence, people develop skills to accurately identify and interpret their own and other’s emotional states. For example, children develop the ability to distinguish facial expressions in response to their parents’ expressions. The second branch of emotional intelligence involves the ability to generate or send emotions “on demand”. With this ability, a person might be able to anticipate how entering a new school, accepting a new job, or encountering a social criticism might feel. In addition, the person might be able to decide on how to feel about entering a new school, whether or not to take the new job, or decide on how to respond to the criticism.
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The third branch involves the ability to interpret the meanings of emotions. For instance, Mayer and Salovey (1997) stated that as children age, they increase in understanding of emotional meanings such as differentiating between liking and loving. The final branch involves the ability to regulate and monitor emotions in relation to oneself and others. In this stage, people are able to engage or disengage in an emotion depending on the situation. For example, children learn when it is appropriate to express their anger in the context of the home or at a party.

Saarni’s (1990) concept of emotional competence refers to “the demonstration of self-efficacy in the context of emotion-eliciting social interactions” (p.116). People who are able to respond emotionally and apply their emotions, expressions, and regulate their emotional experiences in their relationships with others are more emotionally competent. Saarni (1990) includes eight skills of emotional competence to demonstrate self-efficacy during social interactions. These eight skills represent the idea that relationships influence emotions, and emotions reciprocally influence relationships (Saarni, 1997). The eight skills of emotional competence include: (a) awareness of one’s emotional state, (b) ability to distinguish emotional meaning among others’ emotions, (c) ability to express emotion through verbal communication, (d) ability to both sympathize and empathize emotional experiences of others, (e) ability to distinguish and understand between internal and external emotional states, (f) ability to adapt and manage negative emotions and emotional states such as distress, (g) awareness that relationships are defined by the quality of emotional communication within the relationship, and (h) ability to feel the way one wants to feel; emotional self-efficacy.
Affective social competence is the “efficacious communication of one’s own affect, one’s successful interpretation and response to others’ affective communications, and the awareness, acceptance, and management of one’s own affect” (Halberstadt, Denham, & Dunsmore, 2001, p. 80). Individuals who are affectively competent are able to send messages clearly and concisely, they are able to appropriately identify and interpret the affective information, and are able to receive and manage the message. For example, children at recess need to discern how to signal other children that they want to play and be included in a group, how to distinguish between smiles or sneers, and how to manage those emotions of acceptance or rejection on the playground.

In the social skills perspective, nonverbal communication competence refers to the expressivity, sensitivity, and control of emotion. Riggio (1986) constructed a framework of six basic social skills in an attempt to measure individual differences in verbal and nonverbal communication skills. Skills in sending and receiving information are referred to as expressivity and sensitivity. Skill in regulation of emotion is referred to as control. Although Riggio includes both verbal and nonverbal skills in his conceptualization of communication competence, a derivation of Riggio’s discussion is that nonverbal communication competence are composed of social skills in emotional expressivity, emotional sensitivity, and emotional control. Riggio emphasized that a balanced amount of skill is important. For example, with nonverbal social skills, individuals who are emotionally expressive but are unable to regulate or control their emotions may appear to be overly dramatic. Individuals who have high emotional control and are able to mask their emotions may be seen as more deceptive.
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In sum, past conceptualizations of nonverbal communication competence focused on encoding, decoding, and regulating of emotion-based messages. Skill in encoding emotion-based messages involved the ability to send messages accurately. Skill in decoding emotion-based messages involved sensitivity to nonverbal messages as well as the ability to accurately interpret messages. Regulating skill involved the ability to control the experience and expression of emotions (Riggio, 2006). Thus, skill in encoding, decoding, and regulating of emotions will be used to address the concept of nonverbal communication competence.

Importance of Nonverbal Communication Competence

Imagine David and Sonia are having a conversation. During the conversation, David says something to Sonia with an expressionless face. To appropriately respond, Sonia would need to decipher whether David’s statement is supposed to be interpreted as funny or serious. Sonia would also need to respond appropriately to David’s expression. As Sonia is interpreting and figuring out how to respond to David’s expression, Sonia is also attempting to monitor her own emotions.

In a similar fashion, scholars have argued that understanding and responding to expressions of emotion are of importance for competency in nonverbal communication (Boyatzis & Satyasprasad, 1994; Carton, Kessler, & Pape, 1999). Without the ability to understand David’s expression, Sonia would not be able to effectively respond to David. If Sonia were able to accurately interpret David’s expression as funny and responded to the expression appropriately during their conversation, then Sonia could be described as exhibiting nonverbal communication competence. Clearly nonverbal communication competence involves the interplay of different skills and scholars have found that skill in
nonverbal communication is associated with several important characteristics, such as interaction quality, likeability, and workplace performance.

**Quality of interaction.** Research indicates that individuals who have more nonverbal communication competence have more success in social encounters. For example, individuals who were better at managing their emotions had more positive social interactions with members of the opposite sex (Lopes et al., 2004). Hubbard (2000) found that individuals who were more socially skilled were better at synchronizing or coordinating their behaviors during a social interaction. In her study, participants from different cultures formed dyads and engaged in two discussion sessions. Participants evaluated one another after both discussions. The results of the discussions showed that as verbal and nonverbal social skill increased, coordination between participants increased.

**Likeability.** Further investigations have demonstrated that when people are more competent in nonverbal communication, they are more positively regarded. For example, children who were better able to read and understand their teachers’ vocal cues were found to be more positively evaluated by their teachers (Halberstadt & Hall, 1980). Children who were more skilled in decoding voice tone were also more liked by their teachers (Halberstadt & Hall, 1980). In addition, Boyatzis and Satyasprasad (1994) found that children who were identified by teachers as being more sought out by their peers as playmates were more effective at decoding and encoding messages than children who were identified by teachers as less accepted by their peers.

**Workplace performance.** Nonverbal communication competence is also associated with outcomes related to workplace performance (Riggio, 2006; Hall, Roter,
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Blanch, & Frankel, 2009). For instance, Hall, Roter, Blanch, and Frankel (2009) studied third-year medical students. These researchers found that as nonverbal sensitivity to patients’ emotions increased, patient-centered attitudes such as having more compassion increased. Additionally, the nonverbal sensitivity of medical students increased, awareness of the medical students own emotions increased.

Besides the medical context, nonverbal communication competence has been studied in the education field. For instance, Hamann, Lineburgh, and Paul (1998) found that effective music teachers have the ability to accurately decode, encode, and control nonverbal messages as well as possess higher self-presentational skills in a classroom.

**Improving Nonverbal Communication Competence**

Given that competence in nonverbal communication is related to higher quality in social interactions, increased likeability, and more positive outcomes in the workplace, scholars have also investigated how nonverbal communication competence can be improved. Although research in this area is rare, there is some evidence that nonverbal communication competence can be enhanced by growing older, through exposure, and with training.

**Age.** Researchers have found that as age increases, nonverbal communication competence also increases. For example, children’s decoding ability improves as children become older (Feldman, Coats, & Spielman, 1996; Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997). Feldman, Coats, and Spielman (1996) compared children’s nonverbal decoding abilities with children between second grade and sixth grade. They found that the ability to decode facial expressions improved with age. In addition, Matsumoto and Kishimoto (1983) compared decoding ability of nonverbal
vocal expression and age with American and Japanese children. They found a gradual
increase in ability to identify emotional meaning of nonverbal vocal expressions with
children between the ages of 4 and 9, regardless of ethnicity.

**Exposure.** People are exposed to a variety of nonverbal behaviors on a daily
basis. Through touch, smell, gestures, vocal tones, and/or facial expressions, people
send, receive, and regulate information. Feldman, Coats, and Spielman (1996) stated that
daily exposure to nonverbal expressions create differences in nonverbal abilities in
regards to amount of television exposure.

Feldman, Coats, and Spielman (1996) conducted a study on television exposure
and decoding ability of facial expressions. In this study, children were divided into
lighter, moderate, and heavier television viewing groups based on the hours of television
watched per day. Participants who averaged less than 1 hour of television a day were
classified as light viewers, participants who watched an average between 1 and 2 hours
per day were classified as moderate viewers, and participants who watched television
more than 2 hours a day were classified as heavy viewers. Feldman, Coats, and Spielman
(1996) found that heavy viewers demonstrated a decoding advantage over lighter and
moderate viewers due to the amount of exposure in television viewing. Thus, they
concluded that as the amount of television viewing increased, accuracy in decoding facial
expressions increased.

**Skills training.** Scholars have found that nonverbal communication skill and
competence can be enhanced through training (Beck & Feldman, 1990; Levine, Feeley,
McCormack, Hughes, & Harms, 2005). For instance, Costanzo (1992) found that training
in verbal and nonverbal decoding skills can improve accuracy in interpreting verbal and
nonverbal cues. In this study subjects were assigned to three different groups. A no-training group had to develop a decoding strategy on how to recognize particular cues in a videotaped interaction without any instruction, a lecture group received information about productive decoding strategies, but had no opportunity to apply the knowledge, and a practice group learned to apply their knowledge through practice exercises. The results of the study indicated that the practice group, who were trained to apply knowledge, performed significantly better than both the no-training and the lecture group.

Levine, Feeley, McCornack, Hughes, and Harms (2005) found that training individuals to identify various nonverbal cues improves deception detection accuracy in comparison to individuals without training. In their study, three groups of participants received training in detecting nonverbal behaviors, training in behaviors unrelated to detecting deception, or no training. The results of the study indicated that individuals who received training in nonverbal behavior cues had more accuracy in detecting deception than bogus training and no training. In addition, bogus training had more accuracy in detecting deception than no training.

To summarize, most conceptualizations on nonverbal communication competence involve the expression, interpretation, and management of emotions. Nonverbal communication competence is important in achieving successful social interactions and in receiving positive regard and earning positive outcomes in workplace performance. In addition, nonverbal communication competence can be improved with age, exposure, and skills training.

However, even though there has been some research on improving nonverbal communication competence, more research is needed. Previous studies have mainly
focused on facial expression, but more attention is needed in other areas of nonverbal communication such as an increase in studying vocalic information. One useful area to investigate in improving nonverbal communication competence is music training because of its nonverbal characteristics in communicating emotion through sound. In the following sections, I will discuss how music is a form of communication, the importance of music in the area of nonverbal communication, and how competency in nonverbal communication may be enhanced through music training.

**Music Communication**

Music is, “an endeavour to imitate the involuntary modulations of the voice, and make its recitation richer and more expressive… just as the imitation of weeping, shouting, or sobbing…” (Helmholtz, 1954, p. 371). Scholars have proposed that music is a form of communication, whether the message is verbal, such as text from a written score, or nonverbal, such as vocal acoustic cues used to express emotion (Jungers, Palmer, & Speer, 2002; Canazza, De Poli, Roda, & Vidolin, 2003). Alty, Rigas, and Vickers (1997) also stated that music is a form of communication because music can activate emotion from person to person. In music therapy, therapists and their patients’ use musical improvisation to communicate emotions through elements of tempo, rhythm, contour, shape, motion, and texture of music, speech, vocalization of gestures, facial expressions (Pavlicevic, 2000). Pavlicevic (2000) argued that because music improvisation involves nonverbal elements of communication such as tempo and rhythm, music is communicative. For example, the emotion of anger can be activated in a person by being exposed to fast tempo, loud sound level, sharp contrasts between long and short articulation, distorted tones, and harsh timbre. On the other hand, happiness can be
expressed with fast tempo, variations in timing, moderate to loud sound level, light articulation, bright timbre, and fast and light vibrato (Gabrielsson & Juslin, 1996).

Moreover, Canazza et al. (2003) argued that music is a nonverbal form of communication where precision in executing a musical sequence is necessary to evoke an emotion. Juslin (1998) argued that musicians communicate emotions to listeners via performance by using acoustic cues of emotions derived from vocal expression of emotions. The most common emotions reviewed in literature are anger, happiness, sadness, fear, and disgust. The expression of such emotions through voice allows people to transfer information (encoding) to others and the recognition of emotions allows people to make inferences about others (decoding) (Juslin & Laukka, 2001). Much research on vocal expression shows that musically trained individuals decode emotion with better than chance accuracy by the receiver than musically untrained individuals (e.g. Juslin & Laukka, 2001). For example, Canazza et al. (2003) investigated the relationship between the musician’s intentions and the listener’s experience of emotion in music. A musician performed one musical excerpt with six different interpretations. The result of the experiment showed that the different performances of the musical piece were similar to the listeners’ interpretation of the performance. In other words, listeners’ were able to accurately detect the emotion that the musician intended to portray.

**Relationship between music and speech prosody.** Music and vocal expression share a relationship in which they are two modalities that rely on acoustic cues to effectively express and interpret emotion (Juslin & Laukka, 2003). In literature, vocal expression is commonly referred to as *speech prosody* (Trainor, Austin, & Desjardins,
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2000; Thompson, Schellenberg, & Husain, 2004). Thus, speech prosody will be used to refer to the acoustic cues of vocal expression.

Dalla Bella, Peretz, Rousseau, and Gosselin (2001) found that manipulations in tempo and mode affect the way people perceive emotions. Dalla Bella et al. defined tempo as the number of beats per minute and is used to set the pace in a musical piece. Fast tempo is usually used to evoke happiness and slow tempo is usually used to evoke sadness. Mode is defined as a specific subset of pitches used to set the mood in a musical excerpt. Music set in a major key is used to depict happiness and a minor key is usually used to depict sadness. Based on their definition of tempo and mode, two experiments were conducted to assess sensitivity in tempo and mode in making emotional judgments. In both experiments, every individual was a nonmusician and did not receive music training. Musical excerpts were selected to evoke a sense of happiness or a sense of sadness. Tempo of the original musical score was arranged to a different tempo and mode was manipulated so that musical scores in a major key were changed to a minor key and musical scores in a minor key were changed to a major key. The results of the first study indicated that people are sensitive to tempo and mode. When manipulations of tempo and mode were combined, individuals were unable to distinguish between happiness and sadness. In other words, people used acoustic cues such as tempo and mode to determine a particular emotion. Similar to the first study, the second study included children six to eight years old. The results of this study showed that sensitivity to tempo occurs before sensitivity to mode. However, children were still able to differentiate between happiness and sadness. Thus, tempo and mode are contributing factors of distinguishing emotions such as happiness and sadness.
In addition to being able to distinguish emotions using tempo and mode, Jungers, Palmer, and Speer (2002) examined the persistence of tempo in music and prosody. With tempo persistence in music, pianists performed and listened to musical pieces for a memory test. They found that first listening to the tempo of a musical piece influenced the tempo to which the pianists played a musical piece. With tempo persistence in prosody, individuals native to the English language were instructed to listen and repeat sentences for a memory test. The results showed that speakers were influenced by the sentences they listened to and the preferred tempo they used to repeat the sentences. As a result of the study, the researchers suggested that people are generally influenced by the nonverbal expressions of acoustic cues and how acoustic cues are presented in both music and language.

Not only are people generally sensitive to acoustic cues such as tempo and mode, but people are also influenced by the culture in which instrumental music is played. Patel, Iversen, and Rosenberg (2006) stated that instrumental music of a person’s culture may reflect the way people communicate in their native language. For example, Patel and Daniel (2003) compared rhythmic differences in English and French classical music and in English and French language. They found a significant difference between English and French music, English having a greater contrast in rhythm than French. They also found that musical measurements in rhythm were similar to measurements in language. In other words, rhythm in English music was similar to rhythm in the English language and rhythm in French music was similar to rhythm in the French language.

Patel, Iversen, and Rosenberg (2006) conducted a study similar to that of Patel and Daniel. Their study examined the relationship between rhythm and melody in the
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English and French language. They found that patterns in note duration in music closely paralleled that of patterns in note duration of speech prosody. English music had more contrast in note durations and French music had more uniform note durations. The results of the study suggest that acoustic cues such as rhythm and melody in music also reflect acoustic cues in language.

In summary, acoustic cues in both music and prosody are important in making emotion judgments. Acoustic cues are also important in instrumental music because they reflect the way people speak. Moreover, research has found that sensitivity to acoustic cues is present in childhood. These studies suggest that even when research focuses on specific acoustic cues, words do not necessarily matter when conveying an emotion. Instead, nonverbal communicative elements in acoustic cues such as tempo, mode, rhythm, and melody are necessary when evoking an emotion and when making emotion judgments.

**Similarities and differences between music and speech prosody.** Given that music and speech prosody share a relationship in expressing and interpreting emotion with the use of acoustic cues, scholars have also investigated the similarities and differences between music and speech prosody. In research, music and speech prosody seem to have more similarities than differences.

Ilie and Thompson (2006) manipulated three dimensions of affect and compared the dimensions to acoustic cues in music and speech prosody. The three dimensions manipulated in Ilie and Thompson’s study were valence (pleasant-unpleasant), energy arousal (awake-tired), and tension arousal (tense-relaxed). They found that manipulations in acoustic cues influence affect in both music and prosody.
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Ilie and Thompson argued that acoustic cues such as intensity, rate, and pitch provide valuable information to effectively decode emotional meaning in music and prosody.

Although music and prosody were found to have similarities, some differences were found in acoustic manipulations as well. For example, Ilie and Thompson (2006) also found that manipulations in high-pitched prosody of individuals who had an average of three and a half years of music training had more pleasant judgments in sound than low-pitched prosody. However, they found that low-pitched music had more pleasant judgments in sound than high-pitched music. Moreover, the rate of vocal expression influenced pleasant judgments in prosody, but not for music and manipulations of rate influenced tension in music, but not for prosody.

Music Training

In the general sense, training in music “involves discrimination of pitch intonation, onset, offset, and duration aspects of sound timing as well as the integration of multisensory cues to perceive and produce notes” (Musacchia, Sams, Skoe, & Kraus, 2007, p. 15896). Given that music can be seen as a form of nonverbal communication, scholars have looked at how music training influences areas in verbal memory (Chan, Ho, & Cheung, 1998), IQ (Schellenberg, 2004), brain structures (Gaser & Schlaug, 2003), mathematics (Schmithorst & Holland, 2003), and acoustic cues in language (Magne, Schon, & Besson, 2006).

Over the past decade, scholars have sought to understand the effects of music training. Training in music has been assessed by the number of years that individuals have studied music. For example, scholars tended to look at individuals who had formally studied music for ten or more years (e.g. Marques, Moreno, Castro, & Besson, 2006).
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2007). This benchmark was often used because research suggested that ten years of musical experience and practice is needed to attain eminent performance for a musician (as cited in Ericsson, Krampe, & Tesch-Romer, 1993). In other words, ten years of musical training is necessary for an individual to be able to accurately and effectively interpret and express a musical piece. However, scholars who were interested in assessing the effects of music training in children considered children who had studied music for at least three years because they were too young to reach the ten year benchmark. Children with three years of music training have shown to outperform children with no music training in areas associated with music such as motor skills and the ability to accurately discriminate melodies (Forgeard, Winner, Norton, & Schlaug, 2008).

Training in music has been approached in two ways, formal training and informal training. When researchers examined music training, they sometimes distinguished between the two. According to Folkestad (2006), formal training can be thought of as a learning situation in which an instructor and a student focus on the techniques of playing music whereas informal training can be thought of as a learning situation in which individuals learn to play music without an instructor. Research on music training tends to show that there are benefits to being musically trained in comparison to musically untrained. For example, Magne, Schon, and Besson’s (2006) examined whether eight-year old children with three to four years experience in music training were better able to detect pitch differences in musical pieces and French spoken sentences than children with no musical training. They found that children with a musical background detected pitch differences better than children with no music training in both music and language. Pitch
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refers to the frequency and organization of low and high sounds (Kraus & Chandrasekaran, 2010). The ability to discriminate low and high pitch sounds is an important aspect in both music and prosody.

Marques et al., (2007) found that musically trained individuals were better able to detect pitch changes in a foreign language than untrained individuals. That individuals trained in music had at least fourteen years of music experience and who continue to practice on a regular basis. The participants in this study listened to sentences presented in Portuguese and had to detect as quickly and accurately as possible whether the last word in a sentence sounded strange. Musically trained individuals were more accurate in detecting pitch incongruities in sentences and had faster reaction time than untrained individuals. Musically trained individuals were also better able to detect slight differences in pitch when sentences were presented in a foreign language. Thus, individuals with music training were able to process pitch differences in music and language.

Schon, Magne, and Besson (2004) conducted a study to compare pitch perception in music and language. They found that musicians, who had an average of fifteen years in music training, were better at detecting small differences in pitch violations and had faster reaction time in both music and language than individuals who were untrained in music. Moreover, Besson, Schon, Moreno, Santos, and Magne (2007) conducted an analysis on musical training and pitch processing and found that training in music improves perception of pitch in both music and language. Their definition of musically trained individuals, however, was undefined. In addition, Musacchia et al. (2007) manipulated acoustic and audiovisual sounds in music and speech using the bowing of a
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cello and a male articulating the syllable “da”. They found that trained musicians performed better than untrained individuals in responses to acoustic cues in music and speech prosody. Trained musicians referred to individuals who began playing an instrument at the age of five years, had ten or more years of musical experience, and practiced more than three times a week for four or more hours during the last ten years. Individuals who failed to meet the criteria of a trained musician were categorized as nonmusicians. The results of this study demonstrated that musicians are better at pitch encoding than individuals untrained in music. In other words, being exposed to musical training allowed individuals to strengthen their ability to encode pitch cues.

In addition to examining the effects of pitch in music and prosody, research has shown that music training increases sensitivity to emotions conveyed in speech prosody (Thompson, Schellenberg, & Husain, 2004). Thompson, Schellenberg, and Husain conducted three studies that examined sensitivity of emotions in speech prosody. The first two experiments employed of college students who received an average of eight years of formal music training, all of which began music training in early childhood. Students who have only received one year of music training or no experience with music were categorized as musically untrained. In the first experiment, participants assessed their ability to decode emotion and the results indicate that musically trained individuals performed better than untrained individuals. In the second study, speech prosody in a foreign language was examined. The results of this experiment showed that musically trained individuals outperformed untrained individuals in detecting tone sequences in a foreign language. In addition, the second experiment demonstrated that decoding accuracy is highest for identifying sadness and lowest for identifying fear, across
languages. The final experiment focused on children’s experience in decoding tone sequences. In this experiment, six-year-old children were randomly assigned to take weekly lesson in keyboard, singing, drama, or they received no lessons for a year. When they were seven years old, they were asked to make emotion judgments on speech prosody in English and Tagalog languages. The results of the third experiment found that children with music training (keyboard and singing) performed better at decoding emotion than children with no training. In addition, children who were trained in drama, an alternative group outside of music also performed better than children with no training.

All in all, previous studies on music training point out a relationship between acoustic cues in music and in speech prosody. Music training has not only shown to enhance skills in areas such as verbal memory, mathematics, and IQ, but individuals with a history in music training have shown to outperform individuals who have not received training in music.

Because music and speech prosody are similar in expressing and understanding emotion through the use of acoustic cues, scholars have argued that music is a form of nonverbal communication. Changes in pitch, tone, tempo, timbre, rhythm, and melody are just a few of the acoustic cues that are used to communicate emotion, from one person to another. In other words, music is a communication of sound.

Music is also understood among children. Children who are exposed to music and music training at a young age are more likely to encode and decode acoustic cues in both music and speech prosody better than children who receive no music training (Strait,
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Kraus, Skoe, & Ashley, 2009). Thus, it seems evident that music training is beneficial to the individual.

Scholars have stated that expressing, interpreting, and managing emotion is essential for competence in nonverbal communication (e.g. Halberstadt, Denham, & Dunsmore, 2001, Mayer & Salovey, 1997, Saarni, 1990, & Riggio, 1986). If acoustic cues in nonverbal communication and music share similarities and if training in music have shown to improve in a variety of areas including making emotion judgments, then training and practice in music may enhance nonverbal communication competency and emotional intelligence. In addition, training and practice in music may not only enhance competency in nonverbal communication and emotional intelligence, but may also enhance overall communication competence. Therefore, the following hypotheses are offered.

H1:  Years of formal training in music will be positively associated with reports of nonverbal communication competency.

H2:  Musically trained individuals will report higher nonverbal communication competency than musically untrained individuals.

H3:  Years of formal training in music will be positively associated with reports of emotional intelligence.

H4:  Musically trained individuals will report higher emotional intelligence than musically untrained individuals.

RQ: What is the relationship between formal music training and communication competency?
CHAPTER 2. METHODS

Procedures

Recruitment. One hundred sixty-six students were recruited from undergraduate speech communication courses and music courses. Lecturers in the Speech Department were sent an email, which asked for student participation. In the email, a letter was attached addressed to the students in the Speech department about a research opportunity. The letter was then forwarded to students taking classes in the Speech department.

There was some difference on how the participants were recruited from the Music department. For example, the researcher recruited participants from the marching and concert bands by introducing the study at the beginning of a class period. The students were informed about a study concerning the relationship between music and communication. They were told that the study requested participation from students who have received music training in particular. For students to participate in the study, lecturers in the Music department were emailed a letter informing them about the study and asking for student participation. Lecturers then forwarded the email to the students in the Music department. Then, after the students participated in the study, lecturers in both the Speech and Music departments provided the students with either extra credit or class participation points.

A majority of the participants were recruited from speech communication courses 81.3% \(n=135\) and 11.4% \(n=19\) of students were recruited from music courses. There
were a few students who did not complete the survey, 7.2% (n=12). If students were recruited from speech communication courses, they registered for the SONA program. SONA is an online research participation site for the Department of Speech at the University of Hawaii at Manoa. A link to the survey was provided to the students after they registered for the SONA program. Once the students registered and accessed the link to the survey, they were provided a consent form before they began the survey. If students agreed to participate in the study from music courses, they were provided a direct link to take the survey online through SurveyMonkey and did not need to register for the SONA program because they were not taking courses in the Speech department. The survey took approximately thirty minutes to complete.

The participants’ ages ranged from 17 to 48 years (M=20.5, SD=3.4). There were more female participants (60.2%, n=100) than were males (32.5%, n=54). In terms of ethnicity, Asians (53.6%, n=89) and Caucasians (13.9%, n=23) were the predominant groups. The remainder of the ethnicities included African American (1.8%, n=3), American Indian/Alaskan Native (1.2%, n=2), Hispanic (1.8%, n=3), Pacific Islander (5.4%, n=9), Mixed (12%, n=20), and Other (3%, n=5).

Methods and materials. Participants completed a consent form before taking the survey online. The consent form introduced the research study to the participant and stated that the study was entirely voluntary and their participation was anonymous. Students were however asked for their names so the researcher could provide them credit. The names were removed once the students were credited for their participation in the study. Participants were then asked to print the consent form to keep for their records.
The survey included questions in the following order: nonverbal communication competence, communication competence, emotional intelligence, and music background information such as years of formal training. Additional questions about the participants’ musical background such as sight-reading ability were asked, but were not the focus of this study therefore, these questions were not used to test the hypotheses. At the end of the survey, participants were asked to fill out a demographic questionnaire, which asked questions about age, sex, ethnicity, and whether the participant was recruited from a music course.

**Measures**

**Nonverbal communication competence and overall communication competence.** The Social Skills Inventory was used to measure both nonverbal communication competence and overall communication competence. The Social Skills Inventory was developed by Riggio and Carney (2002) to measure global communication skill or competence and is based on a framework of six basic social skills in nonverbal and verbal communication. The six social skills include *emotional expressivity*, *emotional sensitivity*, *emotional control*, *social expressivity*, *social sensitivity*, and *social control*. The social skills for nonverbal communication competence are *emotional expressivity*, (e.g., “I have been told that I have expressive eyes”), *emotional sensitivity*, (e.g., “When people are speaking, I spend as much time watching their movements as I do listening to them”), and *emotional control*, (e.g., “I am able to conceal my true feelings from just about anyone”). The social skills for verbal communication competence are *social expressivity*, (e.g., “I enjoy giving parties”), *social sensitivity*, (e.g.,
Nonverbal Communication Competence and Music Training

“Criticism or scolding rarely makes me feel uncomfortable”), social control, (e.g., “I can be comfortable with all types of people – young, old, rich, and poor”).

There are ninety items on the Social Skills Inventory and they are rated on a 5-point Likert type scale (1 = not at all like me, 5 = exactly like me). There are fifteen items for each of the six social skills. To measure nonverbal communication competence, forty-five of the original ninety items were averaged and focused on the nonverbal domain of emotional expressivity, emotional sensitivity, and emotional control. To measure overall communication competence, all original ninety items were averaged. In both assessments, the higher the individual’s score, the higher the individual’s level of nonverbal communication competence and overall communication competence.

To assess the reliability for nonverbal communication competence, all forty-five items from the subscales of emotional expressivity, emotional sensitivity, and emotional control were used. The scale reliability for nonverbal communication competence was \( \alpha = .75 \) (\( M=2.99, SD=.33 \)). To assess reliability of overall communication competence, all ninety items of the Social Skills Inventory were used. The scale reliability for overall communication competence was \( \alpha = .88 \) (\( M=3.05, SD=.33 \)).

Interitem reliabilities were run for each of the six subscales in the social skills inventory. Analyses of five of the six subscales produced adequate reliability estimates. Two items were dropped in the emotional expressivity subscale to increase reliability. The reliability of the emotional expressivity subscale after the items were dropped was \( \alpha = .65 \). See Appendix B for dropped items. No other items were dropped from the scale. Reliabilities for the other five subscales emotional sensitivity, emotional control, social
expressivity, social sensitivity, and social control were \( \alpha = .80, \ \alpha = .70, \ \alpha = .87, \ \alpha = .81, \) and \( \alpha = .77 \), respectively. See Table 2 for means and standard deviations.

**Emotional intelligence.** Emotional intelligence was measured using an adapted form of Mayer-Salovey-Caruso Emotional Intelligence Test. The Self-Rated Emotional Intelligence Scale was developed by Brackett, Rivers, Shiffman, Lerner, and Salovey, (2006) as an alternative measure to performance measures of emotional intelligence. There are nineteen items on the Self-Rated Emotional Intelligence Scale and they are rated on a 5-point Likert type scale (1 = very inaccurate, 5 = very accurate). This scale measures five subscales of perceiving emotion, understanding emotion, use of emotion, managing emotion, and social management. The scale included four items on perceiving emotion, (e.g., “By looking at people’s facial expressions, I recognize the emotions they are experiencing”), four items on understanding emotion, (e.g., “I have the vocabulary to describe how most emotions progress from simple to complex feelings”), three items on use of emotion, (e.g., “When making decision, I listen to my feelings to see if the decision feels right”), four items on managing emotion, (e.g., “I can handle stressful situations without getting too nervous”), and four items on social management, (e.g., “I know the strategies to make or improve other people’s moods”).

To assess overall emotional intelligence, all nineteen items from the Self-Rated Emotional Intelligence Scale were used. The reliability of all nineteen items was \( \alpha = .84 \) \( (M=3.08, \ SD=.56) \). Interitem reliabilities were run for each subscale of the Self-Rated Emotional Intelligence Scale. The subscale for use of emotion was eliminated because the value of the scale reliability was negative. One item was dropped from the managing emotion subscale to increase reliability. The reliability for the managing emotion
Nonverbal Communication Competence and Music Training

The subscale after the item was dropped was $\alpha = .77$. No other items were dropped from the scale. See Appendix C for dropped items. Reliabilities for the subscales perceiving emotion, understanding emotion, managing emotion, and social management were $\alpha = .79$, $\alpha = .88$, $\alpha = .77$, and $\alpha = .80$, respectively. See Table 2 for means and standard deviations.

**Music training.** The ways in which musical training was addressed was by assessing years of formal training in music as well as comparing musically trained and untrained individuals. See Appendix D for items asked on music training. Formal training was defined as a learning situation in which students are directed by instructors toward learning how to play the music in addition to the students practicing and rehearsing on their own outside of class (Folkestad, 2006). The average years that participants’ received formal music training was 4.73 years ($SD=5.36$). In terms of types of formal training, the most years on average that students reported on was one-on-one instruction ($M=2.52$, $SD=4.12$) and school ($M=2.36$, $SD=3.65$). Other types of formal music training included orchestra, band, choir, and group instruction. Years of training was calculated by averaging the difference in years that students received formal music training. For example, if a student indicated that he/she received formal training in school from 2003 to 2010, the student’s years of formal music training was indicated as eight years (reflecting all the years from 2003 to 2010). If students indicated that they received one-on-one training from 2001 to 2008 in addition to their school training from 2001 to 2010, the earliest year was subtracted from the most recent year that students reported training in music, regardless of type of training. In this example, the student’s
years of formal training in music was calculated as ten years. No overlap of years was duplicated in the calculation.

Musically trained individuals were categorized as receiving formal music training at the age of 5 years or older, had 8 or more years of musical experience, and practiced at least 2 hours per week. Forty-three (26%) of all participants fit into the musically trained category. Musically untrained individuals were categorized as not receiving any type of music training. Sixty-six (40%) of all participants fit into the musically untrained category. The reason for measuring musically trained and untrained individuals in this manner was because much research on music training has focused on individuals who averaged 10 or more years of formal music training (Lee, Skoe, Kraus, & Ashley, 2009; Marques et al. 2007; Fujioka, T., Trainor, L. J., Ross, B., Kakigi, R., & Pantev, C., 2004), practiced an instrument on average for at least 3 hourly practice sessions per week (Musacchia, Strait, & Kraus, 2008; Strait, Kraus, Skoe, & Ashley, 2008; Magne, Schon, & Besson, 2006) and begun training on average by the age of 5 years or older (Parbery-Clark, Skoe, & Kraus, 2009; Musacchia, Strait, & Kraus, 2008). It may be difficult to obtain college participants with 10 or more years of practice at the age onset of 5 years because college students are generally younger and have less experience than participants with ten or more years of music training. Researchers who have focused mainly on college students have measured students with at least 8 years of music training (Thompson, Schellenberg, & Husain, 2004). Thus, students who have at least 8 years of formal music training were categorized as musically trained.
CHAPTER 3. RESULTS

**Hypothesis one.** The first hypothesis predicted that years of formal music training would be positively associated with competency in nonverbal communication. A two-tailed Pearson product-moment correlation was used to test this relationship. The hypothesis was supported. A significant positive correlation between years of formal music training and nonverbal communication competence was found, $r(158)=.23, p=.01$. Increases in years of formal music training were correlated with reports of higher competency in nonverbal communication.

A correlation was run to determine which of the subscales in nonverbal communication competence correlate to years of formal music training. The subscales for *emotional expressivity*, $r(158)=.19, p=.02$, and *emotional sensitivity*, $r(158)=.22, p=.01$ had a significant positive correlation. The subscale for *emotional control* however, was nonsignificant, $r(158)=.03, p=.76$. See Table 1 for a summary of the correlations between nonverbal communication competence and years of formal music training.

**Hypothesis two.** The second hypothesis predicted that musically trained individuals would report higher nonverbal communication competency than musically untrained individuals. An ANOVA was used to test this relationship. This hypothesis was also supported. The results show that individuals with musical training ($M=3.09, SD=.34$) had significantly higher reports of nonverbal communication competence than individuals who had no training ($M=2.92, SD=.29$) in music, $F(1,105)=7.45, p=.01$, $\eta^2=.07$.  

**Hypothesis three.** The third hypothesis proposed that years of formal music training would be positively associated with reports of emotional intelligence. A two-tailed Pearson product-moment correlation was used to test this relationship. The hypothesis was not supported; support for the relationship between years of formal training and emotional intelligence was not be found, $r(158)=.11, p=.20$.

A two-tailed Pearson product-moment correlation was run to determine if any of the subscales in emotional intelligence would correlate to formal music training. Although there was no significant positive correlation between emotional intelligence and formal music training the subscales for *perceiving emotion*, $r(158)=.18, p=.03$ and *understanding emotion*, $r(158)=.16, p=.05$, the decoding aspect of nonverbal communication competence, was positively significant. See Table 2 for the correlation among the subscales of emotional intelligence and years of formal music training.

**Hypothesis four.** The fourth hypothesis proposed that musically trained individuals would have higher emotional intelligence than individuals with no music training. An ANOVA was used to test this relationship. This hypothesis was also not supported; support for a main effect between musical training and emotional intelligence was not be found, $F(1,99)=.89, p=.35, \eta^2=.01$.

**Research question.** The research question explored the extent to which there was a relationship between formal music training and overall communication competency. To examine this question, a two-tailed Pearson correlation was used. The results revealed a significant positive correlation between music training and overall communication competency, $r(158)=.20, p=.01$. In other words, the more formal music training an individual has, the more reports there are on overall communication competence.
### Tables

**Variable Correlations With Years of Formal Training in Music**

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*p<.05, **p<.01, two-tailed

Table 2

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**Correlations of Nonverbal Communication Competence and Emotional Intelligence Subscales**

*p<.05, **p<.01, two-tailed

CHAPTER 4. DISCUSSION

This study sought to understand the relationship between nonverbal communication competency and music training. The concept of nonverbal communication has been referred to as emotional intelligence, emotional competence, affective social competence, and social skills. These concepts have focused on the ability to encode, decode, and regulate emotion-based messages. Thus, skill in the ability to accurately encode, decode, and regulate emotion-based messages was used to address the concept of nonverbal communication competence.

Given that scholars have argued that music is a form of communication (Alty, Rigas, & Vickers, 1997; Pavlicevic, 2000; Jungers, Palmer, & Speer, 2002; Canazza, De Poli, Roda, & Vidolin, 2003), this study raised the question on whether musical training enhances nonverbal communication competence. The reason being, past studies have shown that music is related to skill in verbal memory, mathematics, IQ, and language through formal music training. Thus, this study sought to understand the relationship between nonverbal communication competence and formal music training.

The results of this study showed that more years of formal music training had a significant positive correlation with nonverbal communication competence. The results also indicated that individuals who have begun formal music training at the onset of 5 years of age, had 8 or more years of formal training, and currently practiced 2 or more hours a week reported higher competency in nonverbal communication as well as reported higher on overall communication competency than individuals who have had no music training. The results on emotional intelligence were not significant. Years of
formal music training in relation to individuals with music training and individuals with no music training were not significantly different on reports of emotional intelligence.

It is possible that individuals with music training have learned to pay more attention to acoustic cues in expressing and receiving emotions. The results reported in this paper offer insight concerning the relationship between music and communication. For instance, there are many contributors to what makes an individual competent in nonverbal communication. This study suggests that music training is one factor that is related to nonverbal communication competence as well as overall communication competence.

**Implications**

Given that the results of this study have indicated a relationship among nonverbal communication competence, overall communication competence, decoding ability in emotional intelligence, and years of music training, it is reasonable to argue for future implications for research in the communication field. Several factors contribute to music training. They include the age of training onset (Pantev, Oostenveld, Engelien, Ross, Roberts, & Hoke, 1998) number of years spent training in music (Musacchia, Sams, Skoe, & Kraus, 2007), and amount of practice put into training (Musacchia, Strait, & Kraus, 2008). Scholars have found that age of onset in music training in addition to years of training is important in that individuals who have early music training show higher performance in verbal memory (Chan, Ho, & Cheung, 1998), mathematical skills (Schmithorst & Holland, 2003), and IQ (Schellenberg, 2004) than individuals who have not received music training. Practicing music has also shown to occur in individuals who begin training earlier in life (Musacchia, Strait, & Kraus, 2008). The results of past
Nonverbal Communication Competence and Music Training

research may be due to the notion that music training is related to encoding and decoding ability (Thompson, Schellenberg, & Husain, 2004; Gabrielsson, 1996).

When analyzing the subscales of nonverbal communication competence, results showed that encoding (*emotional expressivity*) and decoding (*emotional sensitivity*) ability were significant, but not for regulating emotion (*emotional control*) in relation to years of formal music training. Although there was no significant correlation between music training and emotional intelligence, results showed that decoding emotion (*perceiving and understanding emotion*) had a significant positive correlation when subscales of emotional intelligence were analyzed. This research further suggests that music training is related to higher reports in encoding and decoding ability.

The results on nonverbal communication competence and emotional intelligence were consistent with previous studies on the relationship between formal music training and encoding and decoding ability (Thompson, Schellenberg, & Husain, 2004; Gabrielsson, 1996). However, the results of this study showed that decoding ability (e.g. emotional sensitivity, perceiving emotion, and understanding emotion), in particular, had a consistently positive relationship with years of formal music training.

**Implications for music training in the education system.** Due to the relationships found among nonverbal communication competence, overall communication competence, and decoding ability in emotional intelligence, the findings indicate that children may benefit from training in music at an early age. The simplest way that children could receive music training would be in the education system. Children might benefit from music training in the classroom because music training might allow students to be less distracted by extraneous noises. For example, research by
Parbery-Clark, Skoe, and Kraus (2009) compared musically trained and musically untrained individuals in the discrimination of target noise and background. They found that musically trained individuals were better able to segregate target noise from background noise. They also found that musically trained individuals were less affected by the amount of distraction coming from background noises in comparison to musically untrained individuals.

In addition to their study, Parbery-Clark, Skoe, Lam, and Kraus (2009) conducted another study on noise where musically trained or musically untrained participants repeated sentences and identified key words in the presence of background noise. They found that musically trained individuals performed better than musically untrained individuals in distinguishing conversations and background noises.

Thus, previous research and this current study suggests that research on the effect of music training in schools may be beneficial in further understanding of children’s development in nonverbal communication competence. Most studies on music training have examined musicians who have begun training early in life and have had years of formal training (Kraus & Chandrasekaran, 2010). The results of such studies have provided much insight into learning the effects of music training, but much has yet to be learned.

**Limitations**

The present study is limited in several respects. First, this study relied on self-report assessments of nonverbal communication competence, emotional intelligence, and overall communication competence. Future experiments should assess the instructor’s report on the students’ level of nonverbal communication competence and musical ability
in addition to the students’ self-report of their own nonverbal communication competence and musical ability as a way of supplementing self-reports. Second, questions on music training were open-ended and results may have been affected by how questions were coded. Years of formal music training was coded systematically from the researchers perspective, however, students may have assessed years of music training differently from how it was coded in the research. For example, if a participant indicated formal music training from years 2003-2010, the researcher coded all the eight years stated. Some participants might have used the same coding scheme as the researcher, but other participants might have estimated the number of years in formal music training by subtracting the most recent year to the earliest year, which reflects a seven year difference. The possible difference in coding suggests that a coding scheme should be developed to consistently assess years of training in music.

Third, the study was limited to gathering participants from one university. For example, participants who were in the *musically trained* category were restricted to those who had started training by at least the age of 5, had 8 or more years of musical experience, and practiced at least 2 hours per week. This restriction excluded musicians who may have begun playing an instrument or practicing voice later in life and may have only had 7 years of musical experience. In addition, results may be different from individuals who are in college in comparison to individuals who have not gone to college, but still have many years in music training. Future research could also measure three categories of music training, adding a category with individuals that have had some training rather than exclude those individuals from the study. By creating a third
Nonverbal Communication Competence and Music Training

category, researchers may be able to identify the extent to which music training enhances nonverbal and overall communication competence.

Finally, assessing nonverbal communication competence focused on only the nonverbal aspect of Riggio’s Social Skills Inventory. The social skills inventory was developed by Riggio and Carney (2002) to measure both nonverbal and verbal communication competence in order to determine a balance among the basic social skills. Because the Social Skills Inventory was used to measure overall communication competence, researchers should find a scale that measures only nonverbal communication competence. In addition, since this study focused on nonverbal communication competence, the results may show an imbalance of overall communication competence.

It is important to determine a balance of skills among the six subscales in the Social Skills Inventory. For example, an individual who scored high in emotional expressivity but scored low on emotional sensitivity would not appear to be balanced or have equal weight in regards to competence in communication. This study did not assess balance of communication competence so it might help to test for a balance of competence among the six subscales in the Social Skills Inventory.

Additional Future Directions

Perhaps future studies could expand this research and find further benefits in the effects of music training on nonverbal communication competence and overall communication competence. For example, future research could investigate whether students who report higher competency in nonverbal communication and overall communication in relation to music training have higher reports in positive behavior in school. Future research could also investigate whether individuals who report higher
scores in nonverbal and overall communication competency in relation to music training have higher reports in deception detection.

Further studies could address the diversity in which an individual has trained in music. For example, individuals may learn and develop different communication skills when receiving formal and/or informal instruction, when learning to play a variety of instruments, (learning particular instruments involves developing different skills), or where instruction was given (at home, at school, in another country). Individuals may also benefit on the type of formal training received. Perhaps individuals who are formally trained in group settings such as band and orchestra benefit more from this type of formal instruction because of the interactions with others and the interaction with other instruments in comparison to receiving one-on-one training.

Moreover, research could investigate nonverbal communication competence and overall communication competence as a basis for developing a neurological understanding in the communication field. Studying brain regions in relation to music, for example, may further the understanding of emotion development. Wong, Skoe, Russo, Dees, and Kraus (2007) found that musically trained individuals were better able to encode linguistic pitch than musically untrained individuals. Based off their results, they suggested that pitch discrimination is relayed from subcortical structures to the neocortex, which facilitates cognitively demanding tasks. Due to the experience that musically trained individuals have in discriminating pitch cues, their research implies that long-term training in music may shape basic sensory circuitry of the brainstem’s role in encoding speech. In addition, Blood and Zatorre (2001) found that various brain regions are involved with motivation, emotion, chills, and arousal in response to music. They
used positron emission tomography (PET) to study brain regions and found activity in paralimbic and neocortical regions, which are associated with emotional responses in music. Such results found in the relationship between neuroscience and music warrants further investigation.

In addition, music appreciation tests might affect reports in nonverbal communication competence and overall communication competence. For example, an individual’s willingness to train in music and appreciate music might affect the competence level in nonverbal communication and overall communication. The individual who reports high scores in willingness to train in music and music appreciation might report higher levels of nonverbal communication competence in comparison to individual’s who are not willing to train in music and do not have music appreciation. Thus, future research could investigate the relationship among music appreciation, music training, and nonverbal communication competence.

**Conclusion**

This study examined the relationship between nonverbal communication competence and music training. There are significant and interesting findings in this study. To my knowledge, there are no data available on the relationship between nonverbal communication competence and music training. This research showed a new area to explore in the communication field. Moreover, future research could help the field of communication to better understand how music can be argued as a form of communication.
APPENDIX A

Agreement to Participate in Music and Communication Survey

This study is a thesis research project being conducted by a graduate student in the Department of Speech at the University of Hawaii at Manoa. The purpose of this study is to develop a better understanding of the relationship between music and communication.

Participation in this research project is completely voluntary. You are free to withdraw from participation at any time with no penalty or loss of benefit to which you would otherwise be entitled.

Approximately 100 individuals will participate in the study. Participation in the study consists of filling out a survey that asks you questions about how you communicate with others and information about your musical training background. Completion of the survey will take approximately 30 minutes.

At the end of the survey, you will be asked for your name so that you will be given research credit. Your name will be deleted after research credit has been given and no identifying information will be included with the research data or results. Research data will be stored in a secure file and your participation will remain confidential. If you have any questions or concerns regarding your rights as a study participant, please contact the UH Committee on Human Studies at (808) 956-5007, or uhirb@hawaii.edu.

The investigator believes there is little or no risk to participating in this research project. Participating in this research may be of no direct benefit to you. If you feel a need to talk to someone after participation in the survey, please contact the UH Counseling Development Center at (808) 956-7927.

If you have any questions in regards to this research, please contact the investigator, Audrey Mendoza, at (808) 956-3317 or amendoza@hawaii.edu.

Please print this page for your records.

If you agree to participate in this research study, click "yes" to begin the survey. If you do not agree to participate in this research study, click "no" to exit the survey.
APPENDIX B

Social Skills Inventory

**Directions:** On the following pages are 90 statements that indicate an attitude or behavior that may or may not be characteristic or descriptive of you. Read each statement carefully. Then, using the scale shown below, decide which response will most accurately reflect your answer and darken the appropriate circle on your answer sheet. Note that you will need to work from left to right on the answer sheet. Keep in mind that there are no right or wrong answers. Mark only one response for each statement. It is important to try to respond to every statement.

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**Emotional Expressivity**
1. It is difficult for others to know when I am sad or depressed.
2. I talk faster than most people.
3. When depressed, I tend to make those around me depressed also.
4. I have been told that I have expressive eyes.
5. I usually feel uncomfortable touching other people.
6. I often laugh out loud.
7. Sometimes I have trouble making my friends and family realize just how angry or upset I am with them. *
8. My facial expression is generally neutral.
9. I rarely show my anger.
10. I often touch my friends when talking to them.
11. I am able to liven up a dull party.
12. I dislike being the center of attention.
13. I rarely show my feelings or emotions.
14. Friends have sometimes told me that I talk too much.
15. I never shout or scream when angry. *

**Emotional Sensitivity**
16. When people are speaking, I spend as much time watching their movements as I do listening to them.
17. Few people are as sensitive and understanding as I am.
18. At parties, I can immediately tell when someone is interested in me.
19. I am interested in knowing what makes people tick.
20. I can easily tell what a person’s character is by watching his or her interactions with others.
21. I always see to know what peoples’ true feelings are no matter how hard they try to conceal them.
22. I can accurately tell what a person’s character is upon first meeting him or her.
Nonverbal Communication Competence and Music Training

23. One of my greatest pleasures in life is being with other people.
24. I can instantly spot a “phony” the minute I meet him or her.
25. I dislike it when other people tell me their problems.
26. I sometimes cry at sad movies.
27. I am easily able to give a comforting hug or touch to someone who is distressed.
28. I can spend hours just watching other people.
29. I am often told that I am a sensitive, understanding person.
30. When my friends are angry or upset, they seek me out to help calm them down.

Emotional Control

31. People can always tell when I dislike them, no matter how hard I try to hide my feelings.
32. It is often hard for me to keep a “straight face” when telling a joke or humorous story.
33. People can always tell when I am embarrassed by the expression on my face.
34. I am not very skill in controlling my emotions.
35. I am able to conceal my true feelings from just about anyone.
36. I can keep a straight face even when friends try to make me laugh or smile.
37. It is very hard for me to control my emotions.
38. I am very good at maintaining a calm exterior even if I am upset.
39. I usually adapt my ideas and behavior to the group I happen to be with at the time.
40. While I may be nervous on the inside, I can disguise it very well from others.
41. I can make myself look as if I’m having a good time at a social function even if I’m not really enjoying myself at all.
42. I am rarely able to hide a strong emotion.
43. I can easily pretend to be mad even when I am really feeling happy.
44. People can always “read” my feelings even when I’m trying to hide them.
45. I am easily able to make myself look happy one minute and sad the next.

Social Expressivity

46. I enjoy giving parties.
47. It takes people quite a while to get to know me well.
48. I love to socialize.
49. I prefer jobs that require working with a large number of people.
50. I always mingle in parties.
51. I usually take the initiative to introduce myself to strangers.
52. I am usually the one to initiate conversations.
53. When telling a story, I usually use a lot of gestures to help get the point across.
54. When in discussions, I find myself doing a large share of the talking.
55. At parties I enjoy talking to a lot of different people.
56. I consider myself a loner.
57. I enjoy going to large parties and meeting new people.
58. I am unlikely to speak to strangers until they speak to me.
59. I tend to be the “life of the party”.
60. I could talk for hours on just about any subject.
Social Sensitivity
61. Criticism or scolding rarely makes me feel uncomfortable.
62. My greatest source of pleasure and pain is other people.
63. I would much rather take part in a political discussion than to observe and analyze
what the participants are saying.
64. I am greatly influenced by the moods of those around me.
65. There are certain situations in which I find myself worrying about whether I am
doing or saying the right things.
66. Sometimes I think that I take things other people say to me too personally.
67. What others think about my actions is of little or no consequence to me.
68. I often worry that people will misinterpret something I have said to them.
69. While growing up, my parents were always stressing the importance of good
manners.
70. I can be strongly affected by someone smiling or frowning at me.
71. I am very sensitive of criticism.
72. It is very important that other people like me.
73. I get nervous if I think someone is watching me.
74. I am generally concerned about the impression I am making on others.
75. I am often concerned with what others are thinking of me.

Social Control
76. I can be comfortable with all types of people – young and old, rich and poor.
77. When I’m with a group of friends, I am often the spokesperson for the group.
78. Sometimes I find it difficult to look at others when I am talking about something
personal.
79. I am not good at making prepared speeches.
80. I find it very difficult to speak in front of a large group of people.
81. When in a group of people, I have trouble thinking of the right things to talk
about.
82. I am usually very good at leading group discussions.
83. I am often uncomfortable around people whose social class is different from mine.
84. I am not very good at mixing at parties.
85. I would feel out of place at a party attended by a lot of very important people.
86. Occasionally I’ve noticed that people from different backgrounds seem to feel
uncomfortable around me.
87. I sometimes say the wrong thing when starting a conversation with a stranger.
88. I am often chosen to be the leader of the group.
89. I often find myself in awkward social situations.
90. I can easily adjust to being in just about any social situation.

Note. * = dropped items
APPENDIX C

Self-Rated Emotional Intelligence Scale

The following set of items pertains to your insight into emotions. Please use the rating scale below to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself. Please read each statement carefully, and then write the letter that corresponds to how inaccurately or accurately each statement describes you.

<table>
<thead>
<tr>
<th>Very inaccurate</th>
<th>Moderately inaccurate</th>
<th>Neither nor accurate</th>
<th>Moderately accurate</th>
<th>Very accurate</th>
</tr>
</thead>
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Perceiving Emotion
1. By looking at people’s facial expressions, I recognize the emotions they are experiencing.
2. I am aware of the nonverbal messages other people send.
3. I can tell when a person is lying to me by looking at his or her facial expression.
4. My quick impressions of what people are feeling are usually wrong (r).

Use of Emotion
5. I am a rational person and I rarely, if ever, consult my feelings to make a decision (r). *
6. When making decisions, I listen to my feelings to see if the decision feels right.
   *
7. I am a rational person and don’t like to rely on my feelings to make decisions.*

Understanding Emotion
8. I have a rich vocabulary to describe my emotions.
9. I could easily write a lot of synonyms for emotion words like happiness or sadness.
10. I have the vocabulary to describe how most emotions progress from simple to complex feelings.
11. My “feelings” vocabulary is probably better than most other persons’ “feelings” vocabularies.

Managing Emotion
12. I have problems dealing with my feelings of anger (r). *
13. I can handle stressful situations without getting too nervous.
14. I am able to handle most upsetting problems.
15. I know how to keep calm in difficult or stressful situations.
Social Management

16. When someone I know is in a bad mood, I can help the person calm down and feel better quickly.
17. I know the strategies to make or improve other people’s moods.
18. I am not very good at helping others to feel better when they are feeling down or angry (r).
19. I am the type of person to whom others go when they need help with a difficult situation.

Note. (r) = reverse scored, * = dropped items
APPENDIX D

Music Training

Directions: Please respond to the questions to the best of your knowledge. Keep in mind that training in music involves practicing a musical instrument or practicing voice. Formal training is receiving lessons from an instructor and informal training is learning music on your own and not receiving lessons from an instructor.

1. I have had music training. ______ Yes ______ No

2. I began music training at this age (Indicate the age you began music training):


3. My main instrument of choice is the:

   _____ Bass  _____ Bassoon  _____ Cello  _____ Clarinet
   _____ Flute  _____ Guitar  _____ Harp  _____ Oboe
   _____ Percussion  _____ Piano  _____ Saxophone  _____ Trombone
   _____ Trumpet  _____ Tuba  _____ Ukulele  _____ Viola
   _____ Violin  _____ Voice

4. I am currently training in music. _____ Yes _____ No

5. I currently do not train in music and have discontinued my study at this age
   (indicate the age in which you discontinued your music training):

6. I practice this many days in a week:
   _____ 1 day  _____ 2 days  _____ 3 days  _____ 4 days  _____ 5 days
   _____ 6 days  _____ 7 days  _____ Did not practice

7. I practice this many hours in a week (Indicate the number of hours in the space below):

   _____ Hours
8. My practice sessions last this many hours in a day (Indicate the number of hours
in the space below):
   _____ Hours

9. If your answer for #7 is no, at about what age did you discontinue your study?
   _____ Years _____ Months

10. I was FORMALLY trained in music (FORMAL training is receiving lessons from
an instructor). _____ Yes _____ No

11. I have received FORMAL music training. Please check all that apply.

   _____ School      _____ Orchestra      _____ Band      _____ Choir
   _____ One-on-One Instruction      _____ Group Instruction

12. These are the years I have received FORMAL music training (i.e. 1999-2004
School, 1994-2002 One-on-One Instruction)

   _____ School      _____ Orchestra      _____ Band      _____ Choir
   _____ One-on-One Instruction      _____ Group Instruction

13. I have received this many years of formal music training for “group instruction”
    (Write the number of years in the space below):

   _____ Years

14. I have received this many years of formal music training for “One-on-One
    Instruction” (Write the number of years in the space below):

   _____ Years

15. I was INFORMALLY trained in music (INFORMAL training is learning music on
    your own and not receiving lessons from an instructor). _____

   _____ Yes _____ No
16. These are the years I have received INFORMAL music training (i.e. 1999-2004 School, 1994-2002 One-on-One Instruction).

__________

17. I am able to sight-read music well.

_____ Not at all like me  _____ A little like me

_____ Like me  _____ Very much like me  _____ Exactly like me

18. What is the note in image A?

_____ A  _____ B  _____ C  _____ D  _____ E

_____ F  _____ G

19. What is the note value in image B?

_____ Whole Note  _____ Quarter Note  _____ Eighth Note

_____ Sixteenth Note  _____ Thirty-Second Note
20. What is the key signature in image C?

- D Major  - B Flat Major  - E Flat Major
- B Minor  - D Minor

21. What is the rhythm in image D?

- 2/4  - 3/4  - 4/4  - 6/8  - 9/8

22. What is the key change in image E?

- There is no key change  - Major to Major  - Major to Minor
- Minor to Minor  - Minor to Major
APPENDIX E

Demographic Information

1. What is your age? (Indicate your age in years): ______

2. Please indicate your gender: ______ Male ______ Female

3. Please select one of the following ethnic categories that best describes you:

   _____ African American       _____ American Indian/Alaskan Native
   _____ Asian                  _____ Caucasian
   _____ Hispanic               _____ Pacific Islander
   _____ Mixed                  _____ Other

4. Were you recruited to do this survey from the Music Department?

   _____ Yes       _____ No
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